A Record of the March of Events of 1947

# 1948
# BRITANNICA BOOK OF THE YEAR

• Prepared Under the Editorial Direction of
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# INTRODUCTION

THIS, *the eleventh issue of the Britannica Book of the Year will be distributed to more than 300,000 subscribers. For close to a decade, year after year, this volume has been well within the best-seller range.*

*The wide distribution is in part a result of a developing and an essential public interest in the leaders and in the events which help shape the lives of peoples everywhere. Newspapers are read. Radio reports are closely followed day by day. But since radio reports are forgotten and newspapers are thrown away, there is apparently a need for a more permanent record of contemporary history. In free countries that need may be fulfilled.*

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* * * * * * * *

*The Book of the Year was made not only by its authoritative contributors, but by the constantly watchful staff of the Editorial Department; by Miss Elsiebeth McDaniel and her assistants, Miss Martha Harriett Mullen, Miss Jean Mays and Miss Helen Julia Zeller, who marshalled the receipt and control of articles; by Mrs. Ruth Soffer, who assembled the illustrations; by the stylists and research checkers, Mrs. Jewel Braun Holahan, Miss Starr Spratt, Mrs. Ann S. Overton, Mrs. Ruth S. Rutherford, Mrs. Joyce Williams Ellis and Mrs. Melvina G. Hilland; by Miss Doreen Fae Rieke, who contacted the contributors on all queries in copy; by Mrs. Helga Buenger and Miss Caryl J. Opatrny, who recorded the flow of copy to and from the printers; by Miss Wilma Widdicombe, who laid the final page arrangements; by Miss Elaine M. Jost and Miss Mildred W. Benson, the indexers—all of whom worked under the general direction of Mrs. Mae H. MacKay and her two immediate assistants, Mrs. Harriet L. Milburn and Miss Lorene Lawson, to speed the articles to the presses.*

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DOROTHY R. ROSENMAN (Mrs. Samuel I. Rosenman). Chairman of the Board, National Committee on Housing. Author of *A Million Homes a Year.*

**D.S.Mu.** United States (*in part*)
DAVID SAVILLE MUZZEY. Emeritus Professor of History, Columbia University, New York, N.Y.

**D.St.** Advertising (*in part*)
DANIEL STARCH. Consultant in Business Research. Former Lecturer and Professor at Harvard University and the University of Wisconsin. Author of *Principles of Advertising;* etc.

**D.V.** Oxford University
DOUGLAS VEALE. Registrar of Oxford University, Oxford, Eng.

**D.Wn.** Botany (*in part*)
DONALD WYMAN. Horticulturist, Arnold Arboretum, Harvard University, Jamaica Plain, Mass.

**E.A.Gs.** Children's Books
ELIZABETH A. GROVES. Assistant Professor, School of Librarianship, University of Washington, Seattle, Wash.

**E.A.P.** Portugal (*in part*); etc.
EDGAR ALLISON PEERS. Professor of Spanish, University of Liverpool, Liverpool, Eng. Author of *A History of the Romantic Movement in Spain;* etc.

**E.By.** **Hotels**
ERNEST BYFIELD. President, Hotel Sherman, Inc.; Hotel Ambassador East, Inc., Chicago, Ill.

**E.C.C.** **American Veterans of World War II (Amvets)**
EDGAR C. CORRY, JR. National Commander, American Veterans of World War II (Amvets).

**E.C.D.M.** **Nevada**
E. CHARLES D. MARRIAGE. State Librarian, Nevada State Library, Carson City, Nev.

**E.Cul.** **Contract Bridge** *(in part)*
ELY CULBERTSON. Editor, *The Bridge World.* President, World Federation, Inc. Author of *Total Peace.*

**E.Dn.** **Home Economics**
ELOISE DAVISON. Director, Herald Tribune Home Institute, *Herald Tribune*, New York, N.Y.

**E.E.B.** **Montana**
EDWARD E. BENNETT. Professor of History and Political Science; Montana State University, Missoula, Mont.

**E.E.Bs.** **Civil Service** *(in part)*
SIR EDWARD E. BRIDGES. Permanent Secretary to H.M. Treasury; Secretary of the cabinet, London, Eng.

**E.E.D.** **Cornell University**
EDMUND E. DAY. President, Cornell University, Ithaca, N.Y.

**E.F.B.** **War Debts** *(in part)*
E. F. BARTELT. Fiscal Assistant Secretary, Treasury Department, Washington, D.C.

**E.F.D.** **Maine**
EDWARD FRENCH DOW. Professor of Government and Head of the Department of History and Government, University of Maine, Orono, Me.

**E.G.An.** **Shoe Industry**
ESTELLE G. ANDERSON (Mrs. Arthur D. Anderson). Associate Editor, *Boot and Shoe Recorder.*

**E.G.W.W.** **Boy Scouts** *(in part)*
EDWARD G. W. WOOD. Press Secretary, The Boy Scouts Association, London, Eng.

**E.H.Co.** **Gold** *(in part)*
EDWARD H. COLLINS. Member, Editorial Board, *The New York Times*, New York, N.Y. Author of *Inflation and Your Money.*

**E.H.Kr.** **Mineralogy**
EDWARD HENRY KRAUS. Dean Emeritus of the College of Literature, Science and the Arts, University of Michigan, Ann Arbor, Mich.

**E.I.F.** **Horticulture**
E. I. FARRINGTON. Former Secretary, Massachusetts Horticultural Society and Editor of *Horticulture.*

**E.I.P.** **Salvation Army**
ERNEST I. PUGMIRE. National Commander of the Salvation Army in the United States.

**E.J.C.** **Canning Industry**
EDWIN J. CAMERON. Director, Research Laboratories, National Canners Association.

**E.Kn.** **Contract Bridge** *(in part)*
EWART KEMPSON. Co-author of *Just Bridge.* Author of *Kempson on Bidding;* etc.

**El.Br.** **Anti-Semitism**
ELMER BERGER. Executive Director, The American Council for Judaism, Inc. Author of *The Jewish Dilemma.*

**E.L.Mn.** **Philosophy**
EDWIN L. MARVIN. Associate Professor of Philosophy and Psychology, Montana State University, Missoula, Mont.

**E.Low.** **Smith College**
ESTHER LOWENTHAL. Professor of Economics and Dean of the Faculty, Smith College, Northampton, Mass.

**E.L.R.** **St. Louis**
E. LANSING RAY. President and Editor, *St. Louis Globe-Democrat*, St. Louis, Mo.

**E.L.S.** **Armies of the World**
EDWIN L. SIBERT. Brigadier General, U.S.A. Governmental intelligence work.

**E.M.E.** **Airports and Flying Fields** *(in part)*
EMERY M. ELLINGSON. Acting Director, Operations Division, Air Transport Association of America, Washington, D.C.

**E.M.Ma.** **Camp Fire Girls**
ELIZABETH MORROW McSTEA. National Public Relations Director, Camp Fire Girls, Inc.

**E.O.E.** **Entomology**
EDWARD OLIVER ESSIG. Chairman, Division of Entomology and Parasitology, University of California, Berkeley, Calif.

**E.O.Se.** **Chambers of Commerce** *(in part)*
EARL O. SHREVE. President, Chamber of Commerce of the United States, Washington, D.C.

**E.P.Jo.** **Diabetes**
E. P. JOSLIN, M.D. Professor Emeritus of Clinical Medicine, Harvard University Medical School; Medical Director, George F. Baker Clinic, New England Deaconess Hospital, Boston, Mass.

**E.R.H.** **Fires and Fire Losses; etc.**
EDWARD R. HARDY. Secretary-Treasurer, Insurance Institute of America, New York, N.Y.

**E.S.Br.** **Tennis**
EDWIN S. BAKER. Executive Secretary, United States Lawn Tennis Association.

**E.S.Bs.** **Southern California, University of**
EMORY S. BOGARDUS. Dean of the Graduate School, University of Southern California, Los Angeles, Calif.

**E.S.C.** **Institutum Divi Thomae**
ELTON S. COOK. Dean of Research, Institutum Divi Thomae, Cincinnati, Ohio.

**E.Se.** **Book Publishing** *(in part)*
EDMOND SEGRAVE. Editor of the *Bookseller*, London, Eng.

**E.S.J.** **Child Labour**
ELIZABETH S. JOHNSON. Director, Child Labor Branch, Wage and Hour and Public Contracts Division, U.S. Department of Labor, Washington, D.C.

**E.S.Pt.** **Ethiopia**
ESTELLE SYLVIA PANKHURST. Editor and Proprietor, *New Times and Ethiopia News.* Author of *The Suffragette Movement; The Home Front;* etc.

**E.T.** **Kentucky**
EDWARD TUTHILL. Professor of History, University of Kentucky, Lexington, Ky., 1908–1945.

**E.V.Lh.** **Brewing and Beer**
E. V. LAHEY. President and Chairman, United States Brewers Foundation Inc.

**E.W.G.** **Electrical Industries** *(in part)*; **etc.**
EDWARD WILLIAM GOLDING. Head, Rural Electrification Section, Electrical Research Association, London, Eng. Author of *Electrification of Agriculture and Rural Districts;* etc.

**E.Wi.** **Italy** *(in part)*; **etc.**
ELIZABETH WISKEMANN. Former Correspondent, *The Economist*, Rome, Italy. Author of *Czechs and Germans; Undeclared War;* etc.

**E.W.Ml.** **Philippines, Republic of the**
EDWARD W. MILL. Assistant Chief, Division of Philippine Affairs, Office of Far Eastern Affairs, Department of State, Washington, D.C.

**E.Ws.** **Psychosomatic Medicine**
EDWARD WEISS, M.D. Professor of Clinical Medicine, Temple University Medical School, Philadelphia, Pa. Co-author of *Psychosomatic Medicine.*

**F.Aa.** **Spanish-American Literature**
FERNANDO ALEGRÍA. Instructor, Department of Spanish and Portuguese, University of California, Berkeley, Calif. Author of *Ideas Esteticas de la Poesia Moderna;* etc.

**F.A.H.** **Electric Transportation** *(in part)*.
FREDERICK ARTHUR HARPER. Mechanical Engineer, London, Midland and Scottish Railway.

**F.A.I.** **Inter-American Defense Board.**
F. A. IRVING. Brigadier General, U.S.A. Coordinator, Inter-American Defense Board, Washington, D.C.

**F.A.Sw.** **Art Exhibitions; etc.**
FREDERICK A. SWEET. Associate Curator of Painting and Sculpture, The Art Institute of Chicago, Chicago, Ill.

**F.C.Bg.** **Bread and Bakery Products**
FRANKLIN C. BING. Director, American Institute of Baking.

**F.C.Bo.** **Shipbuilding** *(in part)*; **etc.**
FRANK C. BOWEN. Editor, *Merchant Ships of the World.* Author of *The Golden Age of Sail;* etc.

**F.C.J.** **McGill University**
F. CYRIL JAMES. Principal and Vice-Chancellor, McGill University, Montreal, Que.

**F.Cn.** **Kansas**
FRANK CARLSON. Governor of Kansas.

**F.C.W.** **Cancer**
FRANCIS CARTER WOOD, M.D. Emeritus Director, Cancer Research, Columbia University, New York, N.Y. Author of *Clinical Diagnosis;* etc.

**F.D.N.** **Seventh-day Adventists**
FRANCIS D. NICHOL. Editor, *Review and Herald.* Author of *The Midnight Cry; The Answer to Modern Religious Thinking;* etc.

**F.D.R.** **New Mexico**
FRANK D. REEVE. Professor of History, University of New Mexico, Albuquerque, N.M.

**F.D.S.** **Estonia; Sweden; etc.**
FRANKLIN D. SCOTT. Professor of History, Northwestern University, Evanston, Ill. Author of *Bernadotte and the Fall of Napoleon;* etc.

**F.E.McM.** **Navies of the World**
FRANCIS EDWARD McMURTRIE. Editor, *Jane's Fighting Ships.* Naval Correspondent of the *Sunday Express,* London, Eng.

**F.E.R.** **Michigan, University of**
FRANK E. ROBBINS. Assistant to the President, University of Michigan, Ann Arbor, Mich.

**F.E.Rz.** **Lutherans**
FREDERICK EPPLING REINARTZ, D.D. Secretary, The United Lutheran Church in America.

**F.H.Aw.** **Netherlands** (*in part*)
F. H. ANDREW. British Adviser to the Netherlands Embassy.

**F.H.F.** **Air Conditioning**
F. H. FAUST. Manager, Commercial Engineering Divisions, Air Conditioning Department, General Electric Co., Bloomfield, N.J.

**F.J.B.** **Relief**
FRANK J. BRUNO. Professor Emeritus, Applied Sociology and Chairman, Department of Social Work, Washington University, St. Louis, Mo.

**F.J.Se.** **Vitamins**
FREDERICK J. STARE, M.D. Professor of Nutrition, Schools of Medicine and Public Health, Harvard University, Boston, Mass.

**F.L.Kp.** **Sunday Schools**
FORREST L. KNAPP. General Secretary, World Council of Christian Education.

**F.L.W.** **Jewish Welfare Board, National**
FRANK L. WEIL. President, The National Jewish Welfare Board. Vice-President, United Service Organizations, Inc.

**F.M.B.** **Marine Biology**
FRANCIS MARSH BALDWIN. Professor and Chairman, Biology Division; Sometime Director, Marine Biological Station, University of Southern California, Los Angeles, Calif.

**F.M.K.** **Accidents** (*in part*)
FRANKLIN M. KREML. Director, Northwestern University Traffic Institute, Evanston, Ill.

**F.M.Pr.** **Horse Racing** (*in part*)
F. M. PRIOR. Author of *Register of Thoroughbred Stallions;* etc.

**F.M.R.** **Insurance** (*in part*)
F. M. ROESING. Manager, Automobile Department, Continental Casualty Company, Chicago, Ill.

**F.M.V.T.** **Geology** (*in part*)
FRANCIS M. VAN TUYL. Professor and Head of the Department of Geology, Colorado School of Mines, Golden, Colo.

**F.Nn.** **Seismology**
FRANK NEUMANN. Chief, Section of Seismology, U.S. Coast and Geodetic Survey, U.S. Department of Commerce, Washington, D.C.

**F.R.I.** **Electrical Industries** (*in part*)
FRANK R. INNES. Associate Editor, *Electrical World.*

**Fr.Ro.** **Hand-ball**
FREDERICK ROTHE. Former Chairman, Committee on Handball, New York Athletic Club, New York, N.Y.

**Fr. T.** **Painting**
FREDERIC TAUBES. Formerly Carnegie Visiting Professor of Art and Resident Painter, University of Illinois, Urbana, Ill. Author of *Studio Secrets;* etc.

**F.St.** **Arabia** (*in part*); **etc.**
FREYA STARK (Mrs. S. Pirowne). Author of *Bagdad Sketches; The Southern Gates of Arabia; East is West;* etc.

**F.Ts.** **Friends, Religious Society of**
FREDERICK TOLLES. Librarian, Friends Historical Library, Swarthmore College, Swarthmore, Pa.

**F.W.N.** **Yeast**
FREDERIC W. NORDSIEK. Assistant Director, Department of Applied Research, Standard Brands Inc., New York, N.Y.

**F.W.Pk.** **British South African Protectorates**
FREDERICK WALTER PICK. Lecturer in Government, Co-operative College, Stanford Hall, Loughborough, Eng. Author of *Searchlight on German Africa; The Baltic Nations.*

**F.W.Rr.** **Meteorology** (*in part*)
F. W. REICHELDERFER. Chief, Weather Bureau, U.S. Department of Commerce, Washington, D.C.

**G.A.Ro.** **Copper; Secondary Metals; etc.**
GAR A. ROUSH. Editor, *Mineral Industry,* New York, N.Y. Author of *Strategic Mineral Supplies.*

**G.A.Si.** **United Church of Canada**
GORDON A. SISCO, D.D. Secretary, The United Church of Canada.

**G.B.En.** **Alimentary System, Disorders of**
GEORGE B. EUSTERMAN, M.D. Senior Consultant in Medicine, Mayo Clinic, Rochester, Minn. Professor of Medicine, Mayo Foundation, University of Minnesota Graduate School, Minneapolis, Minn.

**G.D.H.C.** **Wages and Hours** (*in part*); **etc.**
GEORGE DOUGLAS HOWARD COLE. Chichele Professor of Social and Political Theory, Oxford, Oxford, Eng. Author of *The World of Labour· Self-Government in Industry; Guild Socialism Restated;* etc.

**Ge.Bu.** **Hospitals** (*in part*)
GEORGE BUGBEE. Executive Director, American Hospital Association.

**G.E.L.** **Ear, Nose and Throat, Diseases of** (*in part*)
GEORGE E. LIEBERMAN, M.D. Instructor in Otolaryngology, University of Pennsylvania Medical School, Philadelphia, Pa.

**G.F.Hy.** **Munitions of War** (*in part*)
G. F. HUSSEY, JR. Vice Admiral, U.S.N. (Retired). Secretary, American Standards Association.

**G.Gr.** **National Geographic Society**
GILBERT GROSVENOR. President and Editor, National Geographic Society.

**G.Hb.** **Floods and Flood Control** (*in part*); **etc.**
GENE HOLCOMB. Assistant Chief, Technical Information Division, Office of the Chief of Engineers, Department of the Army, Washington, D.C.

**G-H.D.** **Belgian Colonial Empire; Belgium; etc.**
GEORGES-HENRI DUMONT. Editor, *Vrai.* Author of *Marie de Bourgogne; Léopold III, Roi des Belges;* etc.

**G.H.H.** **International Court of Justice**
GREEN H. HACKWORTH. Judge, International Court of Justice, The Hague. Author of *Digest of International Law.*

**G.I.Q.** **Archaeology** (*in part*)
GEORGE I. QUIMBY, JR. Curator of Exhibits, Department of Anthropology, Chicago Natural History Museum, Chicago, Ill. Author of *Aleutian Islanders;* etc.

**G.J.C.** **Economics**
GEORGE JOHNSON CADY. Associate Professor of Economics, Northwestern University, Evanston, Ill. Author of *Entrepreneurial Costs and Price.*

**G.J.M.** **Philology**
GEORGE J. METCALF. Associate Professor of Germanic Philology, The University of Chicago, Chicago, Ill. Author of *Forms of Address in German;* etc.

**G.J.N.** **Theatre** (*in part*)
GEORGE JEAN NATHAN. Critic. Author of *The Critic and the Drama; Encyclopaedia of the Theatre; Materia Critica;* etc.

**G.L.Bs.** **Radio** (*in part*); **etc.**
GEORGE LISLE BEERS. Assistant Director of Engineering, RCA Victor Division, Radio Corporation of America, New York, N.Y.

**G. Ln.** **Black Markets** (*in part*)
GEORGE LONDON. Writer and journalist, London, Eng.

**G.L.W.** **Refugees**
GEORGE L. WARREN. Adviser on Refugees and Displaced Persons, Department of State, Washington, D.C.

**G.M.C.** **Ear, Nose and Throat, Diseases of** (*in part*)
GEORGE MORRISON COATES, M.D. Professor of Otorhinology, Graduate School of Medicine, University of Pennsylvania, Philadelphia, Pa.

**G.M.Hy.** **Newspapers and Magazines** (*in part*)
GRANT M. HYDE. Director, School of Journalism, University of Wisconsin, Madison, Wis.

**G.M.J.** **Interior Decoration**
G. McSTAY JACKSON. President, McStay Jackson Co., Chicago, Ill.

**G.M.M.** **Aviation, Civil; etc.**
GREER M. MURPHY. Attorney, Civil Aeronautics Board, Washington, D.C.

**G.P.** **Television** (*in part*)
G. PARR. Editor, *Electronic Engineering.* Hon. Secretary, The Television Society.

**G.P.Du S.** **Zoology** (*in part*)
GRAHAM PHILLIP DU SHANE. Professor of Biology, Stanford University, Stanford, California.

**G.R.G.** **Toronto**
GEORGE R. GEARY. Barrister and Solicitor, Toronto, Ont.

**G.R.Mn.** **Rhodesia, Southern**
GEORGE ROY MORRISON. Editorial Assistant, *East Africa and Rhodesia.* Author of *Mixed Farming in East Africa.*

**G.T.H.** **British Columbia**
G. T. HATCHER. Research Supervisor, Bureau of Economics and Statistics, Province of British Columbia, Victoria, B.C.

**G.W.McC.** **Pennsylvania, University of**
GEORGE W. McCLELLAND. President, University of Pennsylvania, Philadelphia, Pa.

**H.A.C.** **Deafness**
HOWARD A. CARTER. Secretary, Council on Physical Medicine, American Medical Association.

**H.A.Ce.** **Seeing Eye, The**
HENRY A. COLGATE. President, The Seeing Eye, Inc., Morristown, N.J.

**H.A.H.** **Arizona**
HOWARD ARCHIBALD HUBBARD. Professor of History, University of Arizona, Tucson, Ariz.

**H.A.Rn.** Cold, Common
HOBART A. REIMANN. Professor of Medicine, Jefferson Medical College, Philadelphia, Pa.

**H.A.We.** Consumer Credit (*in part*)
HAROLD A. WALLACE. Executive Vice-President, Associated Credit Bureaus of America, Inc.

**H.B.Bn.** American Dental Association
HERBERT B. BAIN. Director, Bureau of Public Information, American Dental Association.

**H.B.Cs.** Anthropology
HENRY B. COLLINS, JR. Senior Ethnologist, Bureau of American Ethnology, Smithsonian Institution, Washington, D.C.

**H.Bd.** Flour
HARVIE BARNARD. Research Chemist, Clinton Industries, Inc., Clinton, Ia.

**H.Bec.** Sociology
HOWARD P. BECKER. Chief, Higher Education Branch, Educational and Religious Affairs Branch, Office of Military Government for Hesse, Wiesbaden, Germany. Formerly Professor of Sociology, University of Wisconsin, Madison, Wis.

**H.Bm.** Red Cross (*in part*)
HOWARD BONHAM. Vice-Chairman in charge of Public Relations, American National Red Cross.

**H.B.My.** Priorities and Allocations; etc.
H. B. McCOY. Director, Office of Domestic Commerce, U.S. Department of Commerce, Washington, D.C.

**H.Bu.** Public Health Services (*in part*)
HERMAN N. BUNDESEN, M.D. President, Board of Health, Chicago, Ill. Author of *The Growing Child;* etc.

**H.B.Ws.** Indiana University
HERMAN B. WELLS. President, Indiana University, Bloomington, Ind.

**H.B.Wy.** Supreme Court of the United States
HAROLD B. WILLEY. Deputy Clerk, United States Supreme Court, Washington, D.C.

**H.C.Cl.** New York
HERBERT C. CAMPBELL. Director, Division of State Publicity, Department of Commerce, State of New York, Albany, N.Y.

**H.C.D.** Education (*in part*)
HAROLD COLLETT DENT. Editor of *The Times Educational Supplement*, London, Eng.

**H.C.R.** Tulane University
HORACE C. RENEGAR. Director of Public Relations, Tulane University, New Orleans, Louisiana.

**H.C.Tn.** Insurance (*in part*)
HENRY C. THORN. Manager (Marine), Insurance Company of North America. Former President, Board of Underwriters of New York.

**H.Cy.** Bank of England
SIR HENRY CLAY. Warden of Nuffield College, Oxford, Eng. Author of *The Problem of Industrial Relations;* etc.

**H.D.G.** Candy
H. DON GUSSOW. Publisher and Editor of *Candy Industry*, New York, N.Y.

**He.Br.** Banking (*in part*)
HENRY BRUÈRE. President, Bowery Savings Bank, New York, N.Y.

**H.E.Hi.** Epidemics
HERMAN E. HILLEBOE, M.D. Commissioner of the New York State Health Department, Albany, N.Y.

**H.Fx.** Dermatology
HOWARD FOX, M.D. Professor Emeritus of Dermatology and Syphilology, College of Medicine, New York University, New York, N.Y. Author of *Skin Diseases in Infancy and Childhood;* etc.

**H.G.M.** Fisheries (*in part*); etc.
HENRY GASCOYEN MAURICE. President, Zoological Society of London, London, Eng. Secretary, Society for the Preservation of the Fauna of the Empire. Author of *Sometimes an Angler*.

**H.G.Rn.** India, Dominion of; etc.
H. G. RAWLINSON. Former Principal, Deccan College, Poona, India.

**H.G.S.** Shipbuilding (*in part*)
H. GERRISH SMITH. President, Shipbuilders Council of America.

**H.H.Be.** Soil Erosion and Soil Conservation
HUGH H. BENNETT. Chief, Soil Conservation Service, U.S. Department of Agriculture, Washington, D.C.

**H.H.P.** Indiana
HOWARD H. PECKHAM. Director, Indiana Historical Bureau, Indianapolis, Ind.

**H.J.A.** Narcotics and Narcotic Traffic
H. J. ANSLINGER. Commissioner of Narcotics, Treasury Department, Washington, D.C. Author of *The Physician and the Federal Narcotic Law*.

**H.J.De.** Washington
HERMAN J. DEUTSCH. Professor of History, State College of Washington, Pullman, Wash.

**H.J.G.G.** National Parks and Monuments (*in part*)
HERBERT JOHN GORDON GRIFFIN. Secretary, Council for the Preservation of Rural England.

**H.Js.** Town and Regional Planning; etc.
HARLEAN JAMES. Executive Secretary, American Planning and Civic Association.

**H.Ko.** Communism; Fascism; etc.
HANS KOHN. Sydenham Clark Parsons Professor of History, Smith College, Northampton, Mass. Author of *The Idea of Nationalism, a Study of Its Origins and Background;* etc.

**H.L.B.** Ohio State University
HOWARD LANDIS BEVIS. President, Ohio State University, Columbus, Ohio.

**H.L.Jn.** Spanish Literature
HARVEY L. JOHNSON. Associate Professor, Department of Romance Languages, Northwestern University, Evanston, Ill.

**H.L.St.** Motor-Boat Racing; etc.
HERBERT L. STONE. Editor, *Yachting*, New York, N.Y. Author of *America's Cup Races;* etc.

**H.L.Tl.** Rubber
HARLAN L. TRUMBULL. Assistant to the Director of Research, The B. F. Goodrich Co., Akron, O.

**H.M.Wr.** Infantile Paralysis
H. M. WEAVER. Director of Research, National Foundation for Infantile Paralysis, New York, N.Y.

**H.Od.** Standards, National Bureau of
HUGH ODISHAW. Assistant to the Director, National Bureau of Standards, U.S. Department of Commerce, Washington, D.C.

**H.O.V.** New York University
HAROLD O. VOORHIS. Vice-Chancellor and Secretary, New York University, New York, N.Y.

**H.P.D.** Christian Unity; Religion
HARLAN PAUL DOUGLASS, D.D. Editor, *Christendom*. Author of *A Decade of Objective Progress in Church Unity;* etc.

**H.Pn.** Stocks and Bonds (*in part*)
HARGREAVES PARKINSON. Editor, *Financial Times*, London, Eng. Author of *The Small Investor; Ordinary Shares;* etc.

**H.R.G.** Airports and Flying Fields (*in part*)
HAROLD RODERICK GILLMAN. Secretary, Aerodrome Owners' Association and the British Air Charter Association.

**H.R.V.** Psychiatry
HENRY R. VIETS, M.D. Lecturer on Neurology, Harvard Medical School; Neurologist, Massachusetts General Hospital, Boston, Mass. Librarian, Boston Medical Library, Boston, Mass.

**H.S.A.** Cricket
HARRY SURTEES ALTHAM. Housemaster, Winchester College, Winchester, Eng. Author of *History of Cricket*.

**H.S.C.C.** Archery
HENRY S. C. CUMMINGS. Secretary-Treasurer, National Archery Association of the United States.

**H.S.D.** Anglo-Egyptian Sudan (*in part*); etc.
HERBERT STANLEY DEIGHTON. Fellow and Dean of Pembroke College, Oxford, Eng.

**H.S.S.** South Dakota
HERBERT S. SCHELL. Professor of American History and Director of the Graduate School, University of South Dakota, Vermillion, S.D. Author of *South Dakota, Its Beginnings and Growth*.

**H.S.-W.** Bulgaria (*in part*); etc.
HUGH SETON-WATSON. Fellow and Praelector in Politics, University College, Oxford University, Oxford, Eng. Author of *Eastern Europe Between the Wars*.

**H.T.** Soap, Perfumery and Cosmetics
HENRY TETLOW. Henry Tetlow Company, Washington, D.C.

**H.T.Ch.** Chiang Kai-shek; China
HUNG-TI CHU. Former Head of Information and Reference Department, Chinese News Service.

**H.T.Dg.** Decorations, Medals and Badges—Military, Naval and Civil (*in part*)
HENRY TAPRELL DORLING. Captain, R.N. (Retired). Author of *Ribbons and Medals; Swept Channels; Endless Story;* etc.

**H.W.Do.** Princeton University
HAROLD W. DODDS. President, Princeton University, Princeton, N.J.

**H.W.Hk.** Child Welfare
HOWARD WILLIAM HOPKIRK. Executive Director, Child Welfare League of America, Inc., New York, N.Y.

**H.W.L.** Socialism (*in part*)
HARRY W. LAIDLER. Executive Director, League for Industrial Democracy.

**H.W.Rn.** Tunnels
HAROLD W. RICHARDSON. Executive Editor, *Construction Methods*.

**H.Z.** **Wilderness Preservation; etc.**
HOWARD ZAHNISER. Executive Secretary, The Wilderness Society. Editor of *The Living Wilderness.*

**I.Bo.** **Johns Hopkins University**
ISAIAH BOWMAN. President, The Johns Hopkins University, Baltimore, Md. Author of *Geography in Relation to the Social Sciences;* etc.

**I.Br.** **Theatre** *(in part)*
IVOR BROWN. Editor of the *Observer,* London, Eng. Professor of Drama to the Royal Society of Literature.

**I.Gg.** **Post Office** *(in part)*
ISAAC GREGG. Former Director of Press Relations, Office of the Postmaster General, Washington, D.C.

**I.L.Bl.** **Linen and Flax; etc.**
IRENE L. BLUNT. Secretary, The National Federation of Textiles, Inc., New York, N.Y.

**I.M.S.** **Hawaii**
INGRAM M. STAINBACK. Governor of Hawaii.

**I.R.M.M.** **Architecture** *(in part)*
IAN ROBERT MORE McCALLUM. Assistant Editor, *Architectural Review.* Editor of *Physical Planning: The Groundwork of a New Technique.*

**I.W.D.** **Farm Credit Administration**
I. W. DUGGAN. Governor, Farm Credit Administration, U.S. Department of Agriculture, Washington, D.C.

**I.W.R.** **Words and Meanings, New**
I. WILLIS RUSSELL. Chairman of the Research Committee on New Words of the American Dialect Society which prepared the article. The Committee consists of: Henry Alexander, C. L. Barnhart, Atcheson L. Hench, A. H. Marckwardt, Mamie J. Meredith, Peter Tamony, Harold Wentworth and George Pope Shannon.

**J.A.G.** **Furniture Industry**
J. A. GARY. Editor, *Furniture Age,* Chicago, Ill.

**J.A.Ma.** **Montreal**
J. ARTHUR MATHEWSON. Judge, Mathewson and Smith, Barristers, Montreal, Que.

**J.A.Mi.** **Electric Transportation** *(in part)*
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**J.A.My.** **Tuberculosis**
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**J.A.S.R.** **Coal** *(in part)*
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**J.Bk.** **Book-Collecting and Book Prices**
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**J.Br.** **Connecticut**
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**J.C.Ar.** **Utah**
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**J.C.As.** **British Legion**
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**J.C.Dr.** **Inter-American Defense Conference**
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**J.Ce.** **Burma** *(in part)*
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**J.C.Ms.** **Agriculture** *(in part);* **Fruit; etc.**
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**J.Cw.** **Housing** *(in part)*
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**J.D.G.** **Reconstruction Finance Corporation**
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**J.E.Ar.** **Notre Dame, University of**
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**J.E.Fm.** **Alabama**
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**J.E.H.** **Federal Bureau of Investigation**
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**J.E.Mo.** **National Education Association**
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**J.En.** **Delaware**
JEANNETTE ECKMAN. Editor, *Delaware, A Guide to the First State.*

**J.E.Sh.** **Jamaica; Trinidad; etc.**
SIR JOHN EVELYN SHUCKBURGH. Deputy Under Secretary of State, British Colonial Office, 1931–42.

**J.E.Wt.** **National Association of Evangelicals**
J. ELWIN WRIGHT. Executive Secretary, National Association of Evangelicals, Boston, Mass.

**J.F.Fy.** **Coast Guard, U.S.**
JOSEPH F. FARLEY. Commandant, United States Coast Guard.

**J.F.O'N.** **American Legion**
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**J.Ge.** **Museums** *(in part)*
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**J.H.Df.** **Pennsylvania**
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**J.H.L.** **Unitarian Church**
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**J.J.Dn.** **Civil Service** *(in part)*
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**J.J.McC.** **International Bank for Reconstruction and Development**
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**J.J.My.** **Secret Service, U.S.**
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**J.K.L.** **Banking** *(in part);* **etc.**
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**J.Kr.** **German Literature**
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**J.LaF.** **Roman Catholic Church; Pius XII; etc.**
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**J.L-Ee.** **Puerto Rico**
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**J.L.J.** **Manitoba**
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**J.L.Ml.** **Minnesota, University of**
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**J.Ln.** **Accidents** *(in part);* **Taxation** *(in part);* **etc.**
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**J.McAt.** **Social Security** *(in part)*
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**J.Md.** **South Africa, The Union of** *(in part)*
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**J.M.Mag.** **Taxation** *(in part)*
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**J.Nn.** **Ethical Culture Movement**
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**Jo.C.W.** **Paints and Varnishes**
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**J.P.D.** **Boxing**
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**J.P.J.** **Donations and Bequests** *(in part)*
JOHN PRICE JONES. President, The John Price Jones Corporation, New York, N.Y. Author of *The Yearbook of Philanthropy.*

**J.Ra.** **Pacific Islands under Trusteeship; etc.**
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J.R.Cl. **Mormons**
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J.R.Hr. **Venereal Diseases** (*in part*)
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J.Rl. **Illiteracy**
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J.Sto. **Electronics**
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J.T.Ar. **Etching**
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J.We. **Wines**
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J.W.Je. **Federal Power Commission**
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J.W.Mw. **Reparations**
JOSEPH W. MARLOW. Editor and Research Analyst, Military Intelligence Service, U.S. War Department, 1944–46.

K.Bn. **Libraries** (*in part*)
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K.E.M. **Bryn Mawr College**
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K.F.C. **National Guard**
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K.M.E. **London University**
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K.R.K. **Tennessee Valley Authority**
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K.S.L. **Missions, Foreign**
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K.Sm. **Poland; Trieste, The Free Territory of**
KAZIMIERZ SMOGORZEWSKI. Polish journalist in Paris, Berlin, etc. Founder and Editor, *Free Europe*, London, Eng.

K.T.C. **Massachusetts Institute of Technology**
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L.A.L. **Insurance** (*in part*)
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L.A.M. **Veterinary Medicine**
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L.A.McA. **Oregon**
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L.B.H. **Selective Service** (*in part*)
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L.C.H. **Wyoming**
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L.C.K. **Patents**
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L.de B.H. **Swimming**
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L.D.U. **Detroit**
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L.Du. **George VI; Parliament, Houses of**
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L.E.T. **Census Data, 1947**
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L.Gu. **Municipal Government** (*in part*)
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L.H.L. **Chicago; Illinois**
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L.J.R. **Information and Educational Exchange, Office of**
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L.M.F. **Petroleum**
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L.M.Gh. **United Nations (U.N.)**
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L.Mh. **Dance** (*in part*)
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L.M.S.M. **Dentistry**
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L.M.W. **Alaska**
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L.O.C. **Coast and Geodetic Survey, U.S.**
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L.O.P. **Motion Pictures** (*in part*)
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L.W.Ba. **Boy Scouts** (*in part*)
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L.We. **Bulgaria** (*in part*)
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L.Wo. **Labour Unions** (*in part*)
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L.W.R. **United Nations Relief and Rehabilitation Administration**
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M.Ab. **Foreign Investments in the United States; etc.**
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Ma.B. **Turkey** (*in part*)
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M.A.S. **Girl Scouts** (*in part*)
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M.C.Ml. **Rhode Island**
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M.Dk. **Eastern Orthodox Churches**
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M.Dn. **Law** (*in part*)
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M.D.T. **Military Academy, U.S.**
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**M.E.H.** Biochemistry
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**M.E.S.** Young Womens Christian Association (*in part*)
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**M.F.C.** Italian Literature
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**M.Fd.** Pneumonia
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**M.Fe.** Trustee Territories
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**M.Fi.** Medicine (*in part*)
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**M.Fr.** Bacteriology
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**M.G.G.** Public Utilities (*in part*)
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**M.Gt.** Budget, National; Income and Product, U.S.; etc.
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**M.Ha.** Philately
MANNEL HAHN. Head, Service Section, *The Rotarian* and *Revista Rotaria.* Author of *U.S. Post Office, 1851–60; U.S. Postal Markings, 1847–51; So You're Collecting Stamps;* etc.

**M.H.T.** Columbia University
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**M.H.W.** Oklahoma
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**M.Jol.** French Literature
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**M.J.Sy.** Vocational Rehabilitation, Office of
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**M.Kr.** Young Womens Christian Association (*in part*)
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**M.Lb.** Liquors, Alcoholic (*in part*)
MAX LOEB. Chief of Field Division, Illinois Liquor Control Commission.

**M.L.E.** Civil Liberties (*in part*)
MORRIS L. ERNST. Attorney, firm of Greenbaum, Wolff and Ernst, New York, N.Y. Author of *The First Freedom;* etc.

**M.L.M.** Guatemala; Honduras; etc.
MAX L. MOORHEAD. Assistant Professor of History, University of Oklahoma, Norman, Okla.

**M.L.W.** Four-H Clubs
M. L. WILSON. Director of Extension Work, U.S. Department of Agriculture, Washington, D.C. Author of *Farm Relief and Domestic Allotment Plan;* etc.

**M.M.Hn.** Wellesley College
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**M.Ml.** Betting and Gambling (*in part*)
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**M.O.P.** American Library Association
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**M.P.W.** Basketball; Track and Field Sports; etc.
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**M.Si.** Printing
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**M.S.Mr.** Hutchins, Robert Maynard
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**M.Sr.** Birth Control
MARGARET SANGER. Honorary Chairman, Planned Parenthood Federation, Inc. Author of *Happiness in Marriage;* etc.

**M.T.H.** Federal Deposit Insurance Corporation
MAPLE T. HARL. Chairman, Federal Deposit Insurance Corporation, Washington, D.C.

**M.V.W.** Juvenile Delinquency
MIRIAM VAN WATERS. Superintendent, Reformatory for Women, Framingham, Mass. Author of *Youth in Conflict;* etc.

**M.W.H.** Parents and Teachers, National Congress of
MABEL W. HUGHES (Mrs. L. W. Hughes). President, National Congress of Parents and Teachers, Chicago, Ill.

**M.W.Ss.** Aqueducts
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**N.B.D.** National Parks and Monuments (*in part*)
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**N.C.B.** Lumber (*in part*)
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**N.E.W.** Plague, Bubonic and Pneumonic
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**N.F.Ne.** Coal (*in part*)
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**N.F.S.** Jet Propulsion; Munitions of War (*in part*)
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**N.T.** Socialism (*in part*)
NORMAN THOMAS. Socialist presidential candidate, 1940, 1944. Author of *America's Way Out;* etc.

**N.T.N.** Lend-Lease
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**N.T.R.** Coinage
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**O.E.P.** Young Men's Christian Association (*in part*)
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**O.H.Mr.** Psychology
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**O.L.Ds.** Securities and Exchange Commission
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**O.Le.** Sinkiang
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**O.M.** Montreal, University of
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**O.P.P.** Automobile Industry
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**O.P.S.** Geography
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**O.R.E.** Federal Security Agency
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**P.Ae.** Colorado
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**P.A.Se.** **Exploration and Discovery** (*in part*)
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**P.A.V.** **Korea; Mongolia; etc.**
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**P.A.W.** **Federal Communications Commission**
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**P.B.D.** **Drug Administration, U.S.**
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**P.B.F.** **Federal Works Agency**
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**P.Bn.** **Crime** (*in part*); **etc.**
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**P.Br.** **Billiards**
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**P.By.** **Cleveland; Ohio**
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**P.D.W.** **Heart and Heart Diseases**
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**P.Eg.** **Business Review** (*in part*)
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**P.E.M.** **Peace Treaties; etc.**
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**P.E.P.** **Libraries** (*in part*)
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**P.E.R.** **Red Cross** (*in part*); **etc.**
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**P.G.H.** **Committee for Economic Development**
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**P.J.M.** **Catholic University of America**
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**P.M.Hg.** **National Labor Relations Board**
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**P.My.** **Congress of Industrial Organizations**
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**P.R.Hy.** **Medical Rehabilitation of Disabled Veterans**
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**P.S.H.** **Arthritis**
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**P.Ss.** **Insurance** (*in part*)
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**P.T.** **Gynaecology and Obstetrics**
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**P.T.H.** **Aliens** (*in part*)
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**Q.W.** **War Crimes; etc.**
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**R.A.Bn.** **Advertising** (*in part*)
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**R.A.G.** **Northwest Territories**
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**R.A.Ga.** **Iowa**
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**Ra.L.** **Endocrinology** (*in part*)
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**R.B.A.** **Washington, University of (Seattle)**
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**R.B.B.** **Leather**
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**R.B.E.** **Lynching**
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**R.B.J.** **Minnesota**
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**R.B.Kr.** **San Francisco**
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**R.Br.** **Music** (*in part*)
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**R.B.S.** **American Citizens Abroad**
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**R.C.Pe.** **War Debts** (*in part*)
REXFORD C. PARMELEE. Statistician-Consultant, Clearing Office for Foreign Transactions, U.S. Department of Commerce, Washington, D.C.

**R.d'E.** **Brazil**
RAUL d'ECA. Assistant Public Affairs Officer, American Embassy, Rio de Janeiro, Brazil. Author of *Outline History of Latin America.*

**R.E.Cd.** **Botany** (*in part*)
R. E. CLELAND. Professor of Botany, Head of Department of Botany, Indiana University, Bloomington, Ind.

**R.E.D.** **Osteopathy**
R. E. DUFFELL, D.O. Editor and Director of Statistics and Information, American Osteopathic Association.

**R.E.E.H.** **Baptist Church**
REUBEN E. E. HARKNESS. President, The American Baptist Historical Society.

**R.E.F.** **Federal Trade Commission**
ROBERT E. FREER. Chairman, Federal Trade Commission, Washington, D.C.

**R.E.Rs.** **Chambers of Commerce** (*in part*)
RAYMOND E. ROBERTS. Editor, *Future*, official publication of the United States Junior Chamber of Commerce.

**R.E.Sr.** **American Literature**
ROBERT E. SPILLER. Professor of English, University of Pennsylvania, Philadelphia, Pa. Author of *The American in England;* etc.

**R.F.B.** **Massachusetts**
ROBERT F. BRADFORD. Governor of Massachusetts.

**R.F.K.** **Polo**
ROBERT F. KELLEY. Assistant Secretary, United States Polo Association. Former sports writer, *The New York Times*, New York, N.Y.

**R.Fs.** **Wisconsin, University of**
ROBERT FOSS. Editor, News Service, University of Wisconsin, Madison, Wis.

**R.G.D.A.** **Prices** (*in part*)
ROY GEORGE DOUGLAS ALLEN. Professor of Statistics, University of London, London, Eng. Author of *Mathematical Analysis for Economists.*

**R.G.Ha.** **Mount Holyoke College**
ROSWELL GRAY HAM. President, Mount Holyoke College, South Hadley, Mass.

**R.G.M.** **Paper and Pulp Industry**
R. G. MACDONALD. Secretary-Treasurer, Technical Association of the Pulp and Paper Industry, New York, N.Y.

**R.Gs.** **Co-operative Movement**
RICHARD GILES. Managing Editor, Cooperative News Service, National Cooperatives, Inc.

**R.G.S.** **California, University of**
ROBERT G. SPROUL. President, University of California, Berkeley, Calif.

**R.Gz.** **Music** (*in part*)
RUDOLPH GANZ. President, Chicago Musical College, Chicago, Ill.

**R.H.Fn.** **Argentina; Venezuela; etc.**
RUSSELL H. FITZGIBBON. Associate Professor of Political Science. University of California, Los Angeles, Calif. Author of *Cuba and the United States, 1900–1935; Outline of Latin American History.*

**R.H.Ls.** **Museums** (*in part*)
RALPH H. LEWIS. Assistant Chief, Museum Branch, National Park Service, U.S. Department of the Interior, Washington, D.C.

**R.Hs.** **Community Trusts**
RALPH HAYES. Executive Director, New York Community Trust. Director, Equitable Trust Company, Wilmington, Del.

**Ri.A.B.** **Veterans' Organizations**
RICHARD A. BROWN. Executive Secretary, Veterans' Organizations Information Service, New York, N.Y.

**R.Is.** **Anaemia**
RAPHAEL ISAACS, M.D. Attending Physician in Haematology, Michael Reese Hospital, Chicago, Ill. Co-author of *Diseases of the Blood.*

**R.J.B.** **Archaeology** (*in part*)
ROBERT J. BRAIDWOOD. Assistant Professor of Old World Prehistory, The Oriental Institute and the Department of Anthropology, The University of Chicago, Chicago, Ill.

**R.L.Cn.** **Fisheries** (*in part*)
RACHEL L. CARSON. Information Specialist, Fish and Wildlife Service, U.S. Department of the Interior, Washington, D.C.

**R.L.Fo.** **Accidents** (*in part*)
R. L. FORNEY. General Secretary, National Safety Council, Chicago, Ill.

**R.L.Fs.** **Duke University**
ROBERT LEE FLOWERS. President, Duke University, Durham, N. C.

**R.L.St.** **Colorado, University of**
ROBERT L. STEARNS. President, University of Colorado, Boulder, Colo.

**R.Man.** **Motion Pictures** (*in part*)
ROGER MANVELL. Research Officer, British Film Institute. Co-author of *Twenty Years of British Cinema.*

**R.M.Fy.** **Housing** (*in part*)
RAYMOND M. FOLEY. Administrator, Housing and Home Finance Agency, Washington, D.C.

**Ro.B.** **Zoology** (*in part*)
ROBERT BEAN. Director, The Chicago Zoological Park, Brookfield, Ill.

**Ro.McG.** **Baseball**
ROSCOE McGOWEN. Sports writer, *The New York Times,* New York, N.Y.

**R.P.Bo.** **Mathematics**
RALPH PHILIP BOAS, JR. Executive Editor of *Mathematical Reviews.*

**R.P.Br.** **Missouri**
RALPH P. BIEBER. Professor of History, Washington University, St. Louis, Mo.

**R.P.S.** **Bank for International Settlements**
ROBERT PHILIPPE SCHWARZ. Author of *Bretton Woods; L'Autriche de 1918 à 1925;* etc.

**R.R.R.B.** **Bowles, Chester**
ROBERT R. R. BROOKS. Dean, Williams College, Williamstown, Mass.

**R.S.Cr.** **Naval Academy, U.S.**
R. S. CRAIGHILL. Commander, U.S.N. Secretary, Academic Board, United States Naval Academy, Annapolis, Md.

**R.S.T.** **Munitions of War** (*in part*)**; etc.**
ROBERT S. THOMAS. Military Historian, Historical Division, Special Staff, War Department, Washington, D.C. Author of *The Story of the 30th Division, A.E.F.*

**R.S.W.P.** **Civil Liberties** (*in part*)
ROBERT SPENCE WATSON POLLARD. Author of *Conscience and Liberty; The New Education Act Explained.*

**R.Tu.** **Democratic Party; Republican Party; etc.**
RAY TUCKER. Writer of syndicated column, "The National Whirligig." Author of *The Mirrors of 1932; Sons of the Wild Jackass.*

**R.W.Cr.** **Radio** (*in part*)
RUFUS WILLIAM CRATER. Associate Editor, *Broadcasting Magazine,* Washington, D.C.

**R.Wd.** **Public Opinion Surveys**
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**R.W.J.K.** **Young Men's Christian Association** (*in part*)
REGINALD WILLIAM JAMES KEEBLE. Press Officer, National Council of Young Men's Christian Associations.

**R.Wn.** **Australia, Commonwealth of**
ROLAND WILSON. Commonwealth Statistician and Economic Adviser to the Treasury, Canberra, Australia. Author of *Capital Imports and the Terms of Trade.*

**R.Zl.** **Palaeontology, Vertebrate**
RAINER ZANGERL. Curator of Fossil Reptiles, Chicago Natural History Museum, Chicago, Ill.

**S.A.L.** **Prisons** (*in part*)
SAM A. LEWISOHN. Former President, American Prison Association.

**S.C.Ha.** **Dartmouth College**
SIDNEY CHANDLER HAYWARD. Secretary of Dartmouth College, Hanover, N.H.

**S.de la R.** **Liberia**
SIDNEY de la RUE. Special Assistant to the Director, Office of Near Eastern and African Affairs, Department of State, Washington, D.C.

**S.E.Sh.** **Toronto, University of**
SIDNEY E. SMITH. President, University of Toronto, Toronto, Ont.

**S.E.Ws.** **Albania** (*in part*)
SEWARD ELIOT WATROUS. Program Organizer, European Service, British Broadcasting Corporation.

**S.Gn.** **New Jersey**
SIDNEY GOLDMAN. Head Archives and History Bureau of New Jersey, Trenton, N.J.

**S.J.Bu.** **Archives, National**
SOLON JUSTUS BUCK. Archivist of the United States.

**S.L.S.** **Clothing Industry**
STANLEY L. SIMONS. Editor, *The Clothing Trade Journal.* Director, Garment Technical Institute.

**S.McC.C.** **Federal Council of the Churches of Christ in America**
SAMUEL McCREA CAVERT. General Secretary, The Federal Council of the Churches of Christ in America.

**S.McC.L.** **International Labour Organization**
SAMUEL McCUNE LINDSAY. Professor Emeritus of Social Legislation, Columbia University, New York, N.Y. Author of *Railway Labor in the U.S.; Emergency Housing Legislation;* etc.

**S.McG.** **Texas**
STUART McGREGOR. Associate Editor, *The Dallas Morning News,* Dallas, Tex.

**S.Nr.** **Formosa; Manchuria; etc.**
STANLEY NEHMER. Chief, Light Industry Unit, Japan Branch, Division of Research for Far East, U.S. Department of State. Author of *Japan . . . Foe of Freedom.*

**S.P.J.** **Aviation, Military** (*in part*)
S. PAUL JOHNSTON. Director, Institute of the Aeronautical Sciences, New York, N.Y.

**S.R.S.** **Glass**
SAMUEL RAY SCHOLES. Dean, New York State College of Ceramics, Alfred University, Alfred, N.Y.

**S.S.H.** **Stocks and Bonds** (*in part*)
SOLOMON S. HUEBNER. President, American College of Life Underwriters. Professor of Insurance and Commerce, Wharton School of Finance and Commerce, University of Pennsylvania, Philadelphia, Pa.

**S.So.** **Endocrinology** (*in part*)
SAMUEL SOSKIN, M.D. Dean, Michael Reese Hospital Postgraduate School; Professorial Lecturer, Department of Physiology, The University of Chicago, Chicago, Ill.

**S.Sp.** **Music** (*in part*)
SIGMUND SPAETH. Lecturer and Broadcaster. Author of *At Home With Music; Music For Fun; Read 'em and Weep;* etc.

**S.Tf.** **Radio** (*in part*)
SOL TAISHOFF. President, Editor and Publisher of Broadcasting Publications, Inc., Washington, D.C.

**T.Bar.** **Wealth and Income, Distribution of** (*in part*); **etc.**
TIBOR BARNA. Fellow, Nuffield College, Oxford, Eng. Author of *Redistribution of Incomes through Public Finance in 1937.*

**T.C.Bl.** **International Trade**
THOMAS C. BLAISDELL. Assistant to the Secretary of Commerce for International Trade and Director, Office of International Trade, U.S. Department of Commerce, Washington, D.C.

**T.E.S.** **National Mediation Board**
TEDFORD EUGENE SCHOONOVER. Mediator, National Mediation Board, Washington, D.C.

**T.E.U.** **Political Parties, British; etc.**
T. E. UTLEY. Editorial staff, *The Observer*, London, England.

**T.F.F.** **Medicine** (*in part*)
T. F. FOX, M.D. Editor, *The Lancet*, London, Eng.

**T.F.M-O.** **Tokyo**
THOMAS FRANCIS MAYER-OAKES. Former Editor, the *International Quarterly.*

**T.H.MacD.** **Roads and Highways**
THOMAS H. MacDONALD. Commissioner, Public Roads Administration, Federal Works Agency, Washington, D.C.

**T.H.O.** **Physics**
THOMAS H. OSGOOD. Head, Department of Physics and Astronomy, Michigan State College, East Lansing, Mich. Co-author of *An Outline of Atomic Physics.*

**T.Hr.** **Switzerland** (*in part*)
THEODORE HALLER. London Correspondent, *Radio Berne.*

**T.J.D.** **Cycling; Lacrosse; etc.**
THOMAS J. DEAGAN, JR. Director of Public Relations, Chesapeake & Ohio Lines. Author of *This Is Public Relations.*

**T.N.B.** **Prices** (*in part*)
THEODORE N. BECKMAN. Professor of Business Organization, Ohio State University, Columbus, Ohio. Author of *Credits and Collections in Theory and Practice; Wholesaling;* etc.

**T.P.W.** **Civil Aeronautics Administration**
THEODORE P. WRIGHT. Administrator of Civil Aeronautics, U.S. Department of Commerce, Washington, D.C.

**T.S.P.** **Texas, University of**
T. S. PAINTER. President, University of Texas, Austin, Tex.

**T.T.S.** **Nervous System**
THEODORE T. STONE, M.D. Associate Professor in Nervous and Mental Diseases, Northwestern University Medical School, Chicago, Ill.

**V.B.B.** **Business Review** (*in part*)
VIVA BELLE BOOTHE. Director, Bureau of Business Research, College of Commerce and Administration, Ohio State University, Columbus, Ohio. Author of *Earnings in Ohio Industries;* etc.

**V.D.C.** **Disabled American Veterans**
VIVIAN DAVIS CORBLY. National Adjutant, Disabled American Veterans, Cincinnati, O.

**W.A.Dw.** **Fencing**
WARREN A. DOW. Secretary, Amateur Fencers League of America.

**W.B.Mi.** **Aliens** (*in part*); **etc.**
WATSON B. MILLER. Commissioner, Immigration and Naturalization Service, U.S. Department of Justice, Philadelphia, Pa.

**W.B.Pu.** **Presbyterian Church**
WILLIAM BARROW PUGH, D.D. Stated Clerk, The Presbyterian Church in the United States of America.

**W.D.K.** **Christian Science**
WILLIAM D. KILPATRICK. Manager, Committees on Publication, The First Church of Christ, Scientist, Boston, Mass.

**W.D.Mn.** **Photography**
WILLARD D. MORGAN. Editor, *The Complete Photographer* and *The Encyclopedia of Photography.*

**W.E.An.** **English Literature**
WALTER ERNEST ALLEN. Fiction reviewer, *New Statesman and Nation.* Author of *Rogue Elephant; The Black Country;* etc.

**W.E.Cw.** **Moscow; Russian Literature; etc.**
WILLIAM EDWARD CRANKSHAW. Author of *Russia and The Russians; Russia and Great Britain;* etc.

**W.E.Ds.** **Cartography**
WILLIAM E. DAVIES. Chief of Map Research, Army Map Service, Department of the Army, Washington, D.C.

**W.E.Ga.** **Disciples of Christ**
W. E. GARRISON. Professor Emeritus of Church History, Disciples Divinity House, and The University of Chicago, Chicago, Ill.

**W.E.J.** **Municipal Government** (*in part*)
W. ERIC JACKSON. Assistant Clerk, London County Council, London, Eng.

**W.E.O.** **Shows, Animal** (*in part*)
WILLIAM E. OGILVIE. Secretary-Manager, International Live Stock Exposition, Chicago, Ill. Author of *Pioneer Agricultural Journalists.*

**W.E.Ry.** **Price Administration, Office of**
WILLIAM E. REMY. Formerly Deputy Administrator for Enforcement, Office of Price Administration, Washington, D.C.

**W.E.Ss.** **New Hampshire**
WAYNE EDSON STEVENS. Professor of History, Dartmouth College, Hanover, N.H.

**W.E.Th.** **Permanent Joint Board on Defense (U.S. and Canada)**
WENDELL E. THORNE. Administrative Assistant, Division of Research and Statistics, Board of Governors of the Federal Reserve System.

**W.F.Br.** **Urology**
WILLIAM F. BRAASCH, M.D. Professor of Urology, University of Minnesota Graduate School, Mayo Foundation, Rochester, Minn. Editorial Committee, *Journal of Urology.*

**W.Ft.** **Paraguay; etc.**
WESLEY FROST. Professor of International Relations, the American Institute for Foreign Trade, Phoenix, Ariz.

**W.G.** **American Federation of Labor**
WILLIAM GREEN. President, American Federation of Labor.

**W.G.P.** **Netherlands Indies**
WIBO G. PEEKEMA. Head of the Legal and Political Division of the Netherlands Ministry for Overseas Territories.

**W.H.He.** **Virgin Islands**
WILLIAM H. HASTIE. Governor of the Virgin Islands of the United States.

**W.H.Se.** **Protestant Episcopal Church**
WALTER H. STOWE. President, Church Historical Society. Historiographer of the Diocese of New Jersey. Author of *The Episcopal Church—A Miniature History.*

**W.J.Bt.** **Furs**
W. J. BRETT. Editor, *Fur Reporter*, New York, N.Y.

**W.J.C.** **Railroads** (*in part*)
WILLIAM J. CUNNINGHAM. Former James J. Hill Professor of Transportation, Graduate School of Business Administration, Harvard University, Boston, Mass.

**W.Ju.** **Shows, Animal** (*in part*)
WILL JUDY. Editor, *Dog World*, Chicago, Ill. Author of *Principles of Dog Breeding;* etc.

**W.L.Be.** **Eye, Diseases of**
WILLIAM L. BENEDICT, M.D. The Mayo Clinic, Rochester, Minn. Professor of Ophthalmology, University of Minnesota Graduate School, Mayo Foundation, Rochester, Minn.

**W.L.T.** **Intoxication, Alcoholic**
W. L. TREADWAY, M.D. Medical Director, U.S. Public Health Service (Retired), Santa Barbara, Calif.

**W.McM.** **Chemurgy**
WHEELER McMILLEN. Editor in Chief, *Farm Journal and Farmer's Wife.*

**W.M.Pn.** **Harvard University**
WILLIAM M. PINKERTON. Director, University News Office, Harvard University, Cambridge, Mass.

**W.Mr.** **Pan American Union**
WILLIAM MANGER. Assistant Director, Pan American Union.

**W.Pr.** **Louisiana**
WALTER PRICHARD. François Xavier Martin Professor of Louisiana History, Louisiana State University, Baton Rouge, La.

**W.P.S.** **Genetics**
WARREN P. SPENCER. Professor of Genetics, College of Wooster, Wooster, Ohio.

**W.S.Ad.** **Telescopes**
WALTER S. ADAMS. Research Associate, Carnegie Institution of Washington, Washington, D.C.

**W.S.G.** **Telephone**
WALTER S. GIFFORD. President, American Telephone and Telegraph Company, New York, N.Y.

**W.V.L.** **Agricultural Research Administration**
W. V. LAMBERT. Research Administrator, Agricultural Research Administration, U.S. Department of Agriculture, Washington, D.C.

**W.V.W.** **Motion Pictures** (*in part*)
WALLACE V. WOLFE. President, Motion Picture Research Council, Inc., Hollywood, Calif.

**W.W.B.** **Indians, American**
WILLARD W. BEATTY. Director of Education, Office of Indian Affairs, U.S. Department of the Interior, Chicago, Ill.

**W.W.Bn.** **Education** (*in part*)
WILLIAM W. BRICKMAN. Department of History and Philosophy of Education, New York University, New York, N.Y. Former Editor *Education Abstracts.*

**W.W.L.** **Japan**
WILLIAM W. LOCKWOOD. Assistant Director, School of Public and International Affairs, Princeton University, Princeton, N.J.

**W.W.M.** **Astronomy**
WILLIAM WILSON MORGAN. Assistant Professor of Astronomy, The University of Chicago, Yerkes Observatory, Williams Bay, Wis.

**W.W.Sh.** **Shipping, Merchant Marine** (*in part*)
W. W. SMITH. Chairman, United States Maritime Commission, Washington, D.C.

**X.**
ANONYMOUS.

# 1948

## 1947

**JANUARY**

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## 1948

**JANUARY**

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**DECEMBER**

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## 1949

**JANUARY**

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**MARCH**

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**APRIL**

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**MAY**

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**JUNE**

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**JULY**

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**AUGUST**

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**SEPTEMBER**

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**OCTOBER**

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**NOVEMBER**

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**DECEMBER**

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THE year 1948 of the Christian Era corresponds to the year of Creation 5708–5709 of the Jewish calendar; to the year 1367–1368 of the Mohammedan hegira; to the 172nd of the United States; and to the 180th year of the *Encyclopædia Britannica*.

### JANUARY 1948

1 New Year's day.
4 Independence day, birth of the Republic of Burma, 1948.
6 Second session of 80th U.S. congress convenes.
6 Epiphany, or Twelfth Night.
8 Jackson day.
13 Festival of St. Veronica.
20 Eve of St. Agnes.
25 Septuagesima Sunday.
26 Foundation day, Australia.
27 Feast of St. Chrysostom.

### FEBRUARY

2 Candlemas. Purification of the Virgin.
2 Ground-Hog day.
8 Quinquagesima (Shrove) Sunday.
10 Shrove Tuesday. Mardi Gras.
11 Ash Wednesday.
12 Georgia day, U.S.A.
12 Lincoln's birthday, 1809.
14 St. Valentine's day.
15 200th anniversary, birth of Jeramy Bentham, English philosopher.
22 Washington's birthday, 1732.
24 Purim (Jewish festival), 1st day.
24 Feast of St. Matthias.
24 100th anniversary, proclamation of the Second French Republic.

### MARCH

1 St. David's day, patron saint of Wales.
2 Texas Independence day.
12 Girl Scout day, U.S.A.
15 Ides of March.
17 St. Patrick's day, patron saint of Ireland.
20 Equinox (4:57 P.M. Greenwich civil time), beginning of spring.
21 Palm Sunday.
25 Annunciation. Quarter day.
25 Maundy Thursday.
26 Good Friday. English bank holiday.
28 Easter Sunday.
29 Easter Monday. English bank holiday.
30 Seward day, Alaska.

### APRIL

1 All Fools' day.
13 Thomas Jefferson's birthday, 1743.
14 Pan-American day.
19 Patriot's day, U.S.A.
19 Primrose day, England.
23 Partial eclipse of the moon, invisible at Washington.
23 St. George's day.
24 Jewish Passover; 1st day.
25 St. Mark's day.
25 Anzac day, Australia and New Zealand.
26 Confederate Memorial day (also May 10, May 30, June 3).

### MAY

1 May day. International labour festival.
2 Rogation Sunday.
5 Cinco de Mayo, Mexican holiday.
6 Ascension day.
7 Third anniversary, German surrender at Reims, France, ending World War II in Europe.
8-9 Annular eclipse of the sun, invisible at Washington.
9 Mother's day, U.S.A.
16 Pentecost (Whitsunday).
17 Whit Monday. English bank holiday.
17 Independence day, Norway.
23 Trinity Sunday.
24 Empire day.
27 Corpus Christi.
30 Memorial (Decoration) day, U.S.A.

### JUNE

5 Constitution day, Denmark.
9 Trooping the colour in honour of King George VI's birthday. His majesty was actually born on Dec. 14.
11 Kamehameha day (Hawaii).
11 Feast of St. Barnabas.
13 Shebuoth (Jewish Pentecost).
14 Flag day, U.S.A.
17 Bunker Hill day, U.S.A.
20 Father's day, U.S.A.
21 Solstice (12:11 P.M. Greenwich civil time), beginning of summer.
24 Midsummer day. Quarter day.
24 St. John's day.
26 Third anniversary of the signing of the United Nations charter.
30 St. Paul's day.

### JULY

1 Dominion day, Canada.
4 Independence day, U.S.A.
4 Second anniversary of the birth of the Republic of the Philippines.
5 Independence day, Venezuela.
7 50th anniversary, U.S. annexation of Hawaii.
9 National Independence day, Argentina.
14 Bastille day.
15 St. Swithin's day.
21 Independence day, Belgium.
22 Feast of St. Mary Magdalene.
24 50th anniversary, birth of Amelia Earhart, U.S. aviatress.
26 St. Anne's day.
28 Independence day, Peru.

### AUGUST

1 Independence day, Switzerland.
1 Lammas day.
2 English bank holiday.
6 Feast of the Transfiguration.
10 Feast of St. Lawrence.
12 50th anniversary, armistice ending the Spanish-American war.
14 Third anniversary, Japanese surrender note to U.S., Great Britain, U.S.S.R. and China, unofficially ending World War II.
14 Tishah Bov (Jewish Fast of Ab).
15 Assumption of the Blessed Virgin Mary.
24 Feast of St. Bartholomew.

### SEPTEMBER

1 9th anniversary, beginning of World War II.
2 Third anniversary, formal surrender of Japan ending World War II.
6 Labor day, U.S.A.
11 Independence day, Brazil.
16 Independence day, Mexico.
17 Constitution day, U.S.A.
23 Equinox (3:22 A.M. Greenwich civil time), beginning of fall.
26 50th anniversary, birth of George Gershwin, U.S. composer.
27 Dominion day, New Zealand.
29 Michaelmas. Quarter day.
30 Feast of St. Jerome.

### OCTOBER

4 Rosh Hashonah (Jewish holiday beginning year 5709).
4 Feast of St. Francis of Assisi.
12 Columbus day.
13 Yom Kipper (Jewish Day of Atonement).
18 Succoth (Jewish Feast of Tabernacles), 1st day.
18 Alaska day, Alaska.
25 St. Crispin and St. Crispinian.
27 Navy day, U.S.A.
28 Independence day, Czechoslovakia
31 Hallowe'en.

### NOVEMBER

1 Total eclipse of the sun, invisible at Washington.
1 All Saint's day. All Hallows.
2 Mohammedan year 1368 begins at sunset.
2 General election day, U.S.A.
5 Guy Fawkes' day.
9 Lord Mayor's show, London.
10 U.S. Marine Corps day.
11 Armistice day.
16 Feast of St. Edmund.
22 St. Cecilia's day.
25 Thanksgiving day.
28 First Sunday in Advent.
30 St. Andrew's day, patron saint of Scotland.

### DECEMBER

5 Constitution day, U.S.S.R.
6 Feast of St. Nicholas.
8 Immaculate Conception.
17 Aviation day, U.S.A.
21 Solstice (10:34 P.M. Greenwich civil time), beginning of winter.
22 Forefathers' day (also Dec. 20, Dec. 21, Dec. 23).
24 Second anniversary of the birth of the Fourth French Republic.
25 Christmas. Quarter day. English bank holiday.
26 Boxing day. English bank holiday.
27 Hanukkah (Jewish Feast of Dedication), 1st day.
28 Childermas. Holy Innocents' day.
30 Rizal day, Republic of the Philippines.
31 Second anniversary of the U.S. proclamation ending hostilities of World War II.

# CALENDAR OF EVENTS, 1947

**For elections and disasters of 1947, see under those headings in the text. For obituaries of prominent persons who died during 1947, see under the entry Obituaries.**

## JANUARY

1 **British government** assumed formal title to all nation's coal fields as measure nationalizing coal mines became law.

2 **Unanimous decision** was taken by senate Republicans to prevent Sen. Theodore G. Bilbo (Dem., Miss.) from taking office, pending full debate on floor of cases against him.

**Rep. Charles A. Halleck** of Indiana was named Republican leader of house of representatives; Rep. Sam Rayburn of Texas was appointed leader of house Democrats.

**Suits seeking $400,000,000** as portal-to-portal retroactive pay adjustments were filed in Detroit federal district court against Ford, Chevrolet and Chrysler motor car companies by United Automobile Workers.

3 **Measure for 20% reduction** in personal income taxes, to become retroactive to Jan. 1, was introduced by Rep. Harold Knutson (Rep., Minn.) in house of representatives.

4 **Bernard Baruch** and other members of U.S. delegation to U.N. Atomic Energy commission resigned because work of formulating program for atomic energy control had been completed; Baruch said he saw "no reason" why U.S. should discontinue making atomic bombs until ratification of treaty.

**Sen. Bilbo** (Dem., Miss.) voluntarily postponed his plans to fight for seat in upper house on grounds that he needed to undergo operation for cancer of jaw.

**"Dangerous and widespread plot"** against Hungarian republic was announced by Hungarian interior ministry, which said conspirators sought to restore Adm. Nicholas Horthy to power.

5 **Warning of possible coal shortage,** Emanuel Shinwell, British minister of fuel and power, said fuel priority would be given to vital public utilities and industries.

**Leon Henderson and Wilson W. Wyatt** were named temporary co-chairmen of organizing committee of Americans for Democratic Action, new liberal organization.

6 **Pres. Truman** renewed vow of co-operation with Republican majority in congress in annual message on state of union; he urged legislators to outlaw "indefensible" jurisdictional strikes and to require "binding" settlement of labour disputes, but warned against "punitive legislation" and "vindictive" labour laws.

**Soviet Union** was asked by U.S. state department to return control of Dairen promptly to China.

**Appointment of Lt. Gen. Lucius D. Clay** as commander of U.S. forces in European theatre, succeeding Gen. Joseph T. McNarney, was announced by war department; Lt. Gen. Geoffrey Keyes was named to succeed Gen. Mark W. Clark as chief of U.S. occupation army in Austria, with Clark scheduled to become commander of U.S. 6th army.

7 **Pres. Truman** nominated Gen. George C. Marshall as secretary of state, succeeding James F. Byrnes, who resigned because of ill health; on leaving Nanking, Marshall ascribed failure of his efforts to bring peace to China to "almost overwhelming suspicion" that Chinese nationalists and communists had of each other; and denounced "dominant group of reactionaries" in Kuomintang and "irreconcilable communists."

9 **Accusations by Andrei Gromyko,** soviet delegate, that U.S. insistence on atomic energy decision was move to delay general disarmament were denied by Herschel Johnson, U.S. delegate, in debate at U.N. Security council.

**Poland** was advised in U.S. note that policy of "suppression, intimidation and coercion" of opposition violated both letter and spirit of Yalta and Potsdam pacts.

**London dispatches** reported U.S.S.R. had asked Norway for permission to establish military bases on Spitsbergen Island.

**Reduction of federal budget** by between $3,000,000,000 and $4,000,000,000 and temporary continuance of corporation and wartime excise tax rates so that personal income taxes could be cut 20% were advocated by Sen. Robert Taft (Rep., O.).

10 **U.N. Security council** voted 10–0 to assume responsibility for guaranteeing integrity and independence of Free Territory of Trieste; Australia abstained from voting.

**Annual budget** submitted to congress by Pres. Truman for fiscal year starting July 1 put expenditures at $37,528,000,000, revenue at $37,730,000,000 and military costs at $11,256,000,000; president also urged revision of postal rates to avoid substantial deficit.

**Isolation of virus** causing poliomyelitis in state said to be 80% pure was announced by Stanford university.

11 **Albanian government** rejected British demands for apology and compensation for lives of seamen lost when two British warships struck mines in Corfu channel, and implied that Greek vessels might have laid the mines.

**Friendship pact** was signed by Turkey and Trans-Jordan.

12 **Six survivors** of Navy plane that crashed in Ellsworth Land, coast of Antarctica, were saved by rescue plane and returned to Byrd expedition vessel; three of wrecked aircraft's crew had been killed in accident.

**Truce** between Jewish underground and British military in Palestine was ended when former blew up Haifa district police station, killing four persons.

14 **Conditional credit** of $100,000,000 was set aside by Export-Import bank for Italy to finance its imports from U.S.

**Auguste Champetier de Ribes,** of Popular Republican movement, was re-elected president of French council of republic.

15 **Prime Minister Clement R. Attlee's office** announced Britain and France agreement to conclude military alliance within framework of U.N. charter "at earliest possible moment."

**Vyacheslav Molotov,** soviet foreign minister, rejecting U.S. contention that Polish government was intimidating political opposition, said he saw no need for "interference in internal affairs of Poland."

16 **Vincent Auriol,** Socialist leader, was elected as 1st president of new 4th French republic, receiving 452 of 883 votes cast.

17 **Leon Blum's refusal** because of ill health to continue in office as premier led Pres. Auriol to select Paul Ramadier, another French Socialist, to form cabinet.

**100% margin requirement** for purchase of securities on stock exchange was reduced to 75% by U.S. federal reserve system.

**Persons burned** by atomic blasts at Hiroshima and Nagasaki suffered hair loss, reduction of white corpuscles and disfiguring scars, according to statement made by Allied Headquarters Public Health Welfare section at Tokyo; last death directly attributable to atomic bombings was said to have occurred in Oct. 1945.

18 **Ellis Arnall** resigned as governor of Georgia in favour of Lt. Gov. M. E. Thompson, who proclaimed himself "acting governor" and requested Herman Talmadge to vacate governor's office and executive mansion at Atlanta.

**Hopes** for Communist-Kuomintang peace in China faded when Yenan Communists rejected Nanking government's proposal for new conferences.

**French forces** opened drive to dislodge Viêt-Nam armies from strong positions about Hué, capital of Annam in Indo-China.

19 **British foreign office** declared it had protested to Premier Stalin against "misleading" *Pravda* article stating that Foreign Minister Bevin had disavowed Anglo-soviet alliance.

**Government bloc candidates** won 383 of 444 seats in election for new Polish parliament which was singularly free of disorders; Peasant party took only 27 seats.

20 **Premier Alcide de Gasperi** resigned as premier of Italian coalition government in crisis caused by split in Socialist party.

21 **Charges** that three high officials of Tennessee Valley authority were "communists," made by Sen. Kenneth D. McKellar (Dem., Tenn.) at senate hearing, were denied by Gordon R. Clapp, nominee for TVA chairmanship.

**Edouard Herriot** was elected president of French National assembly.

22 **Paul Ramadier** formed coalition cabinet composed of majority of French political parties with Georges Bidault as foreign minister and Maurice Thorez as a vice-premier.

**Herbert Hoover** accepted assignment from Pres. Truman to undertake economic mission to central Europe for study of food and other problems.

23 **Andrew J. May,** former Democratic representative from Kentucky, and Henry M.

## JANUARY—*Continued*

Garsson, Murray Garsson and Joseph Freeman, officials of wartime munitions combine, were indicted by federal grand jury in Washington on charges of conspiring to defraud federal government.

**24** **Premier Stalin,** agreeing that Foreign Minister Bevin's statements on British foreign policy did not repudiate Anglo-soviet alliance, said pact needed revision before it could be extended.

**Argentine foreign office** disclosed Pres. Juan D. Perón had issued decree empowering government to purchase assets of business firms once owned by axis nationals.

**Demetrios Maximos,** former banker and royalist, formed new coalition government in Greece.

**25** **Warren R. Austin,** U.S. delegate on U.N. Security council, said U.S. was opposed to any change in Big Five veto power, but asserted nations participating in world atomic plan would be obligated to take punitive action against violators even if council failed to act.

**Agreement** was reached by U.S. Steel Corp. and C.I.O. United Steel Workers on job reclassifications under which steel workers would receive $32,000,000 in back pay and $17,000,000 in wage increases.

**26** **Provision permitting** Netherlands businessmen to deal directly with Germans in merged U.S.-British economic zones was disclosed in Berlin.

**27** **Premier Demetrios Maximos** announced Greek government was prepared to offer general amnesty to all guerrilla bands that capitulated within specified time, in order to halt civil war.

**Mrs. Eleanor Roosevelt,** elected chairman of U.N. Human Rights commission, declared main problem was how to "enforce" international bill of rights which that body would write.

**28** **U.S. state department** charged that Polish government failed to carry out "solemn pledges" to hold free and unfettered elections as required in Yalta and Potsdam agreements.

**Terms of British-Burma agreement** under which Burma would elect constituent assembly and have interim government and ultimately complete independence were submitted to commons by Prime Minister Attlee.

**29** **State department** announced abandonment of U.S. effort to mediate Chinese civil war.

**31** **Evacuation** of British women and children from Palestine was ordered by Lt. Gen. Sir Alan G. Cunningham, British high commissioner, in move to combat Jewish underground.

**Blame** for ordering 10% rent increase without presidential approval was taken by Maj. Gen. Philip B. Fleming, director of Office of Temporary Controls; Fleming's measure was countermanded at last minute by Pres. Truman.

**Hans Fritzsche,** radio spokesman of nazi government, was sentenced to nine years at hard labour by Bavarian denazification court in Nuernberg; Heinrich Hoffman, Hitler's personal photographer, was sentenced to ten years at hard labour.

**Vatican** was accused by Yugoslav government of harbouring and aiding alleged Yugoslav war criminals to escape to South America.

## FEBRUARY

**1** **Labour-management agreement** for voluntary settlement of disputes in building and construction industries was announced by Pres. Truman.

**French Government** memorandum suggested France rule Ruhr basin so that area instead of serving as future arsenal for German aggression would be used to help reconstruct the destroyed communities of Europe.

**2** **Gen. Marshall,** in message to Jewish Labour committee, said U.S. urged and would continue to urge all nations to co-operate for speedy resettlement of European displaced persons.

**Premier Alcide de Gasperi** of Italy formed new coalition cabinet embracing Christian Democrats, Communists and Socialists.

**3** **Congress** was asked by Pres. Truman to extend some of his war powers for another year in order to complete effective reconversion.

**Adm. William H. P. Blandy** was appointed to succeed Adm. Marc Mitscher as commander of U.S. Atlantic fleet.

**4** **Franz von Papen** was arrested in midst of his trial before German denazification court in Nuernberg and charged with having falsified Hindenburg's will.

**5** **Jewish national council** turned down British ultimatum that official Jewry help British military ferret out underground; Irgun Zvai Leumi, aggressive underground group, said it would "fight to last breath" against British authority.

**U.S. and Soviet Union** were deadlocked over U.N. procedure for regulating atomic energy and armament, with U.S. wishing to treat each question separately and U.S.S.R. insisting on treating them as a whole.

**Boleslaw Bierut** was elected president of Poland, receiving 408 of votes in parliament against 24 in opposition; Józef Cyrankiewicz, Socialist leader, was given a mandate to form cabinet.

**6** **Gerhart Eisler,** alleged "brains" of Communist party in U.S., was charged by house committee on un-American activities with conspiracy to overthrow government, contempt of congress, perjury, income tax and passport falsification; committee rejected Eisler's request to make statement in own behalf.

**Robert E. Hannegan** (Democratic national chairman) said Pres. Truman would be called upon to become Democratic nominee for president in 1948; White House said Truman had "no comment" to make on Hannegan speech.

**Appeal for truce** and negotiations on basis of 1946 agreement for Indo-China was made by Viêt-Nam delegates in Paris.

**7** **New law** proclaimed by British military government decreed political amnesty for about two-thirds of 1,500,000 Germans suspected of naziism in British zone.

**8** **Friedrich Flick,** German steel industrialist, and four associates were indicted by U.S. military government for war crimes and crimes against humanity on "vast scale."

**British proposal** for compromise of Arab-Jewish problem in Palestine was rejected by Arab delegates to Palestine parley in London.

**Greek government** was urged by Trygve Lie, secretary general of U.N., to stay scheduled execution of group of convicted guerrillas until Security council had time to study controversy.

**Claims** of Mount Clemens Pottery Co. employees for portal-to-portal pay were dismissed in entirety by Federal Judge Frank A. Picard of Detroit.

**10** **Industry** and public utilities in more than half of industrial Britain were halted as government cut off power in drastic move to conserve dwindling coal stocks.

**State of war** between Allied powers and Italy, Finland, Rumania, Bulgaria and Hungary was formally terminated by signature of peace treaties in Paris; Yugoslavia and Greece joined four of former axis satellites in protesting certain provisions of pacts; only Rumania seemed satisfied with treaty terms; in Italy, populace observed 10 min. of silence in protest against peace treaty.

**12** **U.S. and Canada** reached agreement to continue wartime military co-operation on voluntary basis "for peacetime joint security purposes."

**13** **Pres. Truman** branded as "absolutely unfounded" charges made by Sen. Kenneth McKellar (Dem., Tenn.) that David E. Lilienthal, nominee for chairmanship of U.S. Atomic Energy commission, was either communist or marginal communist.

**Pres. Truman** reiterated oppo-

**The pictures on this page are, left to right:**

| | |
|---|---|
| CLAY | Jan. 6 |
| THOREZ | Jan. 22 |
| ROOSEVELT | Jan. 27 |
| BIERUT | Feb. 5 |
| EISLER | Feb. 6 |

## FEBRUARY—*Continued*

sition against any reduction in proposed budget of $37,500,000,000 for next fiscal year.

**John W. Snyder,** secretary of treasury, announced controversy over Henry J. Morgenthau's use of treasury department material in his 900-vol. "diary" had been settled and latter would return any material needed to complete treasury's files.

**Proposal** to set up new Commission on Conventional Armaments, as distinct from Atomic Energy commission, was adopted 10–0 by U.N. Security council; Soviet Union refrained from voting.

**14 Foreign Secretary Bevin** announced that Britain, having failed to solve Palestine problem, had decided to put issue up before United Nations.

**Soviet delegate Gromyko's proposal** that violators of atomic bans should be punished by Security council was hailed as "memorable statement" by Warren R. Austin, U.S. delegate to U.N.

**Pres. Truman's offer** to divert coal, already en route to Europe, to Britain to help ease shortage, was declined by Prime Minister Attlee.

**15 Undersec'y of State Dean Acheson's statement** that soviet foreign policy was aggressive and expansionist was criticized as "gross slander," by Foreign Minister Molotov in formal protest to U.S.

**Homer L. Loomis, Jr.,** secretary of Columbians, Inc., profascist organization preaching racial hatred, was convicted of incitement to riot by Atlanta jury and was sentenced to serve 12 months at hard labour.

**17 U.S.** started broadcasts designed to beam factual information on U.S. to soviet people.

**The pictures on this page are, left to right:**

| | |
|---|---|
| BEVIN | Feb. 25 |
| BULGANIN | March 3 |
| TRUMAN | March 12 |
| ATTLEE | March 12 |
| HOOVER | March 23 |

**Justice Robert H. Jackson** denounced supreme court for its alleged disregard of customs and contracts of industry when deciding wage-hour cases.

**18 Chinese government** was reported to have asked U.N.R.R.A. for permission to sell $200,000,000 worth of U.N.R.R.A. supplies on "black market."

**Sec'y of State Marshall** rejected soviet complaint that Undersec'y of State Acheson "grossly slandered" Soviet Union, declaring Acheson's "frank" reply was made in "line of duty."

**19 Tennessee** state legislature voted ban on closed shop.

**20 British government** announced intention of withdrawing from India by June 1948; Adm. Viscount Mountbatten was named viceroy of India, succeeding Viscount Wavell.

**Irgun Zvai Leumi,** Jewish underground organization in Palestine, cut oil pipe lines in two places and staged mortar and machine-gun attack against royal air force field near Hadera.

**Soviet Union** slashed budget for armed forces in 1947 by more than 5,600,000,000 rubles and increased funds for scientific research by about 1,500,000,000 rubles.

**21 Congress** was urged by Pres. Truman to appropriate $350,000,000 for relief in liberated areas; the president proposed also that distribution of relief supplies be controlled directly by U.S.

**British government** White Paper stressed necessity for continued frugal existence and harder work to meet plan for increasing 1947 exports to 140% of prewar volume.

**Italy** signed agreement with Argentina under which thousands of Italian workers, artisans and technicians would be permitted to emigrate to Argentina.

**22 Britain's decision** to give India independence by June 1948 was hailed as "wise and courageous" move by Jawaharlal Nehru, Congress party leader.

**23 Allied intelligence agents** arrested several hundred leaders of nazi underground movements in British and U.S. zones of reich.

**Dr. Werner Heisenberg,** German atomic scientist, alleged that Soviet Union was tempting German scientists with large salaries to conduct research for soviet government.

**Contract for construction** of Saudi-Arabian section of 1,000-mi. oil pipe line linking Saudi-Arabian oil fields with Mediterranean was awarded to five U.S. engineering companies.

**24 Lt. Gen. John R. Hodge** told U.S. newsmen in Washington reports that Soviet Union was organizing army of 500,000 Koreans in its zone were seemingly true.

**Franz von Papen** was sentenced to eight years in labour camp after German denazification court in Nuernberg found him guilty of being major nazi offender.

**25 Foreign Sec'y Bevin** implied that partisan politics had impelled Pres. Truman to make his demand in 1946 for admission of 100,000 Jews to Palestine, further asserting this statement wrecked hope of friendly solution of Palestine problem.

**26 Pres. William Green** of A.F. of L. conceded desirability of altering some features of Wagner act, but warned congress that "bitter hatred" of workers would rise against more drastic labour restrictions.

**Lewis W. Douglas** was named by Pres. Truman to become U.S. ambassador to Great Britain.

**Foreign Sec'y Bevin** was rebuked by White House for his "unfortunate and misleading" suggestion that Pres. Truman's statement on Palestine was meant for domestic political purposes.

**40 persons** were injured in riot started when 50,000 Belgian war veterans stormed Brussels to demand bonus payments and other privileges.

**27 Foreign Sec'y Bevin** minimized his clash with Pres. Truman over Palestine issue and emphasized in report to commons that his government enjoyed "most cordial" relations with U.S.

**Herbert Hoover** urged U.S. and Britain each to expend $475,500,000 to save Germany from starvation and chaos, warning that survival of western civilization in Europe depended on its survival in reich.

**28 P-82 U.S. fighter plane** flew 4,978 mi. nonstop from Hickam field, Hawaii, to La Guardia airport, New York City, in 14 hr. 33 min., establishing new nonstop record for fighter craft.

## MARCH

**1 16 persons** were killed in Palestine as Jewish underground attacked British installations; 13 of this number were killed in bombing of British officers' club at Jerusalem.

**Resignation** of T. V. Soong as premier of China was announced by Executive Yuan.

**2 Warsaw dispatches** indicated Polish underground was disintegrating and that thousands of members were taking advantage of government's general amnesty pledge to lay down arms and return to civil pursuits.

**2,400** Buffalo, N.Y., schoolteachers ended week-long strike after Mayor Bernard Dowd offered to provide salary increases for 1947–48 school year ranging from $300 to $625.

**3 Mexico** and other hemispheric republics were assured by Pres. Truman, who visited Pres. Miguel Alemán in Mexico City, that U.S. would adhere to policy of nonintervention in their affairs.

**Winston Churchill** urged British government to speed Palestine problem to U.N. to end "squalid warfare" in Holy Land.

**Premier Stalin** resigned post as minister of armed forces because of pressure of other duties; Gen. Nikolai A. Bulganin was named his successor.

**4 State department** disclosed that Greek government had made appeal to U.S. for prompt assistance.

**France and Britain** signed 50-year treaty of alliance in Dunkirk ceremony; Foreign Sec'y Bevin said pact was designed not to block Soviet Union but to build "perfect pattern for universal peace."

**5 U.N. Security council** heard Andrei Gromyko, soviet dele-

## MARCH—*Continued*

gate, charge U.S. atomic energy control plan was designed to give U.S. monopoly of atomic energy and assert plan's control provisions represented meddling in internal affairs of other countries.

6 **British government's decision** to withdraw from India in June 1948 was approved in commons; Churchill voiced "grief" at "clattering down of British Empire," suggesting government should invoke aid or advice of U.N.

**Contempt conviction** of John L. Lewis and United Mine Workers was upheld by supreme court by 7–2 vote; $10,000 fine against Lewis was sustained but $3,500,000 levy against union was reduced to $700,000.

**State department** announced it had accused Soviet Union of "unjustified interference" in Hungary's internal affairs and had requested probe by Allied Control commission.

7 **John L. Lewis** told senate committee on labour and public welfare that government could do nothing to prevent coal strikes unless it was prepared to adopt totalitarianism.

8 **Jewish underground bands** in Palestine defied British martial law to stage three attacks on army and police centres in Tel Aviv area.

**Sec'y of State Marshall** expressed view that adoption of four-power 40-year alliance against reich should precede signature of peace treaties with Germany.

**International Harvester Co.** announced plan to initiate series of price cuts that would save its customers $20,000,000 annually.

9 **Tribal chieftains** of Western Samoa directly petitioned U.N. Trusteeship council for union of Western and American Samoa and self-government.

**U.A.W. local** voted to end 440-day strike against J. I. Case Co. in Racine, Wis., and to accept wage increases ranging from 25 cents to 26 cents hourly.

10 **Supreme court** ruled by 5–4 vote that foremen were employees under Wagner act and that employers must bargain collectively with unions of foremen or supervisory employees.

**Herbert Hoover** recommended allotment of $155,000,000 for emergency relief for Austria from April 1947 to July 1948.

**Council of Foreign Ministers** at opening session in Moscow approved dissolution of Prussian state.

**Czechoslovakia and Poland** signed 20-year pact of friendship and mutual assistance in common defense against possible renewal of German aggression.

11 **Foreign Minister Molotov's criticism** of Anglo-U.S. conduct of demilitarization in reich was answered by Sec'y of State Marshall with reminder that only Allied unity could keep Germany disarmed.

**Sec'y Gen. Trygve Lie** heatedly denied he was "tyrant" in conference with 2,000 U.N. employees who asked for better working conditions and salaries.

12 **New foreign policy** was outlined by Pres. Truman who asked joint meeting of congress to authorize fund of $400,000,000 to help strengthen Greek and Turkish regimes against "totalitarian" pressure.

**U.N. investigating body** was barred by Yugoslav authorities from entering Yugoslav town of Dragos near Greek frontier.

**Economic policy** of Prime Minister Attlee's government won 371–204 vote of confidence in commons.

**Paraguayan government** asserted rebellious garrison of 600 to 700 soldiers at Concepción had been placed under siege by loyalist forces.

13 **Premier Recep Peker** of Turkey hailed Truman speech on Greek-Turkish aid as one "inspired by point of view both fully realistic and fully humanitarian"; Greek Premier Demetrios Maximos said Truman speech was destined to have "decisive influence" on future of world.

14 **Soviet sources** said 890,532 German prisoners of war were still held in U.S.S.R. and that 1,003,974 others had been repatriated.

**Nanking government** rejected soviet proposal that China participate with Big Three in informal discussion of Chinese civil war.

**Truman proposals** for aid to Greece and Turkey were denounced by *Izvestia* as attempt to usurp sovereignty of those nations.

**British government** granted five-day work week to British miners, who in turn consented to use of displaced persons and Poles to work in coal mines.

**99-year** U.S.—Philippine agreement for U.S. naval and military bases on islands was signed in Manila by Pres. Manuel A. Roxas and Paul V. McNutt, U.S. ambassador.

15 ***Pravda,*** Communist party organ, said Pres. Truman's speech on Greek-Turkish aid rendered "valueless" U.S. declarations of faithfulness to U.N.

**Casualties in Punjab** province resulting from two-week rioting between Moslems, Sikhs and Hindus was put by Punjabi government at 1,036 killed and 1,110 seriously injured.

**Gen. Joseph T. McNarney** handed over command of U.S. forces in European theatre to Lt. Gen. Lucius D. Clay.

16 **Margaret Truman,** daughter of Pres. Truman, made radio debut as singer with Detroit Symphony orchestra in broadcast which was heard by estimated 13,000,000 persons.

**7.6% increase** in crime in 1946 established record peak for 10-year period, J. Edgar Hoover, F.B.I. director, reported.

17 **Prompt initiation** of negotiations for peace treaty with Japan and preparation for troop withdrawal as soon as treaty is signed were advocated by Gen. MacArthur.

**Big Four** at Moscow conference agreed to evacuate troops from Austria within 90 days of peace treaty signature.

**Annulment** of economic merger of U.S. and British zones of reich and share in control of Ruhr were requested by Foreign Minister Molotov during debate in Moscow Council of Foreign Ministers.

18 **Sec'y of State Marshall** rejected soviet figure of $10,000,000,000 as basis of German reparations to Soviet Union at Moscow Big Four parley.

**"State of war"** was decreed by Pres. Higinio Morinigo's government to combat Paraguayan rebels entrenched in northern provinces.

19 **Herman Talmadge's claims** to governorship of Georgia were rejected by state supreme court which declared M. E. Thompson acting governor.

**Pres. John L. Lewis** of U.M.-W., yielding to supreme court order, rescinded his notice for calling soft coal strike April 1.

**Warning** to U.S.S.R. and France that rebuilding of German industry to pay for reparations would endanger peace was issued by Sec'y of State Marshall at Big Four parley in Moscow.

**Chinese Nationalist armies** occupied Yenan, former capital of Chinese Communists.

**Extension of government controls** over exports for year beyond expiration date of June 30 was requested by Pres. Truman to "protect" U.S. economy and to meet international obligations.

**Use of thorium** as well as uranium for commercial purposes save under "exceptional circumstances" was banned by U.S. Atomic Energy commission.

**Premier Paul-Henri Spaak** formed new Belgian government.

20 **U.S. rejection** of Yugoslav requests for grain shipments to stave off famine was announced by U.S. state department.

**Georges Bidault,** French foreign minister, told Big Four conference in Moscow that France would not agree to any solution of German economic problem that failed to guarantee France increased coal shipments from Ruhr.

21 **Iron and steel shipments** into soviet zone of reich were indefinitely suspended by U.S. and British authorities on ground soviets had failed to live up to trade agreement.

22 **Establishment** at early date of German national council to rule reich as provisional government was proposed by Sec'y of State Marshall at Moscow conference of Big Four.

**Program** designed to check "loyalty" of all federal employees in move to oust communists from government service was ordered in executive decree issued by Pres. Truman.

23 **Local 248** of United Automobile Workers (C.I.O.) voted to call off its 329-day strike against Allis-Chalmers Mfg. Co. in Milwaukee and to return to work without contract.

**Establishment** of unified and demilitarized reich that would be permitted to rebuild its industry to restore Europe's economy was recommended by Herbert Hoover in report to Pres. Truman.

24 **U.S. and British delegates** at opening session of U.N. Commission on Conventional Armaments stressed they could accept general disarmament only if foolproof system of international inspection were established.

**William L. Clayton,** undersecretary of state for economic affairs, said that 62½% of proposed $400,000,000 program to help Greece and Turkey would be spent on equipping armed forces of two countries.

25 **Soviet Union** notified state department that it was ready to turn over administration of Dairen to China.

## MARCH—*Continued*

**Soviet veto** blocked majority resolution of U.N. Security council members charging that Albania was indirectly responsible for Corfu channel mines that damaged two British warships.

**Netherlands and Indonesian delegates** at Batavia signed Cheribon agreement which granted *de facto* recognition to Indonesian republic.

**High court of justice in Paris** condemned Camille Chautemps in absentia to five years of hard labour for acts considered harmful to national defense.

**Lateran pact of 1929** was affirmed by Italian constituent assembly by vote of 350 to 149; Italian Communists endorsed treaty.

**26** **U.S. Communist party** was branded as "fifth column" by J. Edgar Hoover, director of F.B.I., who, however, voiced grave doubts as to advisability of outlawing party.

**Soviet delegates** refused to attend inaugural meeting of U.N. Trusteeship council; Francis B. Sayre, U.S. representative, was elected chairman of new body.

**27** **Dr. Karl Gruber,** Austrian foreign minister, stated his country would refuse to sign any peace treaty that ceded southern Carinthia to Yugoslavia.

**British foreign office** disclosed that Yugoslavia had asked Britain for food and raw materials and to support Belgrade's request to U.N.R.R.A. for 200,000 tons of wheat.

**Georgia's white-primary bill** was vetoed by Gov. Thompson who at the same time approved measures banning closed shop.

**28** **U.N. Security council** was formally apprised of Pres. Truman's Greek-Turkish aid proposal by Warren Austin, U.S. delegate, who maintained plan was "most essential" to bolster U.S. foreign policy.

**50,000 Germans** in British zone staged protest parades against food shortages.

**Large-scale investigations** of charges that private oil firms reaped huge profit from U.S. naval oil purchases in middle east were opened by Senate War Investigating committee.

**Adm. Jean de Laborde,** who ordered scuttling of French fleet at Toulon in 1942, was condemned to death for treason by French high court of justice in Versailles.

**29** **John L. Lewis,** U.M.W. president, ordered shutdown of soft coal industry between April 1 and 6 as memorial for Centralia mine disaster in which 111 miners lost lives.

**German food demonstrations** in British zone spread to Ruhr where 4,000 miners refused to work and joined paraders in Dortmund.

**30** **New rioting** between Hindus and Moslems in Bombay resulted in 40 deaths and 137 wounded.

**31** **Sec'y of State Marshall** rejected soviet demands for reparations from current reich production and scored French insistence on German coal as advance condition for agreement on German treaty.

**Selective Service act** expired at midnight.

**Formation of Spanish regency council** that would take charge of government in event chief of state died or was incapacitated was announced by Gen. Francisco Franco.

**Outbreak of wide revolt** among natives in Madagascar against French rule was reported in dispatches reaching Paris.

**Laws** extending sugar rationing and price controls until Oct. 31 were passed by congress and signed by Pres. Truman.

## APRIL

**1** **Crown Prince Paul** was sworn in as King Paul I of Greece after death of brother, King George II.

**Martin H. Kennelly** (Dem.) was elected mayor of Chicago by substantial majority over Russell W. Root, Republican candidate.

**2** **Proposal** to give U.S. sole trusteeship over former mandated Japanese islands in Pacific was unanimously approved by U.N. Security council.

**Soviet suggestion** that communist-dominated "front" groups get voice in provisional government of reich was rejected by Sec'y of State Marshall and Foreign Sec'y Bevin during Big Four parley in Moscow.

**Unabated Hindu-Moslem strife** paralyzed business and social life in Calcutta.

**3** **Sec'y of Interior Julius A. Krug** closed indefinitely 518 mines for safety reasons.

**4** **Demand** that Austria pay $150,000,000 in reparations to Yugoslavia out of current production and permit removal of industrial plants was made at Moscow Council of Foreign Ministers by Edward Kardelj, Yugoslav vice-premier.

**5** **Five U.S. marines** were killed and 16 others wounded in battle with Chinese "dissident" force that attempted to raid marine munitions dump at Tangku.

**Japanese Communist party** polled only 1% of total votes cast during Japan's nation-wide mayoralty elections.

**7** **About half** of estimated 615,000 workers employed by American Telephone and Telegraph Co. went out on strike in all except 9 of 48 states.

**Opposition** to U.S. aid to Greece was voiced by Andrei Gromyko, soviet delegate, who told U.N. Security council measure would gravely undermine U.N. authority; Gromyko added he was opposed to giving any aid to Turkey.

**U.S., Britain and France** rejected soviet proposal that issue whether reich was to have decentralized or federal government be decided by German plebiscite.

**8** **Foreign Minister Molotov** was notified by Sec'y of State Marshall that U.S. was preparing to institute, unilaterally, measures leading toward ultimate independence of U.S. zone of Korea.

**Andrei Gromyko,** soviet delegate, agreed to principle of mine-to-plant atomic inspection, but rejected theory of aerial surveys in U.N. Atomic Energy commission debate.

**9** **David E. Lilienthal** was confirmed in senate as chairman of U.S. Atomic Energy commission by 50–31 vote.

**U.N. Security council** voted to refer British-Albanian dispute on Corfu channel mine incident to International Court of Justice, the U.S.S.R. and Poland abstaining.

**Suggestion** that Poland's western frontiers would require revision to meet needs of both Poland and reich was made by Sec'y of State Marshall at Moscow Council of Foreign Ministers.

**Prime Minister Stalin** told Harold Stassen in Kremlin conference that differences in economic systems were no bar to U.S.-soviet co-operation, adding Russia desired co-operation with U.S. to achieve world peace; he also predicted ultimate agreement on international atomic controls.

**Leo Durocher,** manager of Brooklyn National League baseball club, was suspended for 1947 season by A. B. Chandler, baseball commissioner.

**10** **French plan** to integrate Saar economically and financially into France was approved by Sec'y of State Marshall; he, however, rejected proposal to internationalize Ruhr.

**Amendment** to Greek-Turkish aid bill permitting U.N. to modify or halt program at any time was approved without opposition in senate; U.N. Security council was told by Warren R. Austin, U.S. delegate, amendment was proof of "firm determination" of U.S. people to uphold U.N.

**11** **Henry A. Wallace,** in London speech, warned Pres. Truman's "two-world" program would lead to communist revolution rather than halt communism; Sen. James O. Eastland (Dem., Miss.) accused Wallace of violating his rights as U.S. citizen by his statements and speeches abroad.

**12** **Agreement** that German land reform should be completed by end of 1947 and that major German war plants be destroyed by June 30, 1948, was reached by Big Four foreign ministers at Moscow.

**Second death from smallpox** in New York city led Mayor William O'Dwyer to issue urgent appeal to all residents to become vaccinated within three weeks.

**John L. Lewis** ordered district leaders of United Mine Workers to terminate two-week strike called in protest against unsafe mines.

**13** **Henry A. Wallace,** in Liverpool speech, branded as hysterical congressional criticism of his statements made in Britain; Sen. Claude Pepper (Dem., Fla.) rejected Wallace's suggestion that he (Pepper) might head third party, declaring he would remain in Democratic party as long as it was "truly liberal."

**"Big business"** was accused by Pres. Philip Murray of C.I.O. of seeking to foment strikes by withholding wage increases necessary to offset 20% increase in living costs.

**14** **Soviet agreement** to negotiate lend-lease indebtedness to U.S. was announced by U.S. state department.

**Adm. Richard E. Byrd,** on return from Antarctica, denied he requested U.S. to stake out polar territorial claims and said he did not consider Antarctica strategically important.

**15** **Congress** was asked by Pres. Truman to revise neutrality act; he stressed that obligation of U.S. under law to "treat aggressor and aggrieved" alike was no longer consistent with U.S. commitments and requirements.

## APRIL—*Continued*

**Surplus** of £248,000,000 in British budget for 1947–48 fiscal year was announced by Hugh Dalton, chancellor of exchequer; duties on tobacco were being raised 50%.

**Former army bomber** carrying Milton J. Reynolds, William P. Odom and T. Carroll Sallee landed at La Guardia field, New York, completing round-the-world flight in record time (unofficial) of 78 hr. 56 min.

**Mgr. Joseph Tiso,** Slovak leader who collaborated with nazis in World War II as head of Slovak republic, was convicted of treason in Prague court and sentenced to hang.

17 **Hartley omnibus labour bill** was passed in house of representatives by 308–107 vote.

**Appointment** of earl of Listowel as secretary of state for India and Burma, replacing Lord Pethick-Lawrence, who resigned, was announced by British government; Arthur Greenwood was named minister without portfolio.

18 **Sec'y of State Marshall** told Council of Foreign Ministers at Moscow that soviet proposal for Austrian treaty was inacceptable to U.S. because it would make Austria puppet state.

**U.N. Security council** rejected by 4–2 vote soviet proposal that council send commission to Greece to supervise U.S. aid program.

**German naval base** at Helgoland was destroyed by 3,500 tons of high explosives set off on island by British naval authorities.

**Controlling share** of voting stock of Ford Motor Co. was bequeathed by Henry Ford to four grandchildren; bulk of his personal fortune was left to Ford foundation.

19 **Council of Foreign Ministers** in Moscow was asked by Foreign Minister Molotov to grant Yugoslav demand for portion of Austrian Carinthia.

**Prediction** federal government would end current fiscal year with $1,250,000,000 surplus was made by Pres. Truman.

20 **Agreement** that Austria's responsibility in World War II should be recognized in peace treaty was reached by Council of Foreign Ministers in Moscow.

**Crown Prince Frederik** succeeded to throne of Denmark as King Frederik IX upon death of his father, Christian X.

**Two-year contract** on basis of 15-cent hourly pay increase for about 142,000 production employees of U.S. Steel Corp. and five subsidiaries was signed by United Steel Workers of America (C.I.O.) and management.

21 **Princess Elizabeth,** heiress presumptive to British throne, marked 21st birthday while visiting Capetown and in empire-wide broadcast dedicated life to cause of British empire.

**C.I.O. and A.F. of L. members** joined one-day labour holiday in Iowa to protest passage of state measure banning closed shop.

22 **Pres. Truman's measure** to lend $400,000,000 to Greece and Turkey to aid their fight against totalitarianism was passed by 67–23 vote in senate.

**Extension** by U.S. of "nonpolitical" loan to Soviet Union for reconstruction of that country's devastated areas was proposed by Henry A. Wallace in Paris speech.

23 **William L. Clayton,** undersecretary of state for economic affairs, was named by Pres. Truman to represent U.S. on Economic Commission for Europe established by United Nations Economic and Social council.

**One-party rule** of government in China was ended as Executive Yuan (cabinet) was broadened to include three political parties and independent members.

**New autonomous government** of Inner Mongolia was set up at Wangyehmiao in western Manchuria, according to Nanking dispatches.

24 **General Motors** and United Automobile Workers (C.I.O.) settled wage dispute as company granted 11½-cent hourly wage increase to workers.

**Council of Foreign Ministers** concluded Moscow sessions after reaching agreement to cut size of occupation forces in reich by Sept. 1.

**Six gestapo members** responsible for Lidice massacre were hanged in Prague.

25 **C.I.O. unions** reached agreements for wage increases approximating 15 cents hourly with General Electric, Chrysler Corp. and Jones & Laughlin Steel Corp.

**Socialist party,** with 143 seats, emerged as victor in Japan's second general election after end of World War II; Democrats won 124 seats, Liberals 131 and 68 seats went to other parties.

27 **Gen. MacArthur** hailed results of Japanese general elections as convincing repudiation of communism.

28 **Sec'y of State Marshall** said in nation-wide broadcast that "some progress, however painfully slow" was made at Moscow Council of Foreign Ministers.

**Siam** was formally admitted to United Nations as 55th member.

29 **Abolition** of "untouchability" in any form was adopted by India's constituent assembly.

**U.S. recognized independence** and established diplomatic relations with Himalayan kingdom of Nepal, state department announced.

30 **Arab proposal** to place issue of Palestinian independence on agenda of U.N. general assembly's special session was rejected by 8–1 vote by assembly's general committee.

**Bill nationalizing all inland transport** in Great Britain by Jan. 1, 1948, was approved by house of commons.

## MAY

1 **U.N. general assembly** rejected Arab proposal to discuss termination of British mandate and independence of Palestine.

2 **Congress** was asked by navy department to appropriate $55,580,000 to convert 15 ships to new types of warfare with emphasis on submarine and arctic operations.

3 **First report** of U.N. Military Staff committee disclosed delegates had reached no agreement on major principles for organizing world police force.

**24 top officials** of I. G. Farbenindustrie in reich were indicted by U.S. on charges of fomenting and waging war, committing mass murder and plundering and spoliating foreign countries.

**New Japanese constitution** went into effect as Gen. MacArthur permitted Japanese to display Rising Sun banner for first time since end of World War II.

4 **120 Jewish** and 131 Arab prisoners were freed by Jewish terrorists who blasted holes into walls of Acre's central prison in Palestine.

**Premier Paul Ramadier** ousted French Communists from his cabinet after Communist members of parliament voted against his wage-freezing policy.

6 **House of representatives** heard Sec'y of State Marshall declare that his experiences at Moscow foreign ministers parley made passage of bill to aid Greece and Turkey all the more imperative.

7 **Brazilian Communist party** was outlawed by 3–2 vote of nation's supreme electoral tribunal.

8 **Legislation** that would give "some measure" of responsibility and authority to Negroes in South Africa was promised by Prime Minister Jan C. Smuts.

9 **World bank** in first loan made under its charter lent $250,000,000 to France for reconstruction purposes.

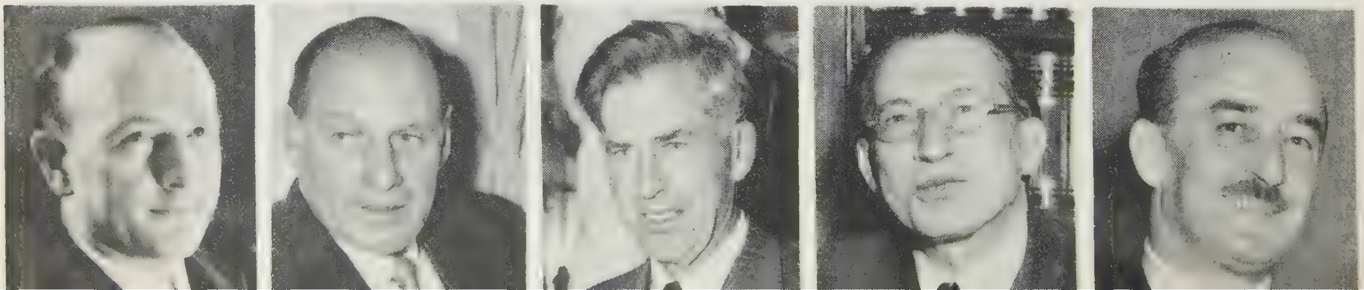
**Estimated 120,000 workers** in Hamburg, Germany, staged mass demonstration against "starvation diet."

10 **U.S. proposal** to consult more Korean political groups with view toward forming that country's provisional government was accepted by Vyacheslav Molotov, soviet foreign minister.

12 **German generals,** including Field Marshals Siegmund Wil-

**The pictures on this page are, left to right:**

| | |
|---|---|
| LILIENTHAL | April 9 |
| DUROCHER | April 9 |
| WALLACE | April 11 |
| DE GASPERI | May 13 |
| NAGY | May 31 |



## MAY—*Continued*

helm List and Maximilian von Weichs, were indicted at Nuernberg on charges of having committed war crimes in Norway, Greece, Yugoslavia and Albania.

12 **Freight classification rates** favouring southern and western states were upheld by supreme court in 7–2 ruling.

**Decision** to exclude all reference to independence of Palestine in proposed U.N. inquiry was voted 29–14 by Political and Security committee of U.N. general assembly.

13 **Financial difficulties** confronting Italian government resulted in resignation of Premier Alcide de Gasperi and his cabinet.

**Proposal to drop Spain** as member of International Civil Aviation organization was approved by 27–3 vote at I.C.A.O.'s assembly session in Montreal.

14 **Measure outlawing portal pay suits** in interest of nation's "economic stability" was signed by Pres. Truman.

**War department** announced emergency plans to speed more than 1,200,000 tons of food to U.S. and British zones of reich.

**Bill authorizing** U.S. government to spend up to $350,000,000 for relief in liberated countries was passed by 79–4 vote in senate.

15 **U.N. general assembly** formally established 11-nation committee of inquiry into Palestine question by 46–7 vote and urged Palestinians to refrain from violence pending decision by regular assembly session in autumn of 1947.

16 **Agreement** to start negotiations for settling Yugoslavia's $32,000,000 lend-lease debt to U.S. was announced jointly by state department and Yugoslav embassy in Washington.

**The pictures on this page are, left to right:**

| | |
|---|---|
| **MARSHALL** | **June 5** |
| **TAFT** | **June 6** |
| **PERÓN** | **June 8** |
| **GROMYKO** | **June 11** |
| **EISENHOWER** | **June 24** |

17 **Public disclosure** that U.S. army and navy were experimenting with deadly radioactive cloud which could be discharged from nonexplosive shells dropped by planes was made by Glenn L. Martin before senate subcommittee.

18 **Irgun Zvai Leumi,** Palestinian underground force, said it would agree to truce during U.N. on-the-spot inquiry provided British forces also stopped fighting.

**Warning** that U.S. would be especially vulnerable to biological warfare was contained in 40,000-word technical summary of dangers of bacterial warfare issued simultaneously in New York and Chicago by American Association of Scientific Workers.

19 **U.S.** was advised by Andrei Gromyko, soviet representative on U.N., that continuance of its atomic energy monopoly was "illusory."

**U.S. supreme court** ruled in 6–3 verdict that news stories criticizing a trial judge do not constitute contempt, thus setting aside conviction of three Texas newspapermen on these grounds.

20 **Additional appropriations** similar to $400,000,000 fund sought for Greece and Turkey and $350,000,000 foreign relief fund were temporarily ruled out by Sec'y of State Marshall.

**Proposal** to establish a national science foundation that would overcome nation's shortages in scientific skills was approved in senate by 79–8 vote.

21 **All 28 defendants** accused of lynching Negro were acquitted by jury of 12 white men in trial held in Greenville, S.C.; Judge J. Robert Martin, Jr., expressed displeasure with verdict by refusing to thank jurors for their services.

**60 railroads** in eastern district of U.S. were granted fare increases by Interstate Commerce commission.

22 **Greek-Turkish aid bill** was signed by Pres. Truman who hailed it as "vigorous effort to help create conditions" of world peace.

**Soviet resolution** to curb activities of U.N. subcommission watching for incidents at Greek frontiers was rejected in Security council by 6–2 vote.

23 **Congress** was urged by Pres. Truman to extend limited portion of his war powers until July 1948, to control domestic use and export of few critical materials necessary to national interest.

24 **Premier Ramadier** issued decree under which personnel of French public utilities would be kept on job under military rule in event of strike.

26 **Herbert Hoover** urged immediate negotiation of peace treaty with Japan as well as conclusion of Anglo-U.S. peace settlement with their respective occupation zones in reich.

**Coup d'état** staged by former president Gen. Anastasio Somoza unseated duly elected Nicaraguan government headed by Pres. Leonardo Arguello.

27 **22 nazi guards** and foremen of Mauthausen concentration camp who were found guilty by U.S. military court of wholesale slaughter of prisoners were hanged in Landsberg prison.

**Benjamín Lacayo Sacasa** was designated provisional president of Nicaragua pending new elections; Pres. Arguello was declared by congress "incapacitated" to hold office for failure to preserve public order.

28 **Left-wing Socialists and Communists** were left out of new Italian cabinet formed by Premier Alcide de Gasperi.

29 **House appropriations committee** was told by Gen. Carl A. Spaatz, air force commander, that army expects its main defenses to be on "Arctic frontier" in event of another war.

30 **Madrid dispatches** reported Spanish government would not put obstacles in way of Spanish businessmen wishing to trade with Soviet Union.

31 **Ferenc Nagy** was ousted as premier of Hungary while vacationing in Switzerland and was replaced by Lajos Dinnyes, prosoviet member of Small Landholders party.

**Abd el Krim** jumped ship at Port Said, Egypt, allegedly upon personal invitation of King Farouk who asked Rif leader to stay in Egypt under his protection.

## JUNE

1 **Compulsory military training** for all U.S. males reaching age of 18 was recommended by Pres. Truman's advisory commission on military training, which said such training was indispensable to nation's security in atomic age; commission also warned 12 largest U.S. cities could be destroyed in single day's attack.

**Katayama Tetsu,** Japan's new prime minister, expressed hope that Japanese democracy would be "permeated by spirit of Christian love and humanism."

2 **State department** suspended $15,000,000 credit to Hungary.

**Emil Sandstroem,** Swedish jurist, was elected chairman of U.N. Committee of Inquiry on Palestine.

3 **British proposal** for partitioning India into separate Hindu and Moslem states, with both states operating at least temporarily within British commonwealth, was announced jointly in New Delhi and London.

**Sen. Arthur H. Vandenberg** (Rep., Mich.) denounced "apparent treacherous conquest" of Hungary by communists and told senate it might become necessary for U.S. to bring Hungary's case to "trial" before U.N.

4 **Resignation of Spruille Braden** as assistant secretary of state for American republic affairs as of July 1 was announced by Pres. Truman.

5 **Sec'y of State Marshall** in Harvard university speech suggested U.S. would help Europe solve its economic ills provided European countries themselves adopted joint program (this so-called "Marshall plan" was later known as the European Recovery program).

**Senate** approved Italian peace treaty by 79–10 vote and accepted Hungarian, Rumanian and Bulgarian peace treaties without recorded vote.

**Pres. Truman** announced appointment of Dwight P. Griswold and Richard F. Allen as heads of Greek aid program and field administrator of foreign relief fund.

**Pres. Truman** declared Argen-

### JUNE—*Continued*

tine-U.S. estrangement was ended as state department announced resignation of George Messersmith as ambassador at Buenos Aires; president gave Messersmith credit for establishing good relations between governments.

**6** **Taft-Hartley labour bill** was voted 54–17 in senate.

**7** **"Law of succession,"** restoring status of traditional monarchy in Spain and making Dictator Franco chief of state for life, was unanimously approved by Spanish cortes.

**8** **Señora Eva Duarte Perón,** wife of Pres. Juan D. Perón of Argentina, was given 21-gun salute on arrival in Madrid.

**9** **Norman Armour** was nominated assistant secretary of state by Pres. Truman to fill vacancy caused by resignation of Spruille Braden.

**10** **Pres. Truman** paid state visit to Ottawa, becoming first U.S. president ever to make state visit to Canada.

**11** **Rationing of sugar,** except for industrial uses, was lifted by Sec'y of Agriculture Clinton P. Anderson as of June 12.

**Andrei Gromyko,** soviet delegate to U.N., accepted international inspection of atomic energy but insisted atomic bomb should be outlawed before international agreement is reached.

**State department** disclosed U.S. sent note to soviet authorities in Budapest charging that Russians had taken unilateral action "in most flagrant interference in Hungarian affairs."

**12** **Mrs. Mildred (Babe) Didrikson Zaharias** defeated Jacqueline Gordon of London, at Gullane, Scotland, becoming first U.S.-born woman ever to win Women's British Amateur golf championship.

**13** **Foreign Sec'y Ernest Bevin** hailed Sec'y of State Marshall's address at Harvard university as great speech, declaring Britain would take initiative in preparing joint European economic program.

**14** **Pres. Truman** lauded Italy, but sharply reproved Hungary, Bulgaria and Rumania for their oppressive measures, as he signed peace treaties with all four states.

**15** **British plan** for partitioning India into Hindu and Moslem states was accepted by All-India committee of Congress party, which however rejected independence for princely states.

**16** **Tax bill** calling for cuts in personal income taxes ranging from 10.5% to 30% was vetoed by Pres. Truman on grounds it would probably induce "very recession we seek to avoid."

**17** **Pres. Truman's veto** of tax reduction bill was sustained in house of representatives as opponents failed by two votes to obtain necessary two-thirds majority to override it.

**Frank Hague,** Democratic political boss, resigned as mayor of Jersey City, N.J., and was succeeded by his nephew, Frank Hague Eggers.

**18** **Warning** that rejection of soviet efforts to place atomic questions on agenda of U.N. Commission for Conventional Armaments would mean "collapse" of disarmament efforts was sounded by Andrei Gromyko, soviet delegate to U.N.

**Denial** that he had influenced changes in Hungarian regime was issued by Lt. Gen. V. P. Sviridov, soviet chairman of Allied Control commission in Hungary.

**19** **Foreign Secretary Ernest Bevin** told commons that British "appeasement" of Russia had ended and that Britain was determined to work for European reconstruction with or without U.S.S.R.

**World speed record** of 623.8 mi. per hour was established by Col. Albert Boyd flying a P-80R, U.S. army jet-propelled aeroplane.

**20** **After Pres. Truman** vetoed Taft-Hartley labour bill as "menace to successful democratic society," house of representatives overrode his veto by 331–83 vote.

**21** **Italian constituent assembly** gave Premier de Gasperi's government confidence vote by narrow margin of 274–231.

**23** **Taft-Hartley labour bill** became law as senate overrode Pres. Truman's veto by 68–25 vote.

**Department of justice's antitrust division** filed suit in N.Y. federal court against A.S.C.A.P. (American Society of Composers, Authors and Publishers) charging A.S.C.A.P. with engaging illegally in world-wide cartel and conspiring to monopolize music-performing rights.

**Soviet agreement** to attend conference of Big Three foreign ministers with Britain and France to discuss Marshall plan was announced by Moscow radio.

**24** **Gen. Eisenhower's appointment** as president of Columbia university, succeeding Dr. Nicholas Murray Butler, was officially announced in New York city.

**Standard Oil Co. of Indiana** rationed its gasoline stocks to retailers in 12 midwestern states because demand was running 15% ahead of supply.

**Nearly 200,000 U.S. soft-coal miners** staged walkout in apparent protest against passage of Taft-Hartley labour bill.

**25** **U.S. note to Rumania** charged that arrest of opposition members was deliberate effort to suppress democratic elements by "terroristic intimidation."

**26** **Wool price-support bill** was vetoed by Pres. Truman as measure whose tariff prohibitions would undermine "our leadership in world affairs."

**27** **U.N. Security council** was urged by Warren R. Austin, U.S. delegate, to permit use of force to prevent Yugoslavia, Albania and Bulgaria from aiding armed bands that might violate Greek territory.

**Gerhart Eisler,** alleged Communist "brain" in U.S., was sentenced to one year in jail and fined $1,000 by federal court in Washington.

**28** **Congress** was told by Gen. Eisenhower that U.S. army was "poor second" to soviet armed forces.

**29** **Warning** that "death of our society" would result unless "imperative problem" of international control of atomic energy was solved was issued at Princeton, N.J., by Emergency Committee of Atomic Scientists.

**30** **Announcement** that French government broke up plot instigated by monarchists and Vichyites to overthrow republic and set up fascist dictatorship was made by Interior Minister Edouard Depreux.

**Bill** that would make Hawaii 49th state of union was adopted by house of representatives by 196–133 vote.

**Measure extending rent control** in adulterated form was reluctantly signed by Pres. Truman, who labelled it as "most unsatisfactory law," but added rentals would be much worse without it.

**U.N.R.R.A.** was officially ended as of midnight.

### JULY

**1** **Sec'y of State Marshall** branded as "malicious distortion," charges that U.S. employed its foreign aid program to secure political and economic domination in Europe.

**2** **Threat of soft-coal strike** vanished with John L. Lewis' disclosure that 40% of coal industry agreed to give miners improved contract and wage boosts totalling more than $3 daily per worker.

**Anglo-French-Russian aid conference** in Paris broke up after soviet Foreign Minister Molotov rejected Marshall plan and warned France and Britain not to act alone on European reconstruction lest they split continent into eastern and western blocs; Bevin declared Britain had faced threats before and would not be deterred from doing "what we consider our duty."

**3** **Ernest Bevin** and Georges Bidault, British and French foreign ministers respectively, summoned 22 European states to convene in Paris July 12 to discuss French proposal on Marshall plan for aiding Europe.

**United Nations** was advised in blunt language by Sir Alexander Cadogan, British delegate to Security council, to "tear up the Charter and pack up" if it could not take action to settle Balkan border warfare.

**Former Rep. Andrew J. May** was convicted by federal grand jury in Washington of taking bribes from Henry and Murray Garsson in return for using his congressional influence to secure favours for Garsson munitions enterprises; Garsson brothers were found guilty of conspiring to defraud U.S. government of May's services through bribery.

**4** **Pres. Truman** inferentially rebuked Soviet Union for allegedly obstructing world reconstruction in Fourth of July address at Charlottesville, Va.; Foreign Sec'y Ernest Bevin told Independence day gathering in London that nothing would ever divide U.S. and Britain and warned U.S.S.R. against carrying "provocation too far."

**Premier Paul Ramadier** won 331-247 vote of confidence from French assembly on his anti-inflation program; he said during debate that France accepted Marshall plan without qualifications.

**5** **Pres. Truman** disclosed that U.S. shipped abroad 18,433,000 long tons of grains and other foodstuffs during year ending June 30, but urged no relaxation in food-export program because millions of "still desperately hungry" persons needed U.S. food products.

**Epidemic** of "flying discs" or saucers allegedly seen through-

**JULY—*Continued***

out U.S. were dismissed by military and civilian experts as possible prank of nature magnified by "popular imagination."

6 **Pledge** that Argentina's resources would be made available for "material and economic rehabilitation of all suffering nations" was made by Pres. Juan D. Perón; he also urged eradication of all forms of totalitarianism, whether of right or left.

**Spanish national radio** said 80% of electorate turned out to vote in referendum to approve Dictator Franco's law of succession; impartial reports said many Basques in Bilbao area remained away from polls.

**U.N. inquiry committee** holding sessions in Jerusalem was told by Jewish agency spokesmen that Britain deliberately obstructed expansion of Jewish industry and was engaged in large-scale "exploitation" of Jewish Palestine.

7 **Congress** was called upon again by Pres. Truman to admit into the U.S. a "substantial number" of displaced persons from eastern Europe who had refused repatriation to communist-controlled countries.

**House of representatives** ignored treasury warning of inflation and passed by 386-0 vote bill permitting veterans to cash total of $1,792,000,000 in terminal leave bonds.

8 **Resolution** that U.N. Security council recommend withdrawal of foreign troops and military personnel from Greece was introduced by Andrei Gromyko, soviet delegate.

**Eugene Dennis,** secretary of U.S. Communist party, was sentenced to year in jail and fined $1,000 for contempt of court; Dennis rejected judge's offer to appear before congress and purge self of contempt charge.

9 **Soviet Union** was urged by Norman Armour, assistant secretary of state, to reconsider stand on Marshall plan and attend Paris conference.

**Estimated 2,800 persons** in Athens and Peiraeeus areas were arrested by order of Greek government to foil alleged communist revolution.

10 **Betrothal** of Princess Elizabeth to Lt. Philip Mountbatten, former Prince Philip of Greece, was formally announced by King George VI, although the fact was known on the 9th.

**Czechoslovakia** reversed decision to attend Paris parley on Marshall plan presumably because of pressure put on Premier Klement Gottwald by soviet leaders.

11 **Announcement** was made by Dwight P. Griswold, U.S. administrator of Greek aid, that $35,000,000 worth of U.S. military supplies were being prepared for shipment to Greece to aid latter's armies in their fight against "bandits."

**Pres. Truman** disclosed that Gen. Albert Coady Wedemeyer would be dispatched to far east to appraise "over-all situation" in China and Korea.

12 **Representatives** of 16 nations opened conference in Paris to work out program for economic rehabilitation of Europe under Marshall plan, leaving door open to other European countries not represented.

**Federal court** in Charleston, S.C., ruled that Negroes were entitled to vote in state's democratic primary elections, hitherto reserved exclusively for whites.

14 **Sec'y of State Marshall** told annual conference of governors in Salt Lake City, Utah, that western European countries would drift into soviet economic orbit unless they received U.S. aid.

**Second bill** to cut personal income taxes was passed in senate by 60-32 vote.

15 Drive by 2,500 Greek guerrillas against Yanina was halted by Greek government troops according to statement by Athens cabinet minister.

**Gen. Lucius D. Clay,** commander of U.S. zone of Germany, received new directives from joint chiefs of staff to take measures to stabilize political and economic conditions, thus enabling reich to make maximum contribution to European recovery.

16 **U.S. proposal** to call 11-nation conference as soon as possible to discuss drafting of Japanese peace treaty was submitted to Allied Far Eastern commission.

17 **Robert N. Denham** was named by Pres. Truman as general counsel to reorganized five-man National Labor Relations board.

**More than 800 federal employees** were ousted from jobs on disloyalty charges following secret investigations, civil service commission disclosed.

18 **Robert P. Patterson** resigned as secretary of war and Kenneth C. Royall was appointed his successor by Pres. Truman.

**French protest** against any scheme that would expand Germany's industrial potential was communicated to U.S. state department by Henri Bonnet, French ambassador.

**Bill** under which speaker of house would succeed president when there is no vice-president was signed by Pres. Truman; under new measure, Joseph W. Martin, Jr. (Rep., Mass.), would succeed Truman should latter fail to complete his term.

**Pres. Truman's veto** of tax reduction bill was overriden by 299-108 vote in house of representatives, but was sustained in senate where vote of 57 to 36 to override was 5 short of required two-thirds majority.

**Legislation** terminating British rule over India was completed when royal commission signified assent to British independence bill.

19 **Bill** authorizing cash redemption of terminal leave bonds issued to veterans was passed unanimously in senate by 85-0 vote.

20 **Netherlands troops** opened military operations against Indonesian Republican forces in Java in what was described as "police action" by Hubertus J. van Mook, acting governor-general.

**Former premier U Saw** and 19 of his aides were arrested while 3 others were killed by Burmese police in raid connected with machine-gun massacre of 7 Burmese council ministers.

21 **Anti-poll tax bill** was adopted in house of representatives by 290-112 vote.

22 **Pres. Truman's plan** to co-ordinate major federal housing agencies into single unit was approved in senate.

**House un-American activities commission** was told by Victor A. Kravchenko that Soviet Union was infesting U.S. with spies and pursuing policy that would make war "inevitable."

23 **Herschel V. Johnson,** deputy U.S. delegate, told U.N. Security council that Albania, Bulgaria and Yugoslavia menaced world peace and that entire globe would suffer if war broke out in Balkans.

**Moscow radio** disclosed Soviet Union rejected U.S. proposal to call preliminary 11-nation conference in Washington to discuss Japanese peace treaty; Russians protested that U.S. acted unilaterally in calling parley without having consulted U.S.S.R., Britain or China.

24 **Batavia** dispatches indicated Netherlands troops had won control of Java's strategic areas, but that Indonesians were preparing to conduct guerrilla warfare.

**Measure** designed to fix social security payroll tax at its prevailing levels until Jan. 1, 1950, was approved by congress and sent to Pres. Truman for signature.

25 **Strong Democratic opposition** thwarted effort of senate Republicans to force probe of Att'y Gen. Clark's handling of fraud charges in Kansas City elections of 1946.

**Large collection of documents** in files of Abraham Lincoln which had been ordered sealed by Robert T. Lincoln, son of civil war president, for 21 years after his own death, were formally opened to public in Washington.

**Andrew J. May,** former representative, and Henry and Murray Garsson were sentenced from eight months to two years in federal prison after conviction on war bribe charges.

26 **Legislation** unifying U.S. armed forces was signed by Pres. Truman, who appointed Sec'y of Navy James Forrestal as secretary of defense.

**Bill** permitting veterans to cash terminal leave bonds was signed by Pres. Truman who advised, however, they keep bonds if need for funds was not imperative.

27 **Pres. Chiang Kai-shek** complained that dispatches of certain U.S. writers and correspondents on Chinese government corruption and inefficiency endangered Sino-U.S. relations.

**Saudi-Arabian plans** to expend $270,000,000 on internal projects were disclosed by Fuad Bey Hamza, minister of development; funds for development were expected to accrue from royalties paid King Ibn Sa'ud by U.S. oil companies.

29 **Senate subcommittee** investigating government contract given to Howard Hughes for construction of $18,000,000 flying boat during World War II heard industrialist Henry J. Kaiser declare that "very beautiful frameup" blocked his wartime efforts to build fleet of 200-ton cargo-carrying planes.

**U.S. Steel Corp.** and other steel plants announced move to increase steel products $5 per ton as of Aug. 1.

**U.S. resolution** for establishment of semipermanent Balkan frontier commission was vetoed in U.N. Security council by Andrei A. Gromyko, soviet delegate.

## JULY—*Continued*

30 **U.N. Security council** was asked by Australia to order both Netherlands and Indonesian republic to cease hostilities promptly and arbitrate differences peaceably.

31 **U.S. offer** of its "good offices" to mediate Netherlands-Indonesian war was placed before U.N. Security council by Herschel V. Johnson, U.S. deputy delegate.

**Peace treaty** with Allies was ratified by 262 to 68 vote in Italian constituent assembly.

**Buckingham palace** announced Princess Elizabeth would wed Lt. Philip Mountbatten Nov. 20 in Westminster abbey.

## AUGUST

1 **U.N. Security council** voted 8-0 to call on Indonesian and Netherlands governments to cease fighting and settle differences by arbitration; Britain, France and Belgium abstained.

2 **John W. Meyer,** publicity aide for Howard Hughes, disclosed that from 1943 to 1945 he expended $5,083 in entertaining Elliott Roosevelt (then army air officer) in effort to get war contract for reconnaissance planes.

3 **Indonesian and Netherlands governments** announced willingness to call off hostilities in compliance with U.N. Security council's request.

5 **Demand** that U.N. Security council order British to evacuate Egypt and Sudan was placed before council by Mahmoud Fahmy el-Nokrashy Pasha, Egyptian prime minister.

**Failure of grand jury** sitting in Jackson, N.C., to indict seven white men on charges of attempting to lynch young Negro was denounced as "miscarriage of justice" by Gov. R. Gregg Cherry, who said he would order reopening of case.

6 **Howard Hughes,** testifying before senate investigating committee, said Sen. Owen Brewster, committee chairman, had offered to kill inquiry into military aviation contracts if Hughes would agree to merge Pan-American Airlines with TWA.

**Prime Minister Attlee** warned in commons speech that government would order new sacrifices to increase production for export and save dollar balances; Attlee also disclosed that balance of U.S. loan would be gone by end of 1947.

**State department** charged that Rumania, by suppressing National Peasant party and arresting Juliu Maniu, its leader, had violated peace treaty with U.S.

7 **Labour government's drastic program** to meet economic crisis was approved in British house of commons by 318-170 vote.

**New bill** which would provide for merit promotion of officers in army and navy was signed by Pres. Truman.

**International Bank for Reconstruction and Development** approved loan of $195,000,000 to the Netherlands, but stipulated funds were to be used solely for reconstruction of homeland, and not for Netherlands Indies or military purposes.

8 **House of commons** passed on second reading Labour government bill asking for sweeping emergency powers to deal with Britain's economic crisis; opposition leader Winston Churchill accused Labourites of seeking "blank check for totalitarianism."

**Eight largest U.S.** moving-picture companies agreed to suspend indefinitely shipment of U.S. films to Britain, because of "confiscatory" British tax on earnings of imported films.

**Pres. Truman** signed Sugar act of 1948 after making public assurances from Sec'y of State Marshall that measure would not become "economic threat" to hemispheric sugar producers.

9 **Sec'y of State Marshall** informed France of U.S. willingness to confer with France and Britain "without delay" on plans for raising industrial production in Germany.

10 **Gen. Lucius D. Clay** reported that U.S. had released last of 8,010,007 German prisoners of war and had completed destruction of German military defense works in U.S. zone.

**William P. Odom,** landing his aircraft at Chicago's Douglas airport, established record for solo round-the-world trip, flying 19,645-mi. course in 73 hr. 5 min. 11 sec.

11 **Sen. Homer Ferguson** (Rep., Mich.) suddenly called suspension of senatorial inquiry into Howard Hughes's war contracts.

**U.N. Sec'y Gen. Trygve Lie** admitted deterioration in world political situation, but added he did not believe that any responsible statesman "can, or does, contemplate the prospect of war."

12 **Declaring Greece** was in "grave peril," Deputy U.S. Delegate Herschel V. Johnson introduced resolution before U.N. Security council ordering Albania, Bulgaria and Yugoslavia to stop helping Greek guerrillas.

**Britain, France and Belgium** lost fight to prevent Indonesian republic from giving its view on Indonesian-Netherlands dispute in U.N. Security council.

13 **Thousands of new casualties** were caused by Hindu-Moslem rioting in Lahore and other areas of Punjab province.

**Sec'y of Treasury Snyder** moved to spike rumours of U.S. increase in gold price by declaring that responsible Washington quarters neither planned nor discussed such action.

14 **Att'y Gen. Tom Clark's investigation** to determine responsibility for conspiracy to increase prices of food, housing and clothing was approved by Pres. Truman.

**Italian debt** of about $1,000,000,000 was cancelled by U.S. which also liberalized many of "burdensome" financial and economic clauses in Italian peace treaty.

**U.S. resolution** ordering three soviet satellites in Balkans to cease aiding Greek guerrillas was branded in U.N. Security council as "crudest interference" in Greece's internal affairs by Andrei Gromyko, soviet delegate.

15 **Britain's long rule over India** was formally ended and country achieved independence as two separate dominions, India and Pakistan; Mohammed Ali Jinnah was sworn in as governor-general of Pakistan and Jawaharlal Nehru as prime minister of dominion of India; in London, India office was abolished and King George VI formally approved appointment of Arthur Henderson as minister of state for commonwealth relations, and conferred an earldom on Viscount Mountbatten who became governor-general of dominion of India.

**Sec'y Marshall's rejection** of soviet proposal that Japanese peace treaty be written only by U.S., Soviet Union, Britain and China was disclosed by state department.

**U.S. delegation** at opening of Inter-American conference near Rio de Janeiro proposed all nations covered by hemisphere defense treaty be obliged to take part in defense against aggressor.

**Gerhart Eisler,** regarded as top Communist agent in U.S., was convicted in federal court on passport fraud charges.

16 **Establishment of military government** of "Free Greece" was proclaimed in broadcast by Gen. Markos Vafeiades, Greek guerrilla leader.

**Nikola Petkov,** Bulgar opposition leader, was sentenced to death on charges of conspiracy against government by Sofia district court.

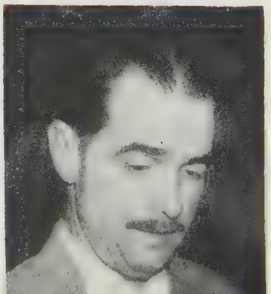
17 **U.S. steel industry** was charged with illegal price-fixing and restraint of competition by Federal Trade commission.

18 **Branding** Bulgarian death sentence passed on Opposition Leader Nikola Petkov as "gross miscarriage of justice," U.S. called on Soviet Union to urge Bulgar government to suspend sentence pending review of case.

**Admission of Yemen and Pakistan** to U.N. was voted unanimously by Security council but applications of Albania, Outer Mongolia, Trans-Jordan, Eire and Portugal were rejected.

**The pictures on this page are, left to right:**

| | |
|---|---|
| **MOLOTOV** | **July 2** |
| **ELIZABETH** | **July 10** |
| **FORRESTAL** | **July 26** |
| **HUGHES** | **Aug. 6** |
| **ODOM** | **Aug. 10** |



## AUGUST—*Continued*

19 **Australian and U.S. resolutions** aimed at solving Balkan controversy were vetoed by Andrei Gromyko, soviet delegate in U.N. Security council.

**U.S. offer** to settle Indonesian-Netherlands dispute was rejected by Sutan Sjahrir, Indonesian representative, who renewed demand that U.N. Security council set up arbitration commission to settle controversy.

20 **Delegates** to Inter-American peace conference at Petrópolis, Brazil, heard Sec'y of State Marshall warn that U.S. economic aid to Europe must take precedence over any "Marshall plan" for Latin America.

**Britain and U.S.** announced joint agreement to end free convertibility of pounds sterling into dollars in move to halt drain of Britain's slim dollar resources.

**Herschel V. Johnson,** U.S. deputy delegate to U.N. Security council, asked U.N. general assembly to assume jurisdiction on Balkan question.

**New NLRB policy** of dismissing cases where unions failed to comply with Taft-Hartley law's registration requirements was announced by Robert N. Denham, NLRB's general counsel.

**Record surplus** of $4,700,000,000 at end of 1948 fiscal year was forecast by Pres. Truman in annual midyear budget review.

21 **Pres. Truman** named Kenneth C. Royall as secretary of army, John L. Sullivan as secretary of navy and W. Stuart Symington as secretary for air.

**State department** disclosed U.S.S.R. protested against impending Anglo-U.S.-French parley to increase industrial output in Anglo-U.S. zones of Germany; department also revealed that U.S. lodged another protest with U.S.S.R. over continued Russian occupation of Chinese port of Dairen.

**Andrei Gromyko,** soviet delegate, vetoed applications of Italy and Austria for U.N. membership on ground that Italian peace treaty had not yet been ratified and that peace negotiations with Austria had not yet been started.

22 **Anglo-French-U.S.** parley to discuss measures for raising industrial production in Anglo-U.S. zones of Germany opened in London.

**Argentina** jolted Inter-American Defense conference with proposal that Americas agree to act collectively to repel aggression only in case of external aggression.

23 **Failure** to rally country in fight against guerrillas was one of major factors in resignation of Greek government headed by Premier Demetrios Maximos.

**Army revolt in Ecuador** led to overthrow of Pres. José María Velasco Ibarra and assumption of power by Defense Minister Col. Carlos Mancheno who proclaimed himself president.

24 **Need** for "drastic, far-reaching political and economic reforms" in Chiang Kai-shek's government was stressed by Lt. Gen. Albert C. Wedemeyer on concluding his study of Chinese situation as Pres. Truman's personal representative.

**French People's rally** was formally launched by Gen. De Gaulle who announced he would present lists of candidates for October municipal elections.

**Dispatches from Lahore** in Pakistan reported that Sikhs in eastern Punjab province were slaughtering hundreds of Moslems daily and burning Moslem villages.

25 **Soviet delegation in Korea** was charged with attempting to "usurp" functions of U.S.-soviet joint commission by Maj. Gen. Albert E. Brown, chief of U.S. delegation.

26 **U.S. proposal** that Allies review death sentence passed on Nikola Petkov by Bulgar government was rejected as "interference" in Bulgarian internal affairs by Moscow government.

**10 of U.N.** Security council's 11 members appealed to Netherlands and Indonesian republic to obey cease-fire order issued nearly four weeks earlier; United Kingdom abstained from voting.

27 **"Siege economy" measures** under which food, motoring and foreign travel were placed under severe rationing was ordered by British Labour government.

**Program** calling for expansion of scientific research at cost of at least 1% of national income was laid before Pres. Truman by his scientific research board.

28 **Both Pres. Truman and Gov. Dewey** of New York called for universal military training in messages to American Legion convention opening in New York city.

**Pres. Truman** and Pope Pius XII mutually pledged in exchange of letters to work jointly for permanent world peace.

29 **Disclosure** that atomic power plant had been successfully operating at low power from Nov. 1946 was made by Dr. Norris E. Bradbury, director of Los Alamos Scientific laboratory.

**Constantin Tsaldaris** was sworn into office as premier of Greece.

**Anglo-U.S. plan** to raise industrial output of their merged zones of Germany to 1936 production levels was jointly announced in Berlin.

**Four-power conference** for setting up united, independent Korea was urged on Soviet Union by U.S. state department.

**Moscow radio** announced soviet ratification of peace treaties with Italy, Finland, Hungary, Bulgaria and Rumania.

30 **Treaty of Rio de Janeiro** for hemispheric defense was formally and unanimously adopted by delegates of all 19 nations in Inter-American parley at Petrópolis, Brazil.

**Plan** for raising industrial production in Anglo-U.S. areas of Germany was denounced by Marshal Vassily D. Sokolovsky, soviet military governor, as violation of 1946 four-power agreement.

**Bendix Trophy race** was won by Paul Mantz, covering 2,054-mi. distance from Van Nuys, Calif., to Cleveland, O., at average speed of 460.423 mi. per hour.

31 **Termination of British mandate in Palestine** and partition of country into Arab and Jewish states were recommended by majority of U.N. special committee on Palestine; Zionists generally approved U.N. report although Arabs were opposed to any division of Holy Land.

**Results** of Hungarian national elections assured Communists of victory; observers claimed voting was fraudulent and dishonest.

**Food Minister John Strachey** announced that Britain would suspend temporarily all purchases of food from U.S.

## SEPTEMBER

1 **William Green,** A.F. of L. president, exhorted U.S. labour and friends to rally in voting bloc to defeat in 1948 elections those federal and state legislators who supported "new wave of hostile anti-labour legislation"; Philip Murray, C.I.O. president, said determination of U.S. workers to change antilabour complexion of congress was being translated into political action; former Vice-Pres. Henry Wallace warned at Detroit labour rally that third party would be created in U.S. unless Democratic party was transformed into "party of peace and prosperity."

**Communist party** won first place in Hungary's national elections while Catholic-supported People's Democratic party was second in polling.

2 **Pres. Truman** in speech before Inter-American Defense parley in Petrópolis, Brazil, reiterated fidelity to U.N., but emphasized that U.S. was determined to remain strong to carry out objectives of permanent peace.

**Soviet-U.S. impasse** was deepened by Moscow rejection of U.S. demand to open Dairen as international port and by Washington rebuff of soviet protest against plans for raising German industrial output in Anglo-U.S. zones of reich.

3 **Pres. Truman** announced lifting of ban prohibiting export of radioactive isotopes to scientists in foreign countries.

**The pictures on this page are, left to right:**

| | |
|---|---|
| DE GAULLE | Aug. 24 |
| TSALDARIS | Aug. 29 |
| NEHRU | Sept. 13 |
| TOGLIATTI | Sept. 14 |
| CRIPPS | Sept. 29 |

## SEPTEMBER—*Continued*

**British Foreign Sec'y Ernest Bevin** called on U.S. to "redistribute gold in Fort Knox," and to use storaged ingots to finance world recovery.

4 **Themistocles Sophoulis** became Greek prime minister after Constantin Tsaldaris agreed to serve as deputy premier in Sophoulis' government.

5 **Fourth International Cancer Research congress** at St. Louis was told by Dr. Richard Lewisohn of N.Y. that regressions of breast cancers were produced in 43% of experimental animals injected with newly discovered vitamin.

**Washington dispatches** disclosed that Office of Naval Research was co-operating with 100 leading U.S. universities in developing scientific projects and in training graduate students in science.

**Cyrus S. Ching** was sworn in as director of new Federal Mediation and Conciliation service.

6 **Berlin dispatches** said U.S. military government was asked by Washington not to overemphasize German bungling of food and farm program lest congress refuse to authorize funds for export of food to reich.

**30 countries,** including Russia, filed applications with U.S. Atomic Energy commission for radioactive isotopes, according to statement made at Fourth International Cancer Research congress in St. Louis.

**John Deferrari,** former fruit peddler, presented $1,000,000 gift to Boston Public library.

7 **Pope Pius XII** appealed to world Catholics to rally with all their strength to fight foes of church.

**Fighting** between Moslems and Hindus spread to New Delhi, capital of India.

8 **German V-2 rocket** was successfully fired from U.S. aircraft carrier "Midway" in Atlantic tests.

**Greek Prime Minister Sophoulis** announced plan to invite international board to supervise and guarantee full amnesty for all guerrillas who laid down their arms.

10 **British Foreign Sec'y Ernest Bevin** suggested U.S. institute peacetime program of lend-lease to help Europe.

**12-point program** to raise Ruhr coal output to 300,000 tons daily under German management was jointly announced by U.S. and Britain.

12 **Warning British government** might start new manufactures unless private business produced more and better export goods was sounded by Sir Stafford Cripps, president of board of trade.

**Disclosure** that 12 European nations and Iceland decided to form group to study customs unions was made by French foreign ministry.

13 **NBC stations** voted unanimously to ban broadcast of all crime and mystery shows before 9:30 P.M. (New York time) to minimize possibility that they would be heard by children.

**Prime Minister Nehru** of India said flareup of Hindu-Moslem fighting forced India and Pakistan into hasty exchange of populations involving about 4,000,000 persons.

14 **Premier Ahmad Ghavam-es-Saltaneh** presented new cabinet to Iranian parliament, declaring his government would not permit interference in country's affairs.

**Palmiro Togliatti,** Italian Communist leader, denounced U.S. as "world dictatorship" trying to "spread another war" in speech before 100,000 Communists who shouted "Death to Truman!"

15 **Andrei Gromyko,** soviet representative on U.N., used double veto in Security council to block U.S. plan to permit general assembly to make recommendations on Greek question.

**Warning** of "boom-and-bust" danger in rising grain prices, Commodity Exchange authority asked big U.S. grain exchanges to double margin requirements in grain futures.

16 **Dr. Oswaldo Aranha** of Brazil was elected president of second regular session of U.N. general assembly, defeating H. V. Evatt of Australia, 29 votes to 22.

**Approval** of revised draft report submitted by 16 nations to receive aid under Marshall plan was announced by William L. Clayton, undersecretary of state.

17 **Sec'y of State Marshall** proposed that U.N. set up standing committee within general assembly to "consider situations and disputes impairing friendly relations."

**Pres. Truman,** travelling back to U.S. from Brazil aboard battleship, radioed orders to Washington that James Forrestal be sworn in as secretary of defense in view of "whole general international situation."

18 **Andrei Vishinsky,** soviet deputy foreign minister, charged before U.N. general assembly that U.S. had expansionist plans centring about world domination; he accused influential U.S. circles of trying to fan war psychosis, naming as "instigators" John Foster Dulles, Morgan, Ford and Rockefeller interests and American Legion and others.

**John L. Sullivan and W. Stuart Symington** were sworn in as secretaries of navy and air force, respectively.

19 **European conferees** on Marshall plan adopted report estimating that western European trading area would need $19,310,000,000 from American countries during next four years.

20 **Warren R. Austin,** chief U.S. delegate to U.N., branded as "absolute falsification" charges of "warmongering" laid to certain U.S. circles by Andrei Vishinsky, Russian deputy foreign minister.

**French Foreign Minister Georges Bidault** denied Vishinsky's charge that Marshall plan was attempt to make Europe subservient to U.S., and said France would continue its task of trying to unite world's "two hostile blocs."

21 **Rumanian, Hungarian and Bulgarian governments** were advised by British spokesman that additional flagrant infringements of freedom in their countries would be regarded as criminal violations of peace treaties.

**Archbishop Joseph E. Ritter** warned Roman Catholics of St. Louis, Mo., that they would be excommunicated automatically if they persisted in plans to take civil action against him to prevent admission of Negroes to parochial schools.

22 **Robot-piloted** Douglas C-54 Skymaster transport plane flew from Newfoundland to London without human aid.

**16-nation European conference** on Marshall plan ended after conferees signed and dispatched to Washington their requests for economic aid.

23 **U.N. general assembly** overrode soviet objections to inclusion on agenda of Greek question, problem of Korean independence and Italian peace treaty.

**Nikola Petkov,** Bulgarian opposition leader who was convicted of plotting against government, was hanged in Sofia prison.

**NLRB's general counsel** sued two union locals (one for alleged refusal to bargain and other for carrying on secondary boycott) for violating Taft-Hartley labour law.

25 **Pres. Truman** urged all Americans to conserve food to bring down prices and to release supplies to Europe's hungry.

**Pres. Truman** appointed Gen. Carl A. Spaatz to new office of chief of staff to U.S. air force; Arthur S. Barrows was named undersecretary of air force and Dr. Vannevar Bush was named chairman of Research and Development board.

**Andrei Gromyko,** soviet delegate, proposed in U.N. Security council to vote for Italy's admission to U.N. provided Hungary, Bulgaria, Rumania and Finland were admitted simultaneously.

26 **Britain's decision** to end its Palestine mandate was announced before U.N. general assembly's committee on Palestine by Arthur Creech Jones, colonial secretary.

**Andrei Vishinsky,** soviet deputy foreign minister, said any attempt to destroy principle of unanimity in U.N. Security council would make great-power co-operation "impossible"; Yugoslav delegation to U.N. warned that U.S. resolution charging Albania, Bulgaria and Yugoslavia with Balkan aggression "smells of dynamite of new world war."

**Simultaneous withdrawal** of U.S. and soviet troops from Korea by beginning of 1948 was proposed by Gen. Terentyi Shtikov, chief of soviet delegation.

27 **Claim** that U.S. could export 500,000,000 bu. of wheat during 1947–48 crop year without "grave hardship" was made by Pres. Truman's committee on foreign aid.

**Sen. J. Howard McGrath** succeeded Robert E. Hannegan as chairman of Democratic national committee.

29 **Jamal el-Husseini,** spokesman of Arab Higher committee, told U.N. special committee on Palestine that Holy Land Arabs would not accept partition or a federal Palestine.

**State department** disclosed Foreign Minister Molotov rejected U.S. protest against Moscow magazine article slurring Pres. Truman, disclaiming government responsibility for press statements.

**Prime Minister Attlee** overhauled Labour government, naming Sir Stafford Cripps as minister for economic affairs with

### SEPTEMBER—*Continued*

sweeping powers to co-ordinate country's whole economic policy.

30 **Refusal** of soviet foreign ministry to permit U.S. senatorial delegation to enter Russia to inspect U.S. embassy at Moscow was disclosed by state department.

**Argentina and Canada** were elected on first ballot to seats on U.N. Security council.

## OCTOBER

1 **U.S. air force** formally achieved independence as military organization on par with army and navy.

**Capture** of Communist-held port of Chefoo was announced by Chiang Kai-shek's government.

**U.S. decision** to resume full diplomatic ties with Bulgaria was announced by Robert A. Lovett, acting secretary of state.

2 **Britain's Conservative party** unanimously adopted politically "advanced" charter recognizing need of government controls and desirability of some phases of nationalization.

3 **Netherlands government** disclosed that Queen Wilhelmina for "reasons of health," would temporarily turn over royal power to Crown Princess Juliana.

5 **U.S. people** were urged by Pres. Truman to observe voluntarily meatless Tuesdays, poultryless Thursdays and to conserve food for starving Europe.

**At secret meeting** in Poland, communist leaders of nine nations adopted manifesto opposing U.S. "dollar imperialism" and decided to set up "information bureau" in Belgrade; new organization called "Cominform" was tantamount to re-establishment of Comintern.

**Voters in Saar** reversed plebiscite of 1935 which had turned basin over to Germany and elected candidates pledged to economic fusion with France.

6 **U.S. was accused** of converting Greece into "military base" and of destroying Greek "independence and sovereignty" by Andrei Vishinsky, soviet deputy foreign minister.

**New York Yankees** won baseball's world series, defeating Brooklyn Dodgers 4 games to 3.

7 **11 cabinet ministers** were dropped by Prime Minister Attlee as he overhauled British government in economic crisis.

**U.S. railroads** were granted 10% emergency increase in freight charges on all commodities except coal, coke and iron ore which were put on special rate schedule.

**NLRB overrode** by 4–1 vote ruling of its general counsel, Robert N. Denham, that top officers of A.F. of L. and C.I.O. were required to sign noncommunist affidavits to comply with Taft-Hartley labour law.

8 **Approval** of U.S. proposal to create special U.N. committee to watch over Greece's border was voted by U.N. general assembly's Political and Security committee.

**Arrest** of two former army photographers on charges of theft of atomic energy photographs was disclosed by FBI Director J. Edgar Hoover.

9 **Decision** of Union of South Africa to lend Britain about $320,000,000 in gold was announced by Prime Minister Jan C. Smuts.

10 **U.S.-British-Italian** protocol provided for prompt return to Italy of $25,000,000 in gold discovered in north Italy by U.S. 5th army.

**First contingent** of U.S. war dead was returned to U.S. at San Francisco on steamer "Honda Knot."

11 **More than 1,000 mayors** of U.S. cities received telegraphed appeals from Charles Luckman, head of Citizens Food committee, to co-operate with nation-wide food conservation program.

**Partition of Palestine** was endorsed by Herschel V. Johnson, U.S. representative on U.N. general assembly's Palestine committee, who also suggested establishment of "special constabulary" to keep order in Holy Land.

**Yugoslavia** broke off diplomatic relations with Chile in answer to latter's charges that Yugoslav government had sponsored "communist plot" in South America.

12 **Leftist People's bloc** nosed out Christian Democratic party for first place in Rome's municipal elections.

13 **Soviet proposal** for resolving Greek question was defeated 40 votes to 6 with 11 abstentions in U.N. Political and Security committee.

**Soviet delegate** to U.N. general assembly's committee on Palestine endorsed partition of Palestine on grounds that Arab-Jewish tension made single state unfeasible.

14 **Soviet Deputy Foreign Minister Vishinsky** charged U.S. proposal to set up "little assembly" in U.N. was a "farce" and said U.S. was attempting to "steamroller" its plan through general assembly on discovery that "liquidation of veto was legally impossible."

**Premier Paul Ramadier** denounced as "political manoeuvre" strike of Parisian transit workers that paralyzed all of city's bus and subway services.

**A.F. of L.** delegates at San Francisco annual convention overrode John L. Lewis' objections and agreed to amend federation's constitution to comply with Taft-Hartley labour law.

15 **Delegates** to C.I.O. annual convention in Boston unanimously endorsed U.S. foreign policy after hearing address by Sec'y of State Marshall who said basic tenet was freedom or totalitarian enslavement.

16 **Pres. Truman** charged that gambling on grain exchanges was responsible for large part of food price increases and disclosed that Att'y Gen. Tom C. Clark was investigating grain speculations.

17 **Treaty** giving Burma complete independence in Jan. 1948 was signed in London by Prime Minister Attlee and Premier Thakin Nu of Burma.

**Resolution** calling for Korean elections under U.N. commission and establishment of Korean government was placed before U.N.'s Political and Security committee by Warren R. Austin, U.S. delegate.

18 **Making of recordings** and transcriptions by 225,000 members of American Federation of Musicians was banned "once and for all" by A.F.M. President James C. Petrillo; ban was to become operative Dec. 31, 1947.

**Sec'y of Interior Julius A. Krug** reported to Pres. Truman that U.S. economy was capable of undertaking substantial foreign aid program without jeopardizing U.S. security or living standards.

**Official boycott** of U.N. subcommittee set up to work out compromise of "little assembly" plan was announced by U.S.S.R. and its supporting states in eastern Europe.

19 **French People's Rally,** headed by Gen. de Gaulle, replaced Communists as strongest single party in France after polling more than 40% of vote in municipal elections.

21 **Brazil and Chile** formally severed diplomatic relations with Soviet Union.

**U.S. resolution** to establish permanent committee to assist in settling disputes between Greece and soviet satellites in Balkans was voted 40–6 in U.N. general assembly.

22 **Chairman J. Parnell Thomas** of house un-American activities committee said his group would produce evidence that at least 79 persons in Hollywood had been engaged in subversive activities.

**Soviet demands** for oil concession were rejected by 102–2 vote in Iranian parliament.

23 **Sir Stafford Cripps,** Britain's economic czar, disclosed country halted tobacco purchases from U.S. and ordered new cuts in food rations; Swedish government said its own imports of motor cars, nylons, plastics and films from U.S. would be halted.

**Pres. Truman** called special session of congress for Nov. 17 to appropriate funds for relief in western Europe and to curb soaring domestic prices.

**Dr. Carl F. Cori** and his wife, Dr. Gerty T. Cori, of U.S. and Dr. Bernardo Houssay of Argentina were jointly awarded Nobel prize in medicine.

24 **Sen. Robert Taft** (Rep., O.) formally announced his candidacy for Republican nomination to presidency.

25 **State of Maine** was proclaimed disaster area by Pres. Truman who ordered Federal Works agency to provide assistance to regions destroyed or damaged by forest fires.

**Distilleries** producing more than 95% of U.S. whisky and alcohol closed down at midnight for 60-day period to release grains for Europe's needy.

26 **Second balloting** in French municipal elections showed Socialists running far ahead of Communists.

27 **Hollywood** "revolt" against "communist" inquiry staged by house committee on un-American activities started with refusal of John Howard Lawson, film writer, to answer whether he was Communist party member; Eric Johnston told committee not to imprison Americans merely "on suspicion" of being communists.

**Gen. Charles de Gaulle** called for dissolution of assembly and national elections in France "as soon as possible."

**Compromise resolution** condemning all forms of propaganda in any country that might encourage act of aggression was

## OCTOBER—*Continued*

unanimously voted 56–0 by Political and Security committee of U.N. general assembly.

**Maharajah Sir Hari Singh** provisionally joined his state of Kashmir and Jammu to dominion of India as air-borne Indian Sikh troops fought Moslems in Kashmir's mountains.

28 **Russia** requested simultaneous withdrawal of U.S. and soviet troops from Korea by beginning of 1948 and suggested that elected Korean delegates from both zones be permitted to take part in discussions of Korean questions at U.N. general assembly.

**Danish Communists** lost 9 of 18 seats in parliamentary elections while Social Democrats and Agrarians shared major electoral honours.

**Spreading cholera epidemic** in Egypt took 6,132 lives from its beginning Sept. 3; offer of Jerusalem's Hebrew university to dispatch anticholera serum to fight epidemic was ignored by Egyptian government.

30 **17 leading** U.S. investment banking houses were accused of violating antitrust laws in civil complaint filed by department of justice.

**Premier Paul Ramadier** won vote of confidence in French assembly by narrow margin of 300 to 280 votes.

**House committee on un-American activities** abruptly halted inquiry into Hollywood "communism."

**U.S. proposal** to set up U.N. commission to watch over Korean elections was voted 41–0 in Political and Security committee of U.N. general assembly; Russia and several other countries abstained from voting.

31 **Greek government** announced emergency tax program to raise additional $120,000,000 to meet increased military expenditures and other costs arising from war with guerrillas.

**Slovak** semiautonomous government resigned under pressure from Slovak Communists.

**U.A.W.** reversed earlier stand and voted to sign anticommunist affidavits in compliance with Taft-Hartley labour law.

## NOVEMBER

1 **British Labour party** was decisively defeated by Conservatives in municipal elections in England and Wales.

2 **Howard Hughes** put his 200-ton flying boat, which cost $25,000,000, through successful test flight.

**Conservative party's** demand for general elections, based on its successes in Britain's municipal elections, was rejected by Labour party.

**U.S. Communist party** decided not to join newly formed Communist information bureau because of domestic "political situation."

3 **Compromise resolution** condemning all war propaganda was voted unanimously by U.N. general assembly.

**Stanislaw Mikolajczyk** reached London after escaping from Poland.

4 **Republican victory forecasts** were upset in Kentucky where Earle C. Clements, Democrat, was elected governor over G.O.P. opponent; Judge John Cornelius Stennis was elected to fill unexpired senate term of Theodore Bilbo in five-man Mississippi contest in which Rep. John E. Rankin ran last.

**U.S.** was accused by soviet and Slav delegates at U.N. general assembly's Political and Security committee of having suppressed democratic elements in Korea.

5 **U.S. army newspaper** in Vienna reported that Zoltan Pfeiffer, leader of Hungarian Independence party, fled Hungary to escape Communist wrath.

6 **Soviet Foreign Minister Molotov** told Moscow audience on 30th anniversary of bolshevist revolution that atom bomb secret "has long ceased to exist"; most U.S. authorities held Molotov's speech meant Russia had merely learned technique of making bomb.

7 **Mme. Ana Pauker,** Communist member of Rumanian government, was appointed Rumanian foreign minister.

8 **Proposal for expenditure** of up to $17,000,000,000 on European aid with objective of preventing World War III was sent to Pres. Truman by his committee on foreign aid, headed by Sec'y of Commerce W. Averell Harriman.

9 **Bangkok** was seized in coup d'état staged by Siamese military clique headed by Field Marshal Luang Pibul Songgram who announced overthrow of Premier Thawan Thamrong Nawasawat's government.

**Rationing of potatoes** to three pounds weekly per person was put into effect in Britain by John Strachey, food minister.

10 **Sec'y of State Marshall** asked congress to take prompt and urgent action to provide $597,000,000 of stopgap aid to France, Italy and Austria; Pres. Truman reported that U.S. aid had helped Greece to avert economic collapse and preserve freedom.

**Kashmir city of Baramula** was completely wrecked after 13-day raid staged by Moslem tribesmen.

**U.S. and U.S.S.R.** reached compromise agreement over Palestine and endorsed new U.N. partition plan under which Britain would end mandate and military occupation by May 1, 1948.

11 **United Automobile Workers** endorsed anticommunist position of its right-wing faction and re-elected Walter Reuther president; George F. Addes, left-wing leader, was defeated for vice-presidency by Emil Mazey, a Reuther supporter.

**Bucharest military tribunal** sentenced Dr. Juliu Maniu and Ion Mihalache, both Rumanian Peasant party leaders, to life imprisonment on treason charges.

12 **Pres. Walter Reuther** consolidated grip on U.A.W. as his right-wing supporters ousted R. J. Thomas and Richard T. Leonard from top-level offices.

**Britain's new tax program** called for raising £208,000,000 by increasing sales taxes, doubling profit taxes and issuing levies on advertising appropriations.

**Communist riots** widened in Italy as Palmiro Togliatti, Communist chieftain, called on party's central committee to "intensify agitation against" government both inside and outside parliament.

13 **French Communists** were accused of fomenting Marseilles riot by Premier Paul Ramadier, who told excited national assembly that government would "go limit" in defending republic against them.

**Sir Stafford Cripps** was appointed chancellor of exchequer following resignation of Hugh Dalton, who admitted he had inadvertently released information on new budget to press.

**Nobel prizes** went to; André Gide, French writer, for literature; Sir Edward Victor Appleton for physics and Sir Robert Robinson for chemistry.

**U.N. general assembly** adopted U.S. proposal creating "little assembly" by 41-6 vote over bitter protests of Soviet Union and its bloc; 6 Arab states abstained from voting.

14 **Majority** of U.N. members ignored soviet warning of "grave consequences" and voted 43-0 with 6 abstentions, to establish U.N. commission to supervise elections and establish provisional government in Korea.

**Sec'y of Army Royall** announced U.S. army would add 170 officers and men to existing complement of 40 officers and men in its Greek military mission.

**Wage raises** totalling $100,000,000 yearly and changes in four working rules were granted to two railroad unions by Class I railroads in first settlement of kind worked out without government mediation.

15 **Four-year** $600,000,000 program for construction of 46 passenger liners was recommended by Pres. Truman's ad-

**The pictures on this page are, left to right:**

| | |
|---|---|
| LUCKMAN | Oct. 11 |
| NU | Oct. 17 |
| PETRILLO | Oct. 18 |
| THOMAS | Oct. 22 |
| MIKOLAJCZYK | Nov. 3 |

## NOVEMBER—*Continued*

visory committee on merchant marine.

16 **British military forces** started scheduled withdrawal from Palestine.

**American Iron and Steel institute** and 101 steel producers were accused by Federal Trade commission of combining to block increased production and of discriminating against far west in selling methods.

17 **Pres. Truman** asked congress for authority to reimpose price controls, rationing and wage controls to prevent economic disaster in U.S. and to enable country to fulfil foreign-aid commitments; Truman's program was denounced by Sen. Taft as "step toward a completely totalitarian nation."

**State department sources** disclosed that U.S. tariff reductions, ranging up to 50% on major imports, had given stimulus to world trade.

18 **Soviet officialdom** and communist groups were warned to end "calculated campaign of vilification and distortion of American motives in foreign affairs" by Sec'y Marshall who asserted there was "no truth whatsoever" to their charges of U.S. imperialism and warmongering.

19 **Paul Ramadier** resigned as premier as French strike movement spread to coal and steel industries.

20 **Princess Elizabeth,** heiress presumptive to British throne, and Prince Philip, duke of Edinburgh, were married in London.

**Charles Luckman** resigned as director of government's food conservation program with Pres. Truman's assent, although latter asked Luckman to be part-time head of Citizens Food Advisory committee.

**Russia** informed Iranian government that cancellation of Russo-Iranian oil treaty was hostile action incompatible with normal relations between two countries.

21 **Gen. Omar N. Bradley** was appointed by Pres. Truman to become chief of staff of U.S. army upon Gen. Eisenhower's retirement; former Maj. Gen. Carl R. Gray, Jr., was named Bradley's successor as administrator of veterans' affairs and Maj. Gen. Clifford B. Cates was made commandant of U.S. marine corps.

**Congress** was asked by Sec'y of Agriculture Anderson for broad powers to curb speculation on grain exchanges.

**At least 3 persons** were killed and 30 others injured in fresh outbreak of rioting in Italy between communists and security forces.

**U.N. conference** on trade and employment opened in Havana.

22 **Robert Schuman** of Popular Republican Movement became premier of France after government he formed won 412–184 vote of confidence in national assembly.

23 **Six-engine XC-99** military transport—world's largest land aircraft—successfully completed 62-min. test flight near San Diego, Calif.

24 **Price ceilings** were reimposed on canned fruits and vegetables by Canadian government.

**Debate** on administration's $597,000,000 stopgap aid plan for European relief was opened with warning by Sen. Arthur Vandenberg that prompt action was needed to block Communist "wrecking crews" from killing recovery in western Europe.

**Federal reserve board** asked for authority to restrict instalment purchases for at least three-year period after three government agencies warned banks to exercise "extreme caution" in lending policies.

25 **Federal reserve board's** anti-inflation program calling for continued high taxes, tighter housing credit, longer working hours and strict government economy was presented to congress by Chairman Marriner S. Eccles; he also requested authority to make all commercial banks maintain new "special reserve" to reduce "swollen money supply."

**Opening in London** of Big Four's Council of Foreign Ministers was marked by soviet Foreign Minister Molotov's request to place Austrian peace treaty last on agenda.

**Robert E. Hannegan** resigned as postmaster general to head syndicate which bought controlling interest in St. Louis Cardinals baseball team and farm clubs for $3,000,000; Pres. Truman nominated Jesse M. Donaldson as Hannegan's successor.

26 **Molotov-Marshall tiff** snagged proceedings in Council of Foreign Ministers, with soviet foreign minister assailing western democracies as imperialist war fomenters and with Marshall replying that Molotov did not believe his own accusations.

**Pres. Truman's air policy commission** was told by W. Stuart Symington, secretary for air, that at least 630 of heaviest bombers strategically distributed throughout world were needed to meet state department's estimate of international situation.

27 **Plan to abolish** artificial exchange rate and to let lira's value be determined by supply and demand was announced by Italian cabinet.

28 **Premier Robert Schuman** won 322–186 vote of confidence in French assembly after promising energetic action to meet strike situation.

**13 high nazi generals** were indicted on charges of war crimes and crimes against humanity by U.S. military government tribunal in Nuernberg.

29 **U.S. army** ordered remaining 2,500 U.S. officers and men to prolong stay in Italy; move was linked to Washington's anxiety over continued Italian unrest.

**Paris police** entered Communist newspaper plants and suppressed editions after Premier Schuman asked French national assembly for six-month emergency police powers to suppress Communist agitators.

**U.N. general assembly** approved by 33–13 vote proposal to divide Palestine into Arab and Jewish states, both to achieve full independence by Oct. 1, 1948; Zionists expressed joy over U.N. action while Arab delegates were bitter.

30 **French national assembly** approved Premier Schuman's measure authorizing call of 80,000 reservists to use as police force to combat strikes.

## DECEMBER

1 **NLRB** disclosed it had brought suit in federal court in Utica, N.Y., against union violation of Taft-Hartley act.

**Disclosure** that proving ground for military and peaceful products and nuclear fission was being built on Eniwetok atoll was made by U.S. Atomic Energy commission.

**French Communists** seized possession of national assembly to prevent expulsion of Communist member whose ouster was ordered by Pres. Edouard Herriot.

2 **Anti-inflation program** of Chairman Marriner S. Eccles of federal reserve board was rejected as unsound by members of Eccles' own advisory council.

**Arabs and Jews** battled in Jerusalem with Haganah, Zionist defense army, leading reprisals against Arabs who looted Jewish shops; call on Arab world to start Holy War against Palestine partition was issued by Moslem holy men of El Azhar university in Cairo.

4 **Government bill** providing heavy penalties for sabotage and strikes was approved by 413–183 vote in French national assembly.

**List of 90 organizations** of alleged questionable loyalty to U.S., prepared under Att'y Gen. Tom C. Clark's supervision, was made public by special board reviewing federal employee loyalty.

**Soviet Foreign Minister Molotov** was accused by Sec'y of State Marshall during session of London Council of Foreign Ministers of trying to disrupt European recovery program with his attacks on U.S. policy.

5 **44 persons** were killed in outbreak of Arab-Jewish violence in Aden.

**The pictures on this page are, left to right:**

| | |
|---|---|
| REUTHER | Nov. 11 |
| GIDE | Nov. 13 |
| SCHUMAN | Nov. 22 |
| LOUIS | Dec. 5 |
| MICHAEL I | Dec. 30 |

## DECEMBER—*Continued*

**10 Hollywood figures** who refused to tell Thomas committee whether they were communists were indicted by federal grand jury for contempt of congress.

**Joe Louis** retained world's heavyweight title by narrow margin after being twice floored by Jersey Joe Walcott in 15-round title bout in New York city.

**Campaign plans** to raise $8,000,000 for drive to repeal Taft-Hartley labour law were unanimously approved by more than 200 top members of A.F. of L.

6 **Plea** for unceasing battle to conserve country's natural resources was made by Pres. Truman in speech at Everglades National park, Fla.

8 **U.S. supreme court** ordered new trial for Eddie Patton, Mississippi Negro condemned to die on murder charge, on ground that Negroes were excluded from jury that convicted him of slaying white man.

**Inter-American Defense treaty** was ratified in U.S. senate by 72–1 vote.

9 **Communist labour leaders** in France called off strikes, summoning all workers to return to jobs.

**Russia and France** exchanged insults, with Moscow expelling French repatriation mission and breaking off trade talks and Paris retaliating by ousting soviet repatriation mission.

**Complete authority** to allocate and ration steel, fuel and most foods was requested of congress by administration to carry out four of ten points in Pres. Truman's anti-inflation program.

10 **Sec'y Marshall** called on Russia to end practice of seizing German assets in occupation zone after charging that Soviet Union expropriated German assets at rate of $500,000,000 yearly.

**Iranian Prime Minister** Ahmad Ghavam-es-Saltaneh failed in a vote of confidence in the Majlis (parliament) and resigned.

11 **London Council of Foreign Ministers** dispelled some of gloom surrounding it by agreeing to set level of German steel output at 11,500,000 ingot tons yearly.

**Pres. Truman** announced he would oppose any G.O.P. measure to relax antitrust laws and told congress that nothing short of his own ten-point program would curb inflation.

**Russia and Britain** reached basic agreement on trade pact under which Britain would receive food and Soviet Union machinery, J. Harold Wilson, president of board of trade, told commons.

12 **Edwin W. Pauley** defended his commodity trading as normal hedge against inflation and told senate appropriations committee that he relinquished $100,000 paper profit after accepting post as special assistant to secretary of war.

**Pres. John L. Lewis** of U.M.W.A. sent curt note to William Green announcing mine union's withdrawal from A.F. of L.

**Leftist-dominated** chamber of labour called off two-day general strike in Rome after Italian government acceded to some demands made by strikers.

**Soviet Foreign Minister Molotov's angry** criticism of western attitude on reparations, at London Council of Foreign Ministers, led Sec'y Marshall to retort that Molotov's procedure made it difficult to respect "dignity of Soviet government."

14 **Soviet government** announced plans to fight inflation by issuing new currency and abolishing all food rationing starting Dec. 16.

**Last** of U.S. troops in Italy left country aboard transport that sailed from Leghorn (Livorno).

**Sec'y Marshall** flatly denied Russian charges that U.S. business interests were acquiring German property and profiting on German coal and lumber exports at London Council of Foreign Ministers.

15 **East-West chasm** widened as London Council of Foreign Ministers adjourned with little accomplished.

**Drastic reorganization** of U.S. higher education was recommended by Pres. Truman's 28-man commission on higher education; group denounced as wasteful, segregation and quota systems practised in many higher institutions.

**Moscow radio** announced complete evacuation of all Russian troops from Bulgaria on Dec. 14 in accordance with peace treaty.

16 **Charge** that Russia had taken from its German occupation zone "considerably more" than $7,000,000,000 worth of reparations was made by Foreign Sec'y Bevin.

17 **U.S.** agreed to pay most of cost of running Anglo-U.S. zone of reich in return for controlling voice in zone's economic affairs.

18 **U.S.S.R.** was accused by Foreign Sec'y Bevin of infringing on sovereignty of satellites by preventing their participation in European Recovery program.

19 **Congress** was asked by Pres. Truman to authorize 4-year European Recovery program costing $17,000,000,000 to halt "selfish totalitarian aggression."

**Alcide de Gasperi's** 5th government won 303-118 vote of confidence from Italian constituent assembly after he vigorously denied opposition accusations that his government toadied to U.S.

**Maj. Gen. Bennett E. Meyers** and former associate Bleriot Lamarre were indicted by federal grand jury in Washington on charges of giving false testimony at senate inquiry.

**Bill** directing Sec'y of Agriculture Anderson to supply names of "all traders" on commodities exchanges was approved by congress and signed by Pres. Truman.

20 **Sen. Taft** contended congressional powers voted in special session would permit Pres. Truman to check virtually all principal inflationary causes "if he really wishes to do so."

21 **Report** calling for $135,000,000 national scholarship program for colleges and universities was issued by Pres. Truman's commission on higher education.

**Iranian press dispatches** said former Premier Ahmad Ghavam-es-Saltaneh was arrested and his passport seized as he was about to board U.S.-bound plane.

22 **Constitution** creating Italian republic was approved in constituent assembly by 453–62 vote.

**U.S.** action in detaining two Greek Communist correspondents on Ellis Island brought rebuke from U.N. Sec'y Gen. Trygve Lie who pointed out that U.S. was obliged to grant special status to accredited reporters under U.N. headquarters agreement.

**Sec'y of Agriculture Anderson** published list of 711 large traders in commodities exchanges.

**Agreement** leasing 13 military bases to U.S. for defense of Panama canal was rejected by 51–0 vote in Panamá assembly.

**Friedrich Flick,** German industrialist, was found guilty of war crimes by U.S. military court in Nuernberg and sentenced to 7 years in prison from the time of his arrest in Aug. 1945.

23 **Harold Stassen,** G.O.P. presidential aspirant, obliquely charged that "administration insiders" had improperly profited in commodities markets.

**"First Provisional Democratic** Government of Free Greece" was proclaimed by Gen. Markos Vafeiades, Greek guerrilla chieftain, in communist-dominated areas.

**Bill** providing $522,000,000 in stopgap relief for France, Italy and Austria, $18,000,000 for China and $340,000,000 for U.S. occupational expenses was signed by Pres. Truman.

**U.S. government** announced it was evacuating all military bases in Panamanian republic outside of Canal Zone.

**Pres. Truman** pardoned 1,523 men convicted during World War II of violating Selective Service act.

24 **Creation** of interdepartmental committee for scientific research and development was announced by Pres. Truman, who appointed John R. Steelman as his liaison agent with new body.

25 **Proof** that scientists could produce an infectious cold was offered in article by Dr. Norman H. Topping and Dr. Leon T. Atlas issued by U.S. public health service.

**Nationalist** China's new constitution was proclaimed as being in force by Nanking's publicity organs.

26 **Pres. Truman** delegated all authority for European stopgap aid plan to Sec'y Marshall.

**Gen. Hideki Tojo** charged U.S. and Britain forced war on Japan as he took witness stand in trial of Tokyo war criminals.

28 **Pres. Truman** announced he would sign G.O.P. anti-inflation bill, but said he would be shirking duty if he failed to tell public that measure was "pitifully inadequate."

29 **Henry A. Wallace** announced plans to run for president on third-party platform pledged "to positive peace program of abundance and security, not scarcity and war."

30 **King Michael** of Rumania announced decision to abdicate; shortly thereafter Rumanian government proclaimed "People's Republic."

31 **Sec'y of Agriculture Anderson** urged congress to halt listing of commodity speculators on ground that it caused "heartache" to many innocent people, but added that listing of public officials involved in grain speculation should continue.

# BOOK OF THE YEAR

**Abrasives.** The salient data on abrasives in the United States are presented in the accompanying table, supplemented by brief notes on general conditions.

*United States Production of Abrasives*

(In short tons, or as indicated)

| | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|
| Aluminous Abrasives | | | | |
| Corundum* | 5,686 | 6,402 | 6,244 | 4,207 |
| Emery | 6,666 | 6,940 | 7,856 | 6,188 |
| Carbon Abrasives | | | | |
| Industrial diamonds, carats* | 12,175,430 | 12,656,835 | 10,793,285 | 4,705,118 |
| Silica Abrasives | | | | |
| Quartz | 99,445 | 82,379 | 57,764 | 73,179 |
| Sand (abrasive) | 837,662 | 897,983 | 642,511 | 906,889 |
| Sand and sandstone (ground) | 541,350 | 558,606 | 533,656 | 575,888 |
| Tripoli | 14,912 | 18,425 | 18,247 | 28,955 |
| Silica Stone Abrasives | | | | |
| Grindstones | 10,732 | 9,373 | 10,033 | 11,605 |
| Millstones (value) | $9,240 | $9,700 | $15,018 | $14,780 |
| Pulpstones | 1,891 | ? | ? | 72 |
| Tube mill liners | 2,585 | 2,063 | 1,982 | 2,375 |
| Grinding pebbles | 9,924 | 8,012 | 8,615 | 4,652 |
| Silicate Abrasives | | | | |
| Garnet | 5,935 | ? | 6,306 | 7,743 |
| Pumice | 85,150 | 88,757 | 157,011 | 319,883 |
| Artificial Abrasives | | | | |
| Silicon carbide† | 69,706 | 56,291 | 53,733 | 63,849 |
| Aluminum oxide† | 217,425 | 185,573 | 147,016 | 132,084 |
| Metallic abrasives† | 124,954 | 144,550 | 146,771 | 111,512 |

*Imports; no domestic production. †Includes Canada also.

Most types of abrasives were in greater demand in 1946, and both domestic production and imports reacted accordingly. Tripoli, quartz, grindstones and tube mill liners increased in output, sales of garnet were the greatest after 1925, and new high records were made by sand abrasives and pumice. Pulpstones were again produced in small amount, after two years of inactivity. Of the list, declines were limited to emery and millstones. The demand for artificial abrasives was concentrated on silicon carbide, which increased 19% in output, while metallic abrasives dropped 24% and aluminum oxide fell 10%.

**Foreign Trade.**—The dollar value of all natural abrasives imported into the U.S. in 1946 was $15,320,284, compared with $13,493,381 in 1945 and a high of $23,456,221 in 1944. Heavy increases in the value per carat for certain types of industrial diamonds were mostly responsible for the 1946 increase, though the weight of stones imported dropped sharply. Besides diamonds, there were increased values for pumice and flint, while corundum, emery wheels, and burrstones declined.

Exports of abrasive materials from the U.S. rose from $2,087,598 in 1945 to $2,426,853 in 1946, as compared with the 1942 high of $6,684,352.

**Canada.**—Except for sand and quartz there is little production of abrasives in Canada. Ontario has a small output of corundum, which decreased from 1,317 short tons in 1945 to 1,190 tons in 1946, while New Brunswick turned out 225 tons of grindstones in 1945 and 250 tons in 1946. (G. A. Ro.)

**Abyssinia:** *see* Ethiopia.

**Academy of Arts and Letters, American:** *see* Societies and Associations.

**Academy of Political and Social Science, American:** *see* Societies and Associations.

**Accident Insurance:** *see* Insurance.

**Accidents.** Accidental deaths in the U. S. during the first nine months of 1947 totalled 75,900, an increase of more than 3,000 over the nine-month total in 1946. The largest portion of the increase was in public nonmotor vehicle deaths, but occupational and home deaths were also more numerous than in 1946. Motor vehicle deaths, however, totalled about 1,700 less than during the preceding year.

Home accidents were responsible for 25,200 deaths during the first nine months of 1947, which was 1,200 more than the corresponding figure for 1946.

Safety work throughout the nation continued to expand during 1947. Activities of the National Safety council and its affiliated state and community organizations were intensified, along with the accident prevention efforts of industry, schools, and governments, and private agencies of many kinds.

A National Safety congress was held in Chicago in 1947. The 10,000 delegates attending represented every phase of safety in every part of the country.

A Highway Safety conference—a follow-up of the one in 1946—was called by President Harry S. Truman in June of 1947. At this meeting educators, engineers, police, jurists, motor vehicle administrators, safety council executives, governors, and mayors worked out recommendations covering accident records, laws and ordinances, education, enforcement, engineering, motor vehicle administration, public information and organized public support. (*See* also FEDERAL WORKS AGENCY.) (R. L. Fo.)

**Traffic Accidents.**—Although considerable progress was made in highway safety during 1947, there still remained a tremendous amount of work to be done.

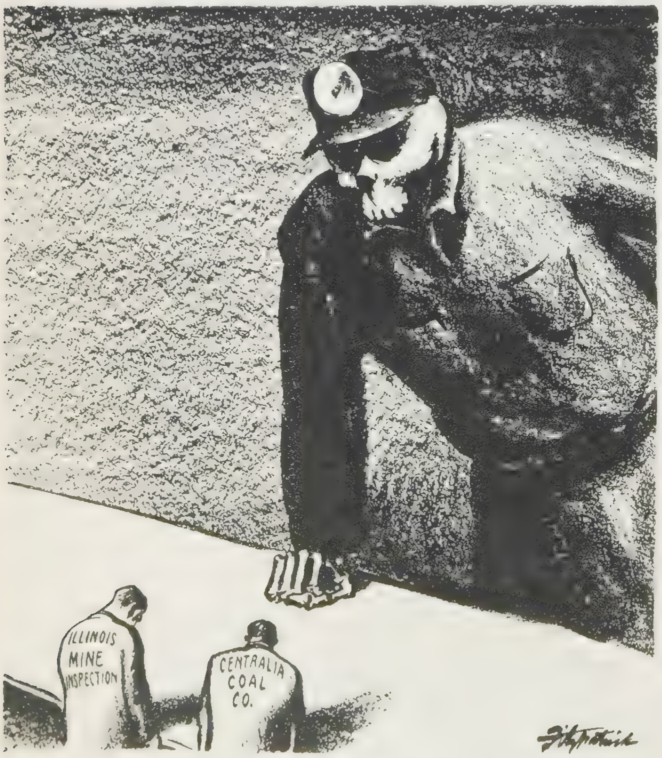
The 1947 traffic toll was 32,000 deaths and approximately 1,100,000 nonfatal injuries. The value of property destroyed and damaged by 1947 traffic accidents was estimated at $900,000,000. The 1946 death toll was 33,700.

The mileage death rate—deaths per 100,000,000 vehicle miles—was estimated at 8.6, lowest in the nation's history. Travel was generally about 10% above 1946 and 12% higher than in 1941.

The nation's top safety experts gathered in Washington, D.C., June 18-20 to study progress made since adoption of the Action Program of the president's Highway Safety conference in 1946. Delegates reported need for more rapid adoption of the program at the community level.

Two committees, the Federal Committee on Highway Safety and the State Officials' National Highway Safety committee, were activated to assist in this work. They were to co-operate with the National Committee for Traffic Safety, the third major committee established by the 1946 conference.

One of the most important developments of the 1947 conference was establishment of a new advisory group on highway safety research which was to re-examine and reappraise knowledge of highway accident causes and remedies. The advisory group was appointed by Major General Philip B. Fleming, general chairman of the conference. Sidney J. Williams, assistant to the president of the National Safety council, was chairman of the group.



"YOU GAMBLED BUT I PAID," an indictment by Fitzpatrick of the *St. Louis Post-Dispatch,* charging negligence in the tragic mine explosion at Centralia, Ill., in March 1947

Grand award winners in the National Traffic Safety contest, conducted by the National Safety council, were Washington, D.C., in the intercity section and Connecticut in the state section. Cities winning first place in their respective population groups were: Washington, D.C. (500,000 and more); San Diego, Calif., and Memphis, Tenn., tie (250,000 to 500,000); Omaha, Neb. (100,000 to 250,000); Hamtramck, Mich. (50,000 to 100,000); Rochester, Minn. (25,000 to 50,000); and Logan, Utah, and Albert Lea, Minn., tie (10,000 to 25,000).

A special honour roll listed 160 cities with population from 5,000 to 10,000 which went through 1946 without a traffic death.

Omaha, Neb., took the grand award prize in the National Pedestrian Protection contest sponsored by the American Automobile association. Top honour among states was won by Connecticut. Detroit won first place among cities of more than 500,000 population. Other first place winners were Schenectady, N.Y. (50,000 to 100,000); Hamtramck, Mich. (25,000 to 50,000)[1]; Wilmette, Ill. (10,000 to 25,000); and Ely, Minn. (less than 10,000).

Considerable improvement was noted in the police phases of enforcement, particularly in the areas of personnel increases and selective enforcement.

Both Los Angeles and Chicago, assisted by the Traffic Division of the International Association of Chiefs of Police, reorganized their traffic control programs. Los Angeles increased its general police budget by $3,000,000 for purchase of new equipment and addition of 1,170 officers, a portion of which would be assigned to traffic. Traffic personnel was increased 70%.

Chicago reorganized its control program, including court handling of traffic cases, in an effort to reduce deaths and injuries. Traffic personnel was being increased from 569 to 1,040. The city planned to spend approximately $5,000,000 for enforcement during 1948.

The American Bar association took the lead in the work of improving court handling of traffic cases. Working with the Northwestern University Traffic institute as co-sponsor, the association held regional conferences for traffic court judges and prosecutors for the purpose of acquainting them with modern problems of enforcement and adjudication. Funds for the program were provided by the Kemper Foundation for Traffic Safety.

The state of New York established a division of safety under the direction of Thomas W. Ryan. Its purpose was to coordinate safety efforts of government departments with other interested organizations and agencies in a state-wide co-operative safety effort.

Organization of the California highway patrol as a separate state agency, recommended by the International Association of Chiefs of Police Traffic division in a survey of the state's law enforcement agencies in 1946, was accomplished in October. Clifford E. Peterson was named commissioner.

A comprehensive survey of safety education programs in colleges and universities was undertaken by the National Commission on Safety Education. The study also outlined best methods of initiating safety activity, particularly those organized as special bureaus of public safety.

The National Committee on Uniform Traffic Laws and Ordinances was organized during 1947. Its purpose was to make periodic reviews of the Uniform Vehicle code and the Model Traffic ordinance—the recognized national standards for state and municipal traffic legislation.

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[1] Hamtramck's population is approximately 50,000. It was placed in the 50,000 to 100,000 population group for the National Traffic Safety contest; in the lower group for the National Pedestrian Protection contest.

The Uniform Laws division of the Automotive Safety foundation conducted pilot studies for cities and states wishing to determine how their traffic laws conform with national standards. Representative states and cities which had such comparative analyses made during 1947 were Michigan, Indiana, Arizona, New York city, Lansing, Mich., and Lafayette, Ind. A similar study was made of the Model ordinance for Colorado cities under the sponsorship of the Colorado Municipal league.

Twenty-nine colleges and universities held training courses for motor vehicle fleet supervisors during 1947. Approximately 900 supervisors, having management of about 185,000 drivers of commercial vehicles, were enrolled.

The Inter-Industry Highway Safety committee was organized by the automotive and allied industries. Its purpose was to encourage dealer and sales representatives of these industries to assist and co-operate with state and local officials having legal responsibility for safety, and with all civic and business groups enlisted in the safety movement.

The Public Roads administration of the Federal Works agency reported that improvement of the nation's highways proceeded at a faster rate in 1947 than in previous years. Contract awards authorized by the states during the year called for $895,000,000 worth of work on 44,700 mi. of road. This was approximately $150,000,000 more than the cost of road construction contracted for in 1946.

The 1947 total included contracts for Federal-aid projects to cost $640,000,000 and involving 19,800 mi. of roads.

The Institute of Traffic Engineers appointed one of its members to the position of its first full-time executive secretary in April. The institute was planning a series of regional traffic engineering conferences to provide in-service training for highway and municipal engineers and others having responsibility for facilitation and safety of traffic movement. The first of the conferences was to be held at the University of Minnesota early in 1948. Others were to be held in Florida, Texas, southern California and Oregon.

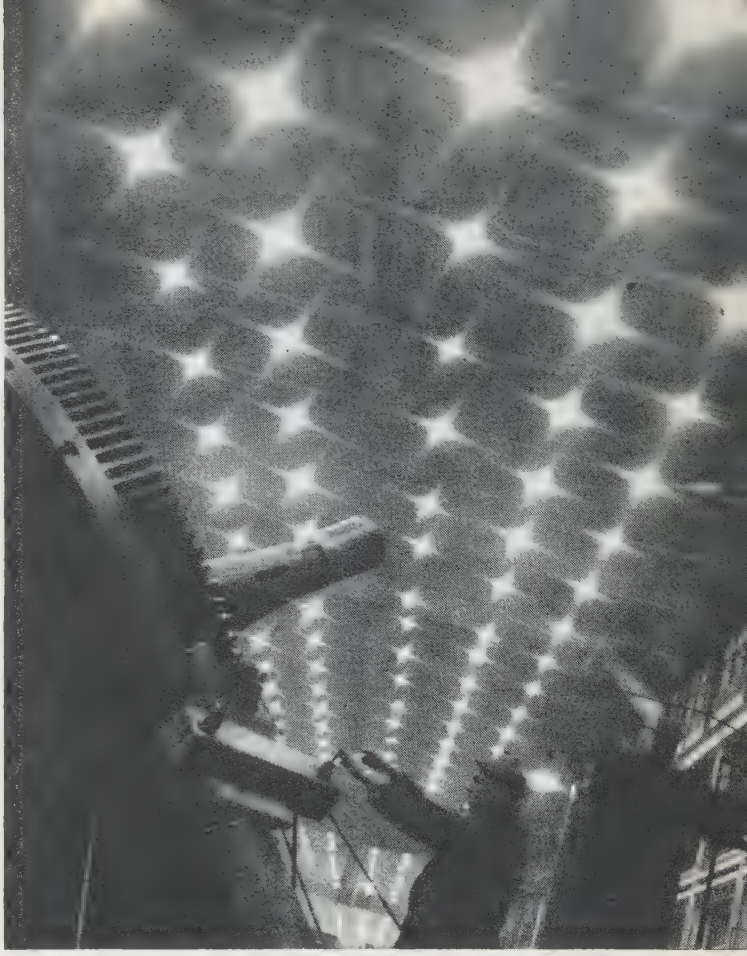
The Alfred P. Sloan Foundation, Inc., awarded a $15,000 grant to the Yale university Bureau of Highway Traffic for a special study of relationships, policies and technical practices of state and local agencies concerned with traffic administration. The grant would finance two research fellowships for the project, which would attempt to establish a more effective approach to the application of modern engineering techniques of street and road problems.

The Northwestern University Traffic institute finished its 11th year of training city and state police in specialized traffic control. Training of key army personnel was continued at the institute as part of the traffic phase of the army-wide safety program. Four courses had been held.

Work of the Traffic division of the International Association of Chiefs of Police was expanded to include administrative traffic engineering surveys and assistance in remodeling traffic legislation and courts, as well as routine traffic control installations.

Reorganizational work in Chicago, Los Angeles and Denver was the most important undertaken by the Traffic division during the year. The organization also worked with the Utah State Highway Patrol; and departments at Billings, Mont.; Salt Lake City, Utah; Portland, Ore.; Richmond, Calif.; Montgomery, Ala.; Jamestown, N.Y.; Fort Wayne, Ind.; Waterbury, Conn.; and Oakland County, Mich.

The I.A.C.P. regional training program was expanded. New York university, the University of Southern California and Georgia School of Technology co-operated in offering courses. (F. M. K.)



MERCURY VAPOUR LAMPS installed during 1947 at the Westinghouse Electric Corp. plant in Pittsburgh, Pa., creating an average of 45 footcandles of light near floor level to provide a maximum of safety against industrial hazards

**Canada.**—Industrial accidents cost Canada $48,200,000 in compensation and medical bills in 1946 (1945: $25,100,000). The 1946 figure was 375,804 accidents (1945: 331,483), of which 1,010 were fatalities (1945: 1,101).

Accidents on Canadian farms during the 12 months ended June 1, 1947, totalled 37,200 of which about half involved lay-offs from work of more than 3 weeks. Percentages were: 11.9% in the maritimes, 28.7% in Quebec, 24.1% in Ontario, 32.9% on the prairies, and 2.4% in British Columbia; 31.5% happened to farm people within the age group of 25-44 years and 25.3% in the group of 45-64 years; 56.2% happened in the six months May to October; 6.7% caused partial or permanent disability. About 600,000 man-hours were lost.

During the 16-year period ended Sept. 1947, 10,066 persons were killed and 175,168 were injured in automobile highway accidents in Ontario. Property damage amounted to $31,000,000. In 1947 the Ontario government took measures to control these fatalities by (1) stiffening the Highway Traffic act which provided suspension of licenses for 14 traffic offenses, (2) ordering the department of highways to conduct a vigorous educational campaign, (3) providing the provincial police with 300 cars having two-way frequency modulation radio equipment. Similar stiffening of highway traffic regulations in Manitoba reduced accidents 30.2% (1946: 1,914; 1947: 1,335). (C. Cy.)

**Great Britain.**—Eighty-eight people lost their lives and more than 220 were injured in railway accidents in Great Britain during the year. Aircraft accidents in Great Britain were responsible for 31 deaths. Although some improvement was shown in road accident statistics during the earlier part of the year, the total of 523 deaths in September was the highest for that month since 1942. Total killed and injured during the first 9 months was 125,166. On Oct. 7, the Committee on Road

Safety (chairman, G. R. Strauss, until September parliamentary secretary to the ministry of transport) presented its final report. Recommendations included periodical inspection of all motor vehicles, and penalties for pedestrians and cyclists guilty of traffic offenses.

(*See* also DEATH STATISTICS; DISASTERS; INDUSTRIAL HEALTH.) (J. LN.)

## Acheson, Dean Gooderham

(1893– ), U.S. government official, was born on April 11, in Middletown, Conn., and received a law degree from Harvard in 1918. He served as a naval ensign in World War I and later became private secretary to Louis D. Brandeis, associate justice of the U.S. supreme court. He then engaged in law practice. In Feb. 1941 he was appointed assistant secretary of state, and with the formation of the United Nations Relief and Rehabilitation administration in 1943, Acheson became the U.S. member of its council. After the resignation of Joseph C. Grew, Acheson was named (Aug. 16, 1945) to succeed him as undersecretary of state.

In 1947, Acheson became one of the foremost champions of the Truman doctrine, and in a statement before the house foreign affairs committee on March 20, he discounted the possibility that implementation of the administration's Greek-Turkish aid program would lead to war, declaring that failure to make the doctrine effective might lead to conflict. In subsequent statements, Acheson called for extension of the administration's authority to embargo exports to certain foreign countries (May 8) and blamed (June 15) Russia's "pursuit of policies diametrically opposed to the very premises of international accord" for retarding world recovery.

Acheson left the government's service to return to his private law practice on June 30.

**Actors and Acting:** *see* THEATRE.

## Aden.

A British colony in southwest Arabia, including Perim Island in the strait of Bab-el-Mandeb and the Kuria Muria islands, five in number, off the Dhufar coast of Oman. Area (Aden and Perim): 80 sq.mi.; pop. (1946 census): 86,309. The Aden protectorate (western and eastern) covers an area of about 112,000 sq.mi.; pop. (estimated): 630,000. Languages: English and Arabic (Indian languages and Somali also spoken in the colony); religion: predominantly Moslem. Governor: Sir Reginald S. Champion (appointed 1944).

**History.**—Much attention was given to housing and town-planning in the colony during 1947. In July 1947 it was announced that 57 licences had been given for the construction and reconstruction of houses in Aden and 4 for the erection of new temporary buildings. A grant of £27,500 was approved under the Colonial Development and Welfare act toward the cost of constructing working-class dwellings. In educational matters, the project for the establishment of a new ("Lord Lloyd") college in the protectorate proceeded somewhat slowly. The British council felt themselves compelled, for financial reasons, to withdraw from the scheme; but later in the year a grant of £100,000 for its support was sanctioned under the Colonial Development and Welfare act.

**Finance and Trade.**—The monetary unit in the colony is the Indian rupee (30.17 U.S. cents in 1947); in parts of the protectorate the Maria Theresa dollar is also used. Revenue in the colony (1946–47 estimated): Rs. 99,50,000, expenditure Rs. 94,04,000. In the protectorate: expenditure for 1946–47 was estimated at £305,150. Imports (1945) were valued at £11,536,000 and exports at £5,838,000. There is no public debt. (J. E. SH.)

**Adjusted Compensation:** *see* VETERANS' ADMINISTRATION.
**Adult Education:** *see* EDUCATION.

## Advertising.

Advertising in 1947 was marked by increased volume that reflected the unprecedented business activity in the United States. Expenditures for 1947 and 1946 were estimated as follows:

*Advertising Expenditures**
(Millions of Dollars)

| | 1947 | 1946 |
|---|---|---|
| Newspapers | $1,302.1 | $963.8 |
| Radio | 485.1 | 489.5 |
| Magazines | 464.7 | 402.7 |
| Direct mail | 324.8 | 278.8 |
| Trade and business papers | 207.4 | 178.0 |
| Outdoor | 110.8 | 85.9 |
| Farm papers | 47.0 | 35.7 |
| Miscellaneous | 762.4 | 654.5 |
| Total | $3,704.3 | $3,088.9 |

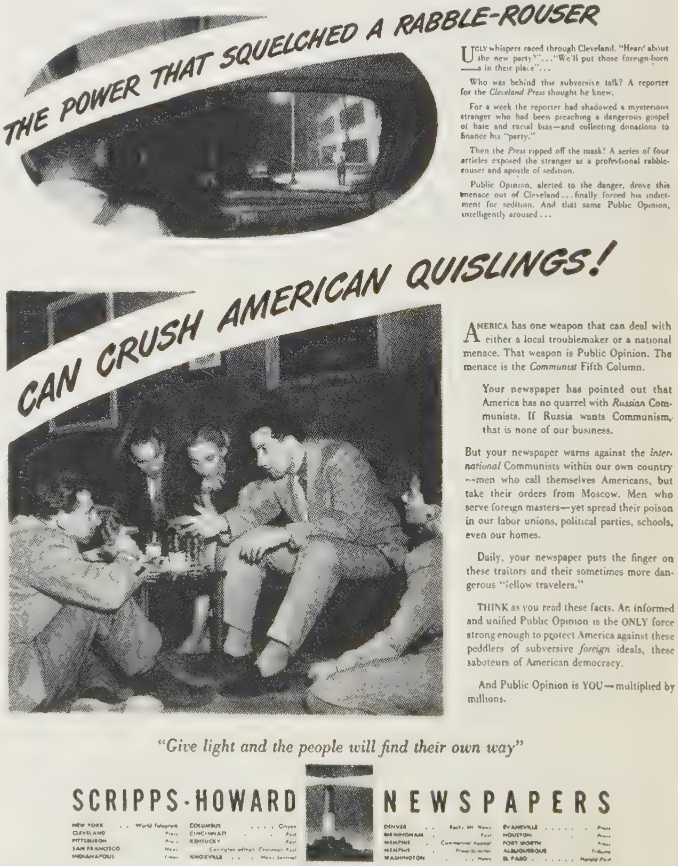
*Estimates by Hans Zeisel, McCann-Erickson, Inc.

The increase was caused to some extent by rises in rates and changes from black and white to colour in publication advertising. Although volume was higher than ever before, students of advertising speculated upon the fact that the proportion of national income spent for advertising in 1947 was only 1½%, whereas the $2,600,000,000 spent in 1929 represented 3%.

Advertising was marked during 1947 by competitive selling that had been largely absent during World War II. It became more competitive not only in the more direct selling appeals used, but also in the devices employed. Increasing use was made of premiums and contests, for example.

Costs of advertising continued to rise. A typical advertiser who spent $1,000,000 for magazine advertising in 1945 found that he had to budget $1,300,000 in 1948 to secure the same number of pages in the same magazines, because both space charges and costs of mechanical preparation had risen.

After several months of research, a joint committee of the Association of National Advertisers and the American Asso-



THE POWER THAT SQUELCHED A RABBLE-ROUSER
CAN CRUSH AMERICAN QUISLINGS!

UGLY whispers raced through Cleveland. "Heard about the new party?"..."We'll put those foreign-born ——s in their place"...

Who was behind this subversive talk? A reporter for the *Cleveland Press* thought he knew.

For a week the reporter had shadowed a mysterious stranger who had been preaching a dangerous gospel of hate and racial bias—and collecting donations to finance his "party."

Then the *Press* ripped off the mask! A series of four articles exposed the stranger as a professional rabble-rouser and apostle of sedition.

Public Opinion, alerted to the danger, drove this menace out of Cleveland...finally forced his indictment for sedition. And that same Public Opinion, intelligently aroused...

AMERICA has one weapon that can deal with either a local troublemaker or a national menace. That weapon is Public Opinion. The menace is the *Communist* Fifth Column.

Your newspaper has pointed out that America has no quarrel with *Russian* Communists. If Russia wants Communism, that is none of our business.

But your newspaper warns against the *international* Communists within our own country—men who call themselves Americans, but take their orders from Moscow. Men who serve foreign masters—yet spread their poison in our labor unions, political parties, schools, even our homes.

Daily, your newspaper puts the finger on these traitors and their sometimes more dangerous "fellow travelers."

THINK as you read these facts. An informed and unified Public Opinion is the ONLY force strong enough to protect America against these peddlers of subversive *foreign* ideals, these saboteurs of American democracy.

And Public Opinion is YOU—multiplied by millions.

*"Give light and the people will find their own way"*

SCRIPPS-HOWARD NEWSPAPERS

NEW YORK . . . World Telegram
CLEVELAND . . . Press
PITTSBURGH . . . Press
SAN FRANCISCO . . . News
INDIANAPOLIS . . . Times
COLUMBUS . . . Citizen
CINCINNATI . . . Post
KENTUCKY . . . Post
Covington edition Cincinnati Post
KNOXVILLE . . . News Sentinel
DENVER . . . Rocky Mt. News
BIRMINGHAM . . . Post
MEMPHIS . . . Commercial Appeal
MEMPHIS . . . Press-Scimitar
WASHINGTON . . . News
EVANSVILLE . . . Press
HOUSTON . . . Press
FORT WORTH . . . Press
ALBUQUERQUE . . . Tribune
EL PASO . . . Herald-Post

ONE OF A SERIES of advertisements sponsored by the Scripps-Howard newspapers and selected by the Annual Advertising Awards jury as contributing most to the advancement of advertising as a social force during 1947 ciation of Advertising Agencies announced a program of advertising to promote understanding of the U.S. economic system. Subsequently the Advertising council announced that it would help put this program into effect.

Shortage of paper continued to be a limiting factor in the development of European advertising. In England, France and several other countries, it remained still impossible to buy much advertising space in the newspapers. Schedules had to be placed on a problematical basis, with size of individual advertisements strictly limited. Equipment for outdoor advertising suffered badly, and metal sheets to replace panels destroyed were largely unavailable. Printing presses of the continent had insufficient parts available to keep them in good condition. In spite of these many drawbacks, however, volume of European advertising was increasing.

Many European advertising agencies disappeared completely during World War II or were greatly harmed by it. Although conditions were generally improved, countries such as Poland, Yugoslavia and Rumania were still unable to handle U.S. advertising as the year ended.

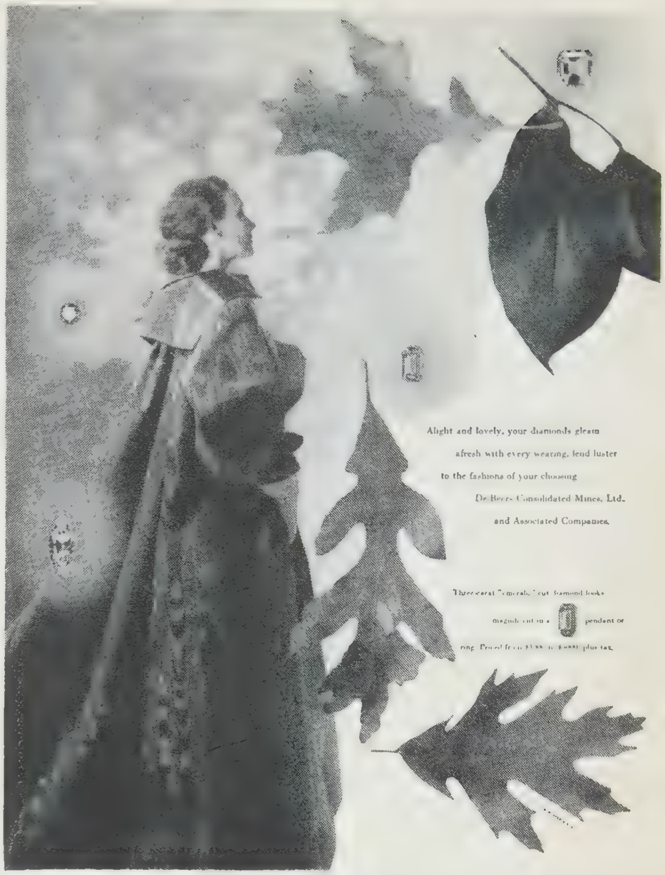
**Newspapers.**—The Bureau of Advertising of the American Newspaper Publishers association estimated that national advertising placed in U.S. newspapers during 1947 amounted to $372,000,000, or $102,000,000 more in dollar volume than for 1946. In a study of the readership by women of 979 grocery advertisements, conducted by the bureau, it was found that newspaper advertisements with dominant illustrations were better read than those with incidental illustrations, that those with photographic illustrations received better readership than those using wash or line drawings, that those with dominant reverse plate areas were less effective than those with positive treatment. The average readership of advertisements with food illustrations was 50% higher than that of the other advertisements.

In the move for more postwar advertising, weeklies were joining the Audit Bureau of Circulations at a faster rate than before. It was announced that 556 of them had enrolled and that applications were in from 147 others, so they were outnumbered only by the 1,117 daily newspapers represented in the bureau.

In the competition to retain their share of the advertising dollar, newspapers were turning to the use of colour. At the start of 1947, it was estimated that only 398 daily newspapers were equipped to accept advertising in at least one colour besides black; of these, 156 could reproduce two colours in addition to black and white and 86 the maximum three additional colours. It was estimated that by the end of the year approximately 500 newspapers were equipped to print in colour. Of the newspaper presses on order, colour printing was specified in 90%. (*See* also NEWSPAPERS AND MAGAZINES.)

**Radio.**—In 1947 radio ownership, multiple-set ownership and total radio listening in the U.S. were at all-time peaks, as the radio manufacturers were establishing all-time production records. Columbia Broadcasting system stated, on the basis of a survey, that 35,900,000 homes in the United States, or 93% of all, had 52,500,000 operating receivers, exclusive of automobile and portable radios. One out of every three families had more than one radio, an increase of 89% over figures for 1944. Two sets for each family instead of one increased listening 28% or 62 minutes a day, according to CBS. With one set, the family devoted 223 minutes a day to listening; with two sets, 285 minutes.

The year saw accentuation of trends that had been apparent in commercial radio after the end of World War II. There was a general swing back to less expensive shows. Creation of programs was being taken up increasingly by the networks, with the agencies and clients tending to control the various elements of the programs. Another trend was toward transcribed programs. Surveys showed listener indifference as to whether or not a show was transcribed and a wide general acceptance of transcribed programs by local stations with a strong dependence upon them for programming. The "disc jockey," or radio commentator whose chief task is to play records, came into prominence. Another trend was for cigarette companies to buy time during the day in an effort to reach more women. Still another development was the use of limited networks for supplemental campaigns, the introduction of new products, trials of new programs, and so on.

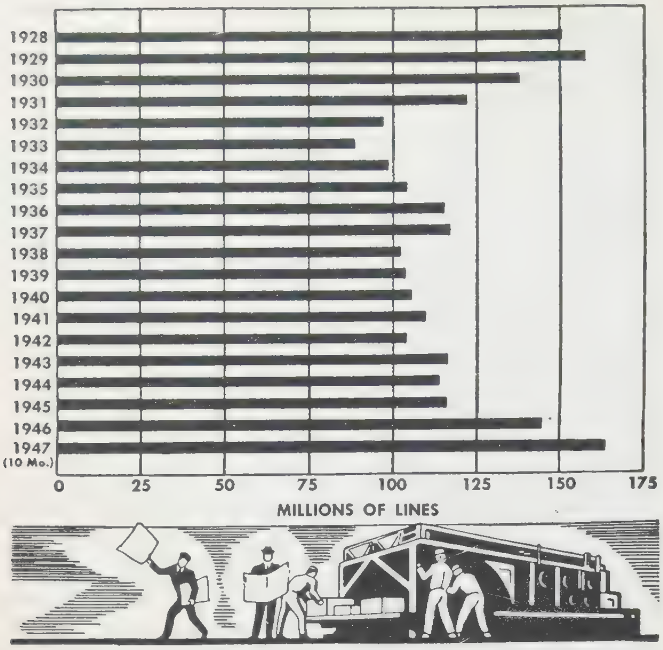


Alight and lovely, your diamonds gleam
afresh with every wearing, lend luster
to the fashions of your choosing
De Beers Consolidated Mines, Ltd.
and Associated Companies.

DIAMOND ADVERTISEMENT (original in colour) prepared for De Beers Consolidated Mines, Ltd., adjudged the most technically distinguished of 1947 by criteria of visual presentation (layout, art, typography)

There was widespread criticism of radio commercials. One move by the industry to offset this criticism was the proposal by the National Association of Broadcasters of a code of standards. If adopted, this would reduce advertising on the air from 3% to 20%. The code proposed the following reforms: (1) a stipulation that no 15-minute program contain more than three minutes of commercials; (2) the placing of only one commercial spot announcement between regularly scheduled programs; (3) a ban on any commercial announcement in the middle of a news broadcast less than 15 minutes long; (4) an unqualified prohibition on the dramatization of political or other controversial issues.

In March the Broadcast Measurement bureau's Area Audience Report was received by its subscribing stations and members of the American Association of Advertising Agencies and the Association of National Advertisers. A project upon which the BMB had been working from 1945, the 780-page book showed audiences of 800 radio stations in 3,500 United States and Canadian counties and in 1,200 cities. BMB also reported 575 subscribers as of Jan. 1, 1948, including 568 stations, 4 national and 3 regional networks.



NEWSPAPER ADVERTISING (total linage in 52 cities of the United States): average per month. Compiled by Media Records, Inc.

A study of merchandising aids offered by radio covered 535 amplitude modulation (AM) stations in cities of 50,000 population or more and revealed that 73% of these stations offered some form of merchandising assistance, the most common form consisting of notification of distributors and dealers of advertising campaigns and providing advertisers with market data.

Facsimile broadcasting, bringing a small printed newspaper broadcast directly into the family living room, grew in importance as a form of news dissemination. A facsimile set produces on a roll of sensitized paper the same shades of black and gray that appear on the original copy at the broadcasting station. It permits the transmission of pictures as well as copy at the rate of 500 words a minute. (*See* also RADIO.)

**Television.**—Television made great strides during the year. As of Jan. 1, 1948, there were approximately 170,000 sets in operation in the United States, compared with 8,000 a year before.

A survey made for General Foods corporation studied television audiences in the New York city area, where it was estimated that 64% of television sets were situated. It was found that 71% of owners called their sets "wonderful," that an average family owning television in New York had a set with a seven-inch or ten-inch screen and had owned the set from 4 to 12 months. The family was composed of 3.3 persons, had an average evening audience of 3.47 persons for each viewing set. Average tune-in was 17 hours a week. First preference of the audience in respect to programs was for more new movies. Sponsor identification of seven programs checked by the coincidental method was 68%. (*See* also TELEVISION.)

**Magazines.**—An estimate by the Magazine Advertising bureau put 1947 as the greatest year in the history of magazine advertising. The 101 general and 11 national and regional farm magazines reported upon (Sunday supplements excluded) were estimated to have gross advertising revenue of $440,000,000, a figure $59,000,000 higher than in 1946 and nearly twice as high as the total advertising volume carried in magazines in 1943.

In July the bureau reported on individual advertisers of the previous year. In 1946 there were 57 advertisers who spent $1,000,000 or more in the nation's magazines, as against 49 in 1945, 27 in 1942 and 24 in 1939. These 57 advertisers invested $113,200,000 in magazine advertising during 1946.

In Jan. 1948 the bureau released the first report on its Nationwide Magazine Audience Study. It showed that 68.9% of all persons 15 years old or more in the United States, both urban and rural areas, read at least one magazine, and in 82.5% of all families at least one individual was a magazine reader. Hence, it was said, magazines had an audience of more than 75,000,000 persons and 31,000,000 families. The report showed that 89% of all individuals with high school or college education read magazines.

Magazines continued to expand in other countries. *World Horizons,* the first of a projected overseas chain of 55 magazines affiliated with *United Nations World,* appeared in May 1947 in Sweden. Other overseas editions were planned for France, Great Britain, Uruguay, Mexico. Macfadden Publications, Inc., announced that after World War II it had established or re-established 9 overseas editions out of a total of 15 planned, and announced that they shortly would be taking U.S. advertising. Beginning with the 1948 February edition, *The Reader's Digest* planned to publish a special edition for South Africa to carry advertising. Crowell-Collier Publishing company announced it was planning to issue a multilingual international magazine to be prepared editorially in New York city, then translated into foreign languages and printed and distributed in other areas of the world by local publishers.

The first report of the Continuing Study of Farm Publications was issued by the Advertising Research foundation. It measured the readership of *The Ohio Farmer* and was sent to advertisers, agencies and publishers. Subsequent reports studied *The Washington Farmer* and *Successful Farming.* Among matters studied were number of readers per subscriber family, readership of individual advertisements and editorial features, subscribers' acreage, livestock and crops.

The average circulation per issue during the first six months of 1947 for 249 magazine members of the Audit Bureau of Circulations was 163,118,748, compared with 161,022,740 for 1946 and 100,044,196 for 1940. A survey showed that approximately 40,000,000 copies of comics magazines were sold each month, at a cost of some $4,000,000.

The Hulton Readership survey was conducted in Great Britain for the first time since before the war. It was an analysis for advertisers of the readers of British national, seminational and local morning and evening daily newspapers; local weekly and biweekly newspapers; national and seminational Sunday newspapers; and fortnightly and monthly magazines. The analysis was by region, sex, age, social class and other characteristics. It estimated a total population of 35,800,000 aged 16 and more as readers, and that percentages of this population reading the various types of periodicals were as follows: national morning newspapers, 78.3%; national Sunday newspapers, 89.9%; evening newspapers, 66.6%; local weeklies or biweeklies, 56.5%; general weekly magazines, 70.3%; general monthly magazines, 29.0%.

**Direct Advertising.**—An estimate by the Direct Mail Advertising Association, Inc., put U.S. direct advertising expenditures in 1947 at $750,000,000, with approximately half of this in direct mail. Its definition of direct advertising included direct mail and all unmailed printed promotion such as product literature, dealer helps, printed point-of-sale material, house organs, catalogues, printed public relations materials, annual reports, package inserts, calendars, letters. A year-end survey by the association stated that 70.8% of the reporting firms declared that they would increase their budgets for direct advertising in 1948, with 27.8% planning the same expenditure as in 1947 and 1.4% expecting to spend less.

The association, with a membership of 1,500 companies, announced the establishment of a new advisory board to promote the more effective and extensive use of direct advertising in all parts of the United States.

**Trade and Business Papers.**—The Business Paper Advertising competition conducted by the Associated Business Papers included 912 campaigns represented by 2,736 individual advertisements, or 163 more entries than in 1946. Judges expressed concern over the large number of entries in which the advertiser made no effort to check effectiveness of his advertising and the lack of continuity in advertising campaigns.

The National Conference of Business Paper Editors changed a 29-year-old rule to admit editors of publications not members of the Associated Business Papers group.

In April it was announced that in 1946 U.S. manufacturers had used approximately 25,000 pages of advertising in U.S. business and class magazines in the export field. The information was based upon a survey among 26 U.S. companies publishing magazines in the export field.

**Outdoor Advertising.**—National outdoor advertising in 1947 was estimated as 26.3% greater in volume than in the previous year. Equipment was being expanded as materials became available, and it was expected that there would be sufficient facilities in 1948 to take care of the 19% increase in business with which the year opened.

Traffic Audit Bureau, Inc., published a study of outdoor advertising in Ft. Wayne, Ind., a city chosen as typically U.S. It was the first TAB study since the war.

A total traffic or gross outdoor advertising circulation increase of 37.6% compared with 1939 was recorded by the TAB study. Passenger automobiles constituted 82.3% of total vehicular traffic; trucks, 13.1%; other vehicles, 4.6%. It was found that 76% of persons more than 14 years old go outdoors daily, and that 35% of the trips are in connection with jobs, 22.6% for social purposes, 14.7% for shopping, 8.1% to go to church, 4.8% to attend school and 14.8% for other reasons. Of a total of 3,547 trips analyzed, 47.2% were by automobile only and 20.2% by foot only.

**Transportation.**—Volume of transportation advertising was $23,000,000 in 1947, or 7% higher than in 1946, according to an estimate by the National Association of Transportation Advertising, Inc. Rate increases accounted for more than half of this increase. The volume was divided almost equally between local and national advertising, both classifications showing same percentage of increase.

A major development during the year that helped account for some of the gain was standardization of sizes and additional installations of travelling displays on the outside of transit vehicles.

Bibliography.—Albert Wesley Frey, *Advertising;* Henry Clay Gipson, *Films in Business and Industry;* E. A. Lever, *Advertising and Economic Theory;* Nine Nieman Fellows, 1945–46, *Your Newspaper;* John Lund, *Newspaper Advertising;* Robert Stone, *Profitable Direct Mail Methods;* Llewellyn White, *The American Radio.* (D. St.; R. A. Bn.)

**Aerial Photography:** *see* Photography.
**Aeronautics:** *see* Aviation, Civil; Aviation, Military.

## Afghanistan.

A Moslem kingdom lying between U.S.S.R. (N.), China and India (E.), Pakistan (S.) and Iran (W.). Area: *c.* 270,000 sq.mi.; pop. (est. 1946): 12,000,000. Chief towns (pop. est. 1946): Kabul (cap., 206,200); Kandahar (77,200); Herat (75,600); Mazar (41,900). Language: Persian, Pashtu; religion: Mohammedan. Ruler: Mohammad Zahir Shah; prime minister: Sardar Shah Mahmud.

**History.**—The change of cabinet that took place in 1946, after a period of 17 years without change, led to the proclamation of a general amnesty for political prisoners and the setting up of a high court of justice for the trial of future political offenders. Because of close ties of kinship and common cultural tradition, Afghanistan was deeply concerned over the question of the right to self-determination of the Afghans of the North-West Frontier province of India, arising from the creation of the separate independent states of India and Pakistan. Afghanistan sent an observer-delegate to the Geneva meetings of the U.N. Conference on Trade and Employment. (A. R. Pk.)

**Education.**—1946: schools 369, pupils *c.* 100,000; the University of Kabul was extended to five faculties.

**Finance.**—1946: currency, Rs. 3.95 (Afghan) = Rs. 1 (Indian) = 30.23 U.S. cents.

**Trade and Communication.**—Foreign trade: exports (1945–46) Rs. 718,431,373; exports to Great Britain (1946) Rs. 294,030; imports from Great Britain (1946) Rs. 1,696,840. Roads (1947): motor roads 5,107 mi., caravan roads *c.* 1,500 mi. At the beginning of 1947 there was one radio broadcasting station, at Kabul.

**Agriculture.**—By 1945 one-fifth of the soil was under cultivation. Production for export, 1945–46 (in short tons): dried fruit 44,000; wool 7,700; cotton 4,400; karakuls 2,400,000 skins.

**A. F. of L.:** *see* American Federation of Labor.
**Africa:** *see* British East Africa; British South African Protectorates; British West Africa; French Overseas Territories; Italian Colonial Empire; Portuguese Colonial Empire; South Africa, The Union of; Spanish Colonial Empire; Trustee Territories, etc.
**Agricultural and Industrial Chemistry, Bureau of:** *see* Agricultural Research Administration.
**Agricultural Machinery:** *see* Agriculture.

## Agricultural Research Administration.

Established in 1941 to direct and co-ordinate research in the United States department of agriculture, the Agricultural Research administration comprises seven agencies whose functions are the conduct of research and certain regulatory activities based on research. The component agencies are the bureaus of agricultural and industrial chemistry; animal industry; dairy industry; entomology and plant quarantine; human nutrition and home economics; plant industry, soils and agricultural engineering; and the office of experiment stations.

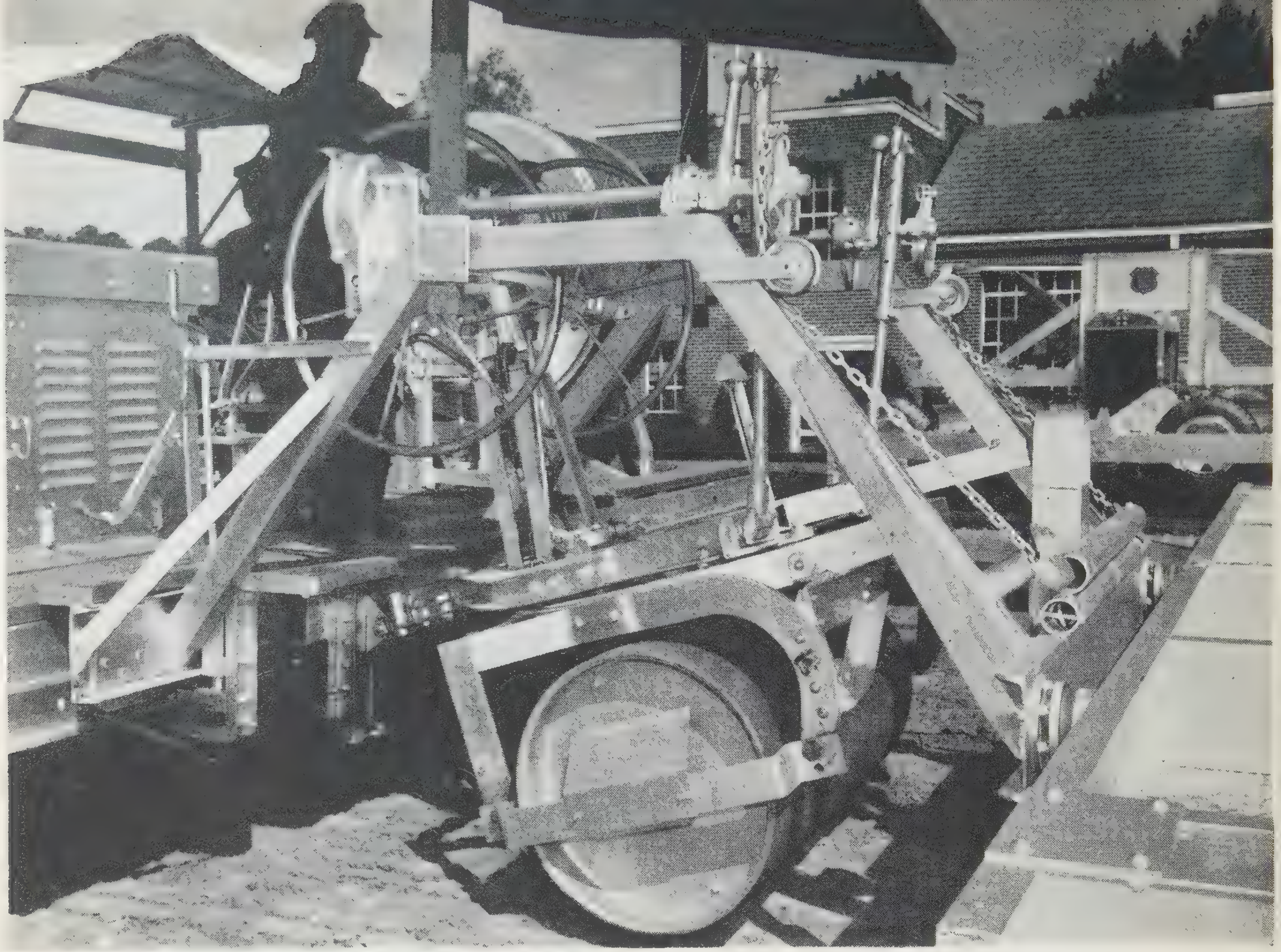
The congress of the U.S. in 1947 provided funds to put into effect the provisions of the Research and Marketing act of 1946. The ARA has responsibility for planning and carrying out much of the research to be done under the act, in co-operation with state agricultural experiment stations and other research agencies. Many projects were set up and work was begun on a large number in 1947.

Several years of intensive research by the bureau of agricultural and industrial chemistry reached fruition in 1947 in the successful operation of a continuous-process turpentine still. Gum from southern pine trees, diluted with turpentine and heated to 350° F., is sprayed continuously into a chamber at the top of a 20-ft. vertical pipe, where the turpentine in the gum vaporizes and the rosin flows downward. The new-type still uses less than two-thirds as much steam as the conventional batch-type still and requires only half as much labour to operate, while the products are of a more uniform quality.

A method for utilizing soybean protein as an adhesive in the manufacture of casings for shotgun shells was put into commercial practice after being devised by bureau scientists.

It was shown that farmers can keep home-rendered lard fresh in home storage for a year or more by adding 2 or 3 lb. of hydrogenated vegetable fat to each 50 lb. of lard at the time of rendering.

Biochemists at the Southern Regional Research laboratory



SOIL FITTING CAR used by the U.S. department of agriculture in 1947 to condition soil for experimental purposes at its field laboratory in Auburn, Ala.

found that the pigments of cottonseed can readily be separated from the oil and meal by solvents. Removal of the pigments improves the quality of the meal as a livestock feed and for other uses.

During 1947, advances were made by the bureau of animal industry in showing further the possibilities of hybridization of farm animals. Hybrid hogs produced large litters of pigs that made fast and economical gains. In poultry breeding, 65 lines of inbred poultry were made ready for experiments in crossing.

It was shown that losses of poultry from Newcastle disease can be considerably reduced through the use of vaccines. Average production of eggs by turkeys of the Beltsville Small White breed was increased experimentally through selective breeding. This was a promising development, because higher egg production tends to reduce the cost of turkey poults, an important economic factor in turkey raising.

A compound of benzene hexachloride, xylol and pine oil, introduced into the ears of cattle infested with the spinose ear tick, killed the ticks and protected the cattle against reinfestation for about 3 weeks. Toluene (methyl benzene) was found to be effective for removing internal parasites from several kinds of animals.

Feeding experiments by the bureau of dairy industry showed that dairy heifers can be successfully raised from 10 months to 2 years of age without any grain in their ration provided they are given all the good-quality hay and other roughage they will eat. This reduces by half the amount of grain formerly thought necessary for proper development of the dairy heifer during this period.

A test developed earlier for determining whether Cheddar cheese had been made from raw or pasteurized milk was improved and adapted in 1947 for application to practically all milk products, including cheeses of all kinds, butter, buttermilk, ice creams and sherbets and milk drinks. It is possible through the use of this test to determine, for the protection of the public, whether milk used in one of these products has been properly pasteurized. A variation of 1° F. below the standard in the pasteurization temperature used can be detected.

A method was developed for recovering protein from cheese whey, 7,000,000,000 lb. of which is fed to livestock or wasted annually in the U.S. Each 100 lb. of whey yields $3\frac{1}{2}$ pounds of protein.

A number of new insecticidal materials were tested against insects in fields and greenhouses in 1947 by the bureau of entomology and plant quarantine. Chlorinated camphene, hexaethyl tetraphosphate and tetraethyl pyrophosphate each showed promise of being effective for controlling certain insect species. Chlordane proved toxic to grasshoppers and roaches. Aerosol formulations containing hexaethyl tetraphosphate were found to be more effective against some greenhouse pests than aerosols containing DDT. Benzene hexachloride continued to show promise against certain cotton pests.

Many of the compounds under test as insecticides were found to have the advantage over standard materials of being effective in very small—in some cases minute—quantities.

In connection with studies of bees, it was found that the bacterium which causes the bee disease American foulbrood produced a substance that inhibited the growth of organisms causing a number of human and animal diseases. The National Institute of Health entered into co-operation with the bureau in studies to determine the medical importance of this possible new antibiotic.

An important regulatory activity of the bureau of entomology and plant quarantine in the last few years was the inspection of aeroplanes at ports of entry into the U.S. In 1947 harmful insects and plant matter that carried infection were found on more than ¼ of the 58,500 planes inspected.

Three years of research by the bureau of human nutrition and home economics resulted in 1947 in the publication of new directions for home canning of 12 low-acid vegetables in pressure canners. Processing periods 25% to 50% shorter than previously recommended were shown to be safe for a number of these vegetables. This meant a saving of time and fuel for the home canner, as well as better flavour, texture and vitamin value of the canned food.

The protein values of several important food grains were compared by nutritionists of the bureau. Rolled oats were found equal or superior to all the other grains tested, both in quality and quantity of protein. Rice, though lowest in quantity of protein, was equal to oats in protein quality. Rye, whole wheat, barley and corn followed, in that order, in nutritional quality of protein.

Work on fibres and fabrics was advanced through studies on cotton, wool and synthetic fibres. It was shown that elastic recovery of fabrics cannot be predicted from that of the yarns from which they are made. For example, nylon yarn has greater elasticity than wool, but nylon fabric does not have as much stretch as a similar wool material.

A series of publications on planning, constructing or remodelling, and equipping farmhouses for greater comfort and efficiency was begun co-operatively by the bureaus of human nutrition and home economics, and plant industry, soils and agricultural engineering. Three bulletins were issued, one on how to plan remodelling, one providing cut-outs to aid in planning and one on easy-to-build kitchen cabinets.

Plant breeding, control of plant diseases, the study of soils, the influence of fertilizers on plant growth and farm machinery are the major fields of research of the bureau of plant industry, soils and agricultural engineering. Many of its investigations are carried on in co-operation with one or more of the state agricultural experiment stations.

Each year a number of new varieties of crop plants, promising higher yields and better disease resistance, are released to growers. Among the new varieties of 1947 were an early peach for the southeast, a new sugar cane that will not lose its sugar content when held in the field for a considerable time, a sugar beet for the west that is resistant to curly top disease and yields a high percentage of sugar, new hybrid corns with desirable characteristics for certain localities or purposes, a new variety of oats for New York that is well suited to combine harvesting, improved cotton varieties, a strawberry high in vitamin C (ascorbic acid), a Lima bean that produces well in hot weather, a midwinter lettuce for the southwest and a disease-resistant white cabbage.

A new kind of nitrogen fertilizer was developed which becomes available to plants more slowly because of a slow rate of solubility. A combination of urea and formaldehyde (both of which unfortunately are scarce at present), it was named "Uraform." Because it supplies nitrogen at a uniform rate over a long growing period and does not leach out of the soil easily, it promised to eliminate the need for additional fertilizer applications during the growing season.

Spraying equipment was designed to facilitate the application of the herbicide 2,4-D from aeroplanes to kill weeds in grain crops without using great quantities of water, which had been a limiting factor in spraying from the air.

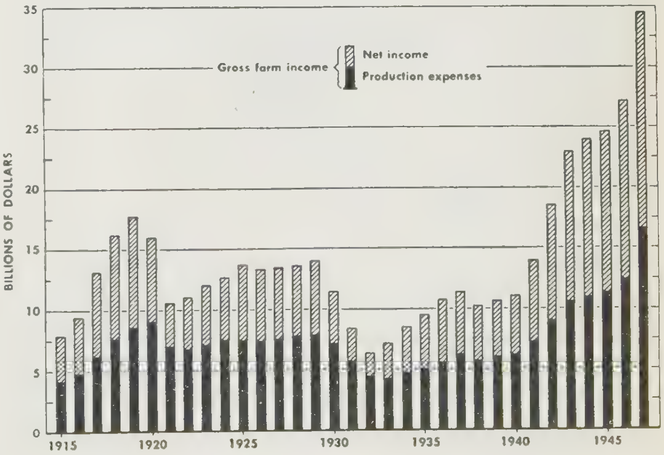
The office of experiment stations administers federal grants to the state agricultural experiment stations. State stations were granted $7,206,208 of federal money in the fiscal year 1947, under which more than 3,300 research projects were active. The Research and Marketing act of 1946 expanded the responsibilities of the office in 1947. (W. V. L.)

## Agriculture.

A new high record of prosperity was attained by United States agriculture in 1947 in income although total production was about equal to the record years 1944 and 1946. The assets of the industry were estimated by the U.S. department of agriculture on Jan. 1, 1947, at $111,209,000,000, the largest in history, and gross income in 1947 at $34,600,000,000. Total assets at the end of 1947 were even higher but exact estimates would not be available until midyear 1948. The year was characterized by indications of a turn downward in livestock and crop production while prices rose to new record heights; demand for farm products continued unabated at home and abroad. The postwar decline, so long feared by farmers, did not arrive and government appeals for continued maximum production of most crops were repeated for the ninth successive year. No such long-continued period of farm prosperity had ever occurred in the country's history.

The world food crisis continued and became even more acute in the second half of the year, creating world-wide political and economic problems for governments. From early spring numerous agencies, national and international, began surveys and warnings of the vital importance of feeding the distressed peoples as an essential to peace and to prevent revolution and political chaos. (*See* FOOD SUPPLY OF THE WORLD.) U.S. farmers at first were cautious, however, and seemed inclined to retrench their operations. The total acreage had declined from the peak in 1944 through 1945 and 1946. While the cultivated area expanded in 1947, it did not quite reach the level of 1944. Food grains production was the largest on record but livestock feed grains were the smallest after 1939. This was not planned by producers but was the result of unfavourable weather for the corn crop. This decline in feed grains combined with high prices of all feeds caused a further decline in livestock production which began in 1945. The significant changes in 1947 briefly summarized were: record crops of wheat, rice, peanuts, sugar beets and pears; below-average crops of corn, barley, rye, cotton, sweet potatoes, sugar cane. Other crops were near record in size or about the average of recent years. In livestock the changes were: heavy marketings of beef cattle, a slight recovery in hog production, continued decline of sheep and lambs, dairying and poultry raising showing little change. Farm prices reached new peaks for all crops and livestock except fruits. Farm debts were paid and large balances were accumulated by farmers in cash bank deposits, bonds and investments.

**Crop Production.**—Total U.S. crop production in 1947 as estimated by the U.S. department of agriculture was slightly



GROSS FARM INCOME: net income and production expenses of U.S. farm operators, 1915–47, including government payments beginning in 1933. Compiled by the U.S. bureau of agricultural economics. 1947 data are tentative estimates

Table I.—*Index Numbers of the Volume of Agricultural Production through Two War Periods**

(1935–39 = 100)

| | 1915 | 1920 | 1925 | 1930 | 1935 | 1940 | 1943 | 1944 | 1945 | 1946 | 1947 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Crops | | | | | | | | | | | |
| Food grains . . . . | 147 | 126 | 95 | 109 | 81 | 110 | 116 | 148 | 155 | 164 | 199 |
| Feed grains and hay | 126 | 149 | 128 | 83 | 91 | 114 | 125 | 153 | 144 | 172 | 140 |
| Cotton . . . . . . . | 86 | 100 | 122 | 105 | 81 | 95 | 87 | 94 | 68 | 66 | 90 |
| Tobacco . . . . . . | 80 | 104 | 95 | 113 | 89 | 101 | 97 | 135 | 137 | 159 | 148 |
| Truck crops (vegetables) . . . | 35 | 51 | 74 | 91 | 92 | 110 | 124 | 137 | 142 | 157 | 141 |
| Fruits and nuts . . . | 73 | 76 | 74 | 89 | 95 | 110 | 107 | 123 | 112 | 133 | 129 |
| Sugar crops . . . . | 73 | 98 | 73 | 85 | 89 | 104 | 81 | 82 | 94 | 103 | 114 |
| Total crops . . . | 95 | 102 | 99 | 96 | 89 | 107 | 114 | 128 | 122 | 135 | 136 |
| Livestock | | | | | | | | | | | |
| Meat animals . . . | 92 | 99 | 107 | 100 | 90 | 118 | 150 | 155 | 147 | 145 | 144 |
| Poultry and eggs . . | 78 | 78 | 93 | 106 | 92 | 109 | 152 | 153 | 163 | 153 | 147 |
| Dairy products . . . | 70 | 72 | 85 | 94 | 98 | 105 | 113 | 115 | 119 | 119 | 120 |
| Total livestock . . | 81 | 85 | 96 | 99 | 93 | 112 | 137 | 141 | 140 | 137 | 136 |
| Grand total . . . | 86 | 92 | 97 | 98 | 91 | 110 | 128 | 136 | 133 | 136 | 136 |

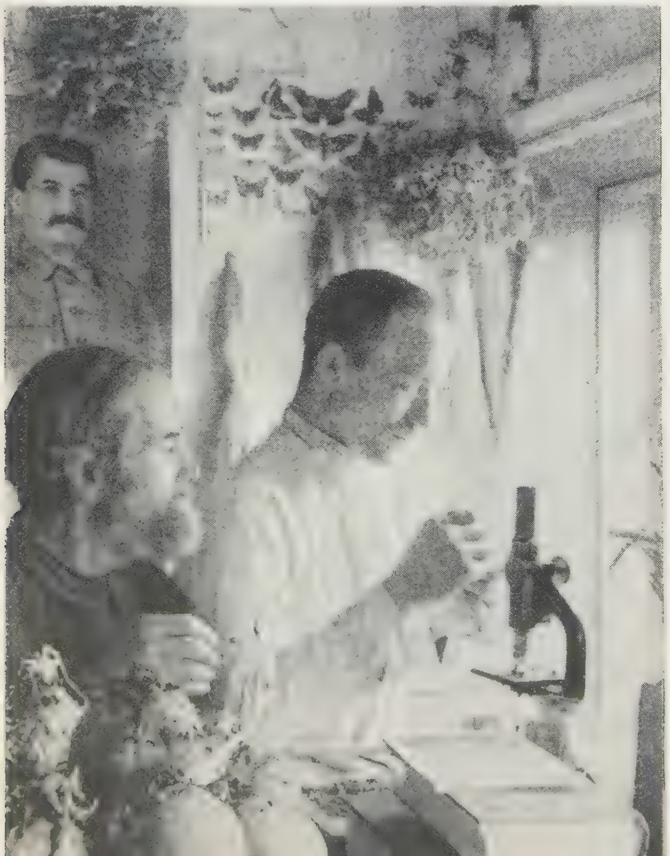
*Estimates by the U.S. department of agriculture.

less than the totals of 1942, 1944 and the all-time record of 1946. This was chiefly the result of the smaller corn crop. The total acreage of 52 crops harvested was 348,355,000 ac. compared with 344,931,000 ac. in 1946, the high total of 352,538,000 ac. in 1944 and the 10-year average, 1936-45, of 336,550.000 ac. Unfavourable weather made it impossible to attain the record of 1946 even with nearly 4,000,000 ac. larger area. Nearly 358,000,000 ac. were planted to crops but 9,500,000 ac., or about 2½%, was lost. This was a relatively small loss, which is usually 12,000,000 ac.-16,000,000 ac. and once was 46,000,000 ac. in 1936. Floods caused most of the acreage abandonment in 1947.

Corn planting was delayed by wet spring weather and the harvested acreage was 5% less than in 1946 and 7% less than the average. It was also the smallest after 1894. Yields also declined and were 8 bu. per acre less than in 1946 at 28.6 bu. per acre. The result was a crop of corn 26% less than in 1946, and the smallest after 1936.

The 1947 wheat crop was the outstanding record of the year amounting to 1,365,000,000 bu., 18% more than the 1946 crop, more than 50% more than the 10-year average and the 4th crop of more than 1,000,000,000 bu. Winter wheat, sown in good condition in the fall of 1946, was alone more than 1,000,000,000 bu. for the first time, since spring wheat amounted to only 22% of the total. Nine states, including the principal wheat states of Kansas and Oklahoma, had record-breaking crops, Kansas alone producing 21% of the nation's total crop. Wheat growers responded to the high market price and the government's request for expansion in 1946 by planting nearly 78,000,000 ac. The average yield, 18.4 bu. per acre, was exceeded only in 1942. So little of the seeded area was abandoned that the 74,186,000 ac. harvested was the largest on record. The crop was concentrated in the great plains wheat belt. Five states—Nebraska, Kansas, Oklahoma, Texas and Colorado—produced about 62% of the entire winter wheat crop, or 661,000,000 bu., which was more than the 10-year average for the entire country. Of the spring wheats the increase was chiefly in durum which was 19% more than in 1946 with a yield of more than the average.

COLLECTIVE FARMER at a rural laboratory in the Mari autonomous republic, U.S.S.R., in 1947. Experimental tests helped peasants select those crops which would yield the most fruitful harvest and increase the national food supply



Four 1,000,000,000-bu. wheat crops together with the large surplus carried over in 1942 and 1943 made up the enormous supply of more than 8,000,000,000 bu., or an average of more than 1,500,000,000 bu. per year. Domestic consumption increased to more than 951,000,000 bu. in 1942 and to 1,216,000,000 bu. in 1943. Exports were small in these years and did not increase until 1945 when the total reached 391,000,000 bu. In 1947 about 400,000,000 bu. was exported and for 1948 the goal was set at 450,000,000 bu. The large six-year supply of wheat was largely consumed in the U.S. and not exported at the expense of domestic consumption. The high consumption of 1943 was because of the use of about 487,000,000 bu. for feed and 108,000,000 bu. for alcohol making. Consumption for food averaged about 520,000,000 bu. after 1940.

Table II.—*Production of Principal U.S. Crops, 1933–47*

(In thousands)

| Year | Corn bu. | Oats bu. | Wheat bu. | Cotton bales | Tame hay tons | Rice bu. | Tobacco lb. | Potatoes bu. |
|---|---|---|---|---|---|---|---|---|
| 1933 | 2,399,632 | 733,166 | 551,683 | 13,049 | 66,530 | 37,651 | 1,371,131 | 342,306 |
| 1934 | 1,461,123 | 542,306 | 526,393 | 9,636 | 55,270 | 39,047 | 1,081,629 | 406,105 |
| 1935 | 2,303,747 | 1,194,902 | 626,344 | 10,638 | 78,138 | 38,784 | 1,297,155 | 386,380 |
| 1936 | 1,507,089 | 785,506 | 626,766 | 12,399 | 63,536 | 49,002 | 1,154,131 | 331,918 |
| 1937 | 2,644,995 | 1,146,258 | 873,993 | 18,946 | 73,785 | 53,364 | 1,553,405 | 393,289 |
| 1938 | 2,542,238 | 1,053,839 | 930,801 | 11,943 | 80,299 | 52,303 | 1,378,534 | 371,617 |
| 1939 | 2,619,137 | 937,215 | 754,971 | 11,817 | 75,726 | 52,306 | 1,848,654 | 364,016 |
| 1940 | 2,449,200 | 1,235,628 | 816,698 | 12,566 | 86,312 | 52,754 | 1,451,966 | 397,722 |
| 1941 | 2,672,541 | 1,176,107 | 945,937 | 10,744 | 82,358 | 54,028 | 1,261,364 | 357,783 |
| 1942 | 3,175,154 | 1,358,730 | 981,327 | 12,824 | 92,245 | 66,363 | 1,412,437 | 371,150 |
| 1943 | 3,034,354 | 1,137,504 | 841,023 | 11,427 | 87,244 | 64,843 | 1,402,988 | 464,999 |
| 1944 | 3,203,310 | 1,154,666 | 1,072,177 | 12,230 | 84,076 | 68,161 | 1,956,022 | 383,134 |
| 1945 | 2,880,933 | 1,535,676 | 1,108,224 | 9,015 | 95,289 | 68,150 | 1,993,837 | 418,020 |
| 1946 | 3,249,950 | 1,497,904 | 1,153,046 | 8,640 | 89,195 | 72,216 | 2,319,409 | 484,174 |
| 1947 | 2,400,952 | 1,215,970 | 1,364,919 | 11,694 | 89,194 | 79,345 | 2,167,702 | 384,407 |

The short corn crop reduced feed grains, and barley and rye were also less than average while oats, sorghum and peas were more than average. The four feed grains totalled the smallest after 1939. The total tonnage of feed grains was estimated at 96,000,000 tons compared with 124,000,000 tons produced in 1946. The yields of all crops considered together was 129% of the 1923-32 average compared with 134% in 1946 and the peak of 136% in 1942. Oilseed crops yielded a high total, soybeans, flaxseed and peanuts all turning out well. Tobacco declined about 4.5% from 1946. Sugar from cane and beets increased about one-eighth more than in 1946.

The 1947 cotton crop was put at 11,694,000 bales, which was about 3,000,000 bales more than the 1946 crop but almost 1,000,000 bales less than the 1936-45 average. The yield was high, however, at 265.4 lb. per acre.

Potatoes, which had been heavily overproduced in 1946, declined one-fifth in total output even though the yield was near the record. The sweet potato crop was grown on the smallest acreage after 1924 and was less than average. Hay production was more than average. Commercial truck crops for fresh market amounted to 15% more than average but 12% less than

EIGHT COMBINES harvesting wheat in a field of cut grain near Gilby, N.D., in Sept. 1947. Trucks in the foreground waited to carry the record-priced harvest to nearby elevators

in 1946. Canning crops also declined 13% from 1946 but were still 21% more than average.

Fruits and nuts were less in total quantity than the record of 1946 but generally more than average. Apples were 6% less than in 1946, peaches 4%, grapes 1%, while pears made a new high record. Oranges were 5% less than in the previous year, but grapefruit and lemons about 5% more. Tree nuts were about 12% more than average.

The four World War II years of high agricultural production and two postwar years of even larger output led farmers to think of retrenchment if a period of surplus was to be avoided. The needs of Europe, Britain and other countries, the proposal of the Marshall plan, etc., led the U.S. government to call again for maximum goals for 1948. The program for 1948 as announced in November asked for 9,000,000 more acres than were cultivated in 1947. The increases were principally in feed grain, sorghum, beans, potatoes and corn. All livestock and products were put at lower totals than 1947 and the average.

**Table III.—*U.S. Production and Yield Per Acre, 1947 and 1946***

| | 1947 | | 1946 | |
|---|---|---|---|---|
| | Yield | Production in thousands | Yield | Production in thousands |
| **Field Crops** | | | | |
| Corn, bu. | 28.6 | 2,400,952 | 36.7 | 3,249,950 |
| Wheat, bu. | 18.4 | 1,346,919 | 17.2 | 1,153,046 |
| Oats, bu. | 31.5 | 1,215,970 | 34.7 | 1,497,904 |
| Barley, bu. | 25.5 | 279,182 | 25.2 | 262,258 |
| Rye, bu. | 12.8 | 25,977 | 11.7 | 18,879 |
| Flaxseed, bu. | 9.9 | 39,763 | 9.3 | 22,585 |
| Rice, bu. | 47.3 | 79,345 | 45.9 | 72,216 |
| Hay, all, tons | 1.36 | 102,500 | 1.36 | 100,739 |
| Beans, lb. | 9.76 | 17,164 | 9.81 | 15,859 |
| Soybeans, bu. | 16.3 | 181,362 | 20.5 | 201,275 |
| Peanuts, lb. | 667.0 | 2,251,640 | 649.0 | 2,038,355 |
| Potatoes, bu. | 182.0 | 384,407 | 186.3 | 484,174 |
| Sweet Potatoes, bu. | 93.5 | 57,178 | 98.3 | 66,424 |
| Tobacco, lb. | 1,156.0 | 2,167,702 | 1,182.0 | 2,319,409 |
| Sugar beets, tons | 13.8 | 12,248 | 13.2 | 10,562 |
| Cotton, bales (yield in lb.) | 265.4 | 11,694 | 235.4 | 8,640 |
| **Fruit Crops** | | | | |
| Apples, bu. | ... | 112,503 | ... | 119,410 |
| Peaches, bu. | ... | 82,981 | ... | 86,643 |
| Pears, bu. | ... | 35,350 | ... | 34,447 |
| Grapes, tons | ... | 3,094 | ... | 3,120 |
| Oranges, boxes | ... | 112,560 | ... | 118,680 |
| Grapefruit, crates | ... | 62,270 | ... | 59,520 |

The continuing high farm prices were considered a stronger supporting factor than the general appeals for a surplus for export. Many farmers remembered the depression that followed World War I when export demand was expected to continue strong.

**Livestock Production.**—The livestock cycle, which swings up and down at periods of seven to ten years, started a decline in 1945 that was gaining speed in 1947. The long-continued decline of horses and mules went on steadily, sheep numbers reached new lows, the heavy slaughter of cattle in late 1947 reduced the breeding stock and the number of dairy cows also slumped.

The principal reason for the continued declines in 1947 was the shortage and high cost of feed. While prices for meat were high, this was not enough to offset the hazard of using expensive feeds, in the opinion of stockmen.

Cattle numbers were down almost 1,500,000 head at the beginning of 1947. Slaughter of beef animals was heavy through the year and further reduced numbers. Prices for all classes of cattle advanced steadily, making new high records in the fall of more than the top in 1946 when price controls were removed. The top was $40 per 100 lb. for fat steers paid in Chicago, Ill., and Omaha, Neb., in December.

The number of milk cows declined about 2% in 1946 and the high price of veal led to heavy marketing of young stock. Beef and veal slaughter in 1947 made a record of more than 12,000,000,000 lb., almost two-fifths larger than the prewar average, 1935-39. The high prices of beef and veal in the retail markets were reflected in high prices of feeder cattle which discouraged stockmen in view of the poor corn prospects early in the year. Stocks of beef declined from the high of 1945 but were larger in 1947 than in 1946. Exports were more than double any previous year and five times the total of 1946. Civilian consumption rose to nearly 70 lb. per capita compared with the prewar average of about 55 lb. per capita. The unusual situation was that in a year of high production came the highest prices and the greatest rate of consumption.

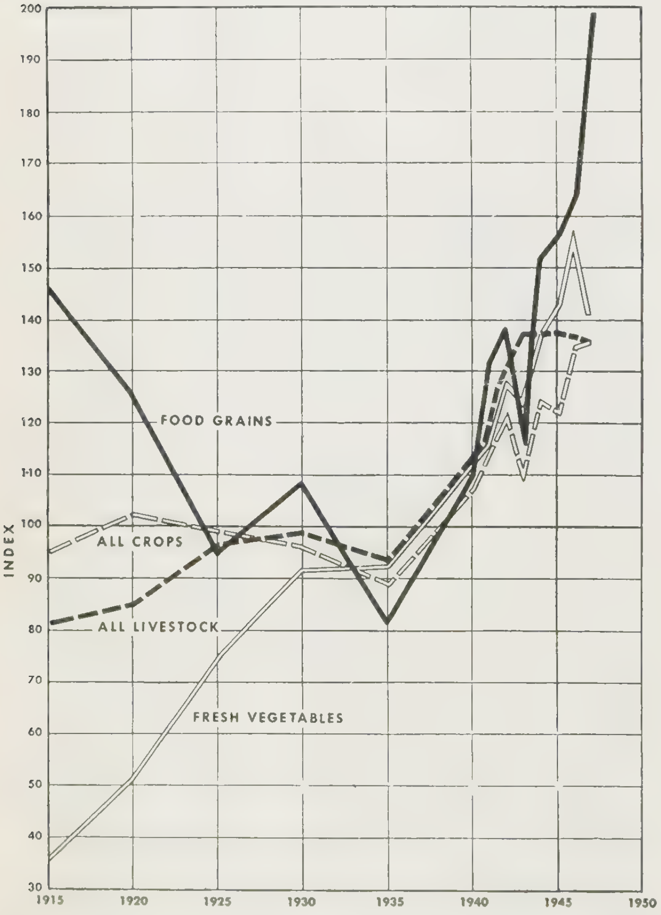
Pork production continued the decline begun in 1944 after the high record output. The number of hogs declined about 7%

in 1946 and was 32% less than the peak of 1944 on Jan. 1, 1947. The pig crop in the spring of 1947 was 52,786,000 head which was more than that of a year earlier and the fall crop 31,352,000 head, making a total of 84,138,000 head, about 1% more than was raised in 1946, but about 1% less than the 10-year average. Total pork production for the year 1947 was less than a year earlier and civilian consumption of pork declined to 69 lb. per capita compared with 75.7 lb. consumed in 1946 and the high record of 80.2 lb. in 1944. The smaller corn crop discouraged farmers and a decrease of 10% in sows kept for spring pigs was reported in Dec. 1947. The number of hogs on farms was estimated to have declined 6% during 1947. Hog production was also smaller in Canada, Europe and Argentina because of the high prices of feed grains. Average prices of hogs to farmers reached a peak of $27.20 per cwt. in September and then declined under the pressure of heavy marketings resulting from the poor corn prospects.

Sheep numbers at the beginning of 1947 were the smallest after records began in 1867. Both eastern farms and western ranges had fewer animals and the lamb crop declined 2,300,000 head from 1946 to the smallest number in 22 years. Less than the average number of sheep were fed in the corn belt. Sheep and lambs reached the peak of prices in Sept. 1947, then declined to the end of the year. While these prices were about three times the prewar average, the interest in sheep raising appeared to be waning. On the ranges the lack of experienced herders was the principal complaint.

Average consumption of lamb and mutton continued at about 6 lb. per capita compared with the record of 7.2 lb. in 1942 and 1945.

Numbers of dairy cows and of replacement heifers were both lower at the beginning of 1947, but high milk and butter prices stimulated some increase in heifers kept for milk production. The herds were closely culled because of the high prices that could be had for beef. This resulted in higher production per cow and a slight increase in total milk production. Prices of milk paid to dairymen declined through 1947 on the average although retail milk prices were advanced in some areas late in the year.



UNITED STATES food production, as measured by index numbers, maintained a record high level in 1945 and 1946, following the end of World War II. Food grains reached new high records while livestock declined slightly

The poultry industry, which had declined through 1946, recovered slightly in 1947 and late in the year was larger than the same period a year earlier. The total output of poultry meat and eggs was almost the same as in 1946 but more potential laying hens were on farms in the early fall. The campaign to have poultryless days to save grain put on by the president's food committee was soon found to be a mistake and had little effect on the marketing of hens. Egg production actually increased while the campaign was going on. The chief factor in holding down egg production was the high price of feed. Poultry and egg prices held steady through 1947 to September, then declined slightly.

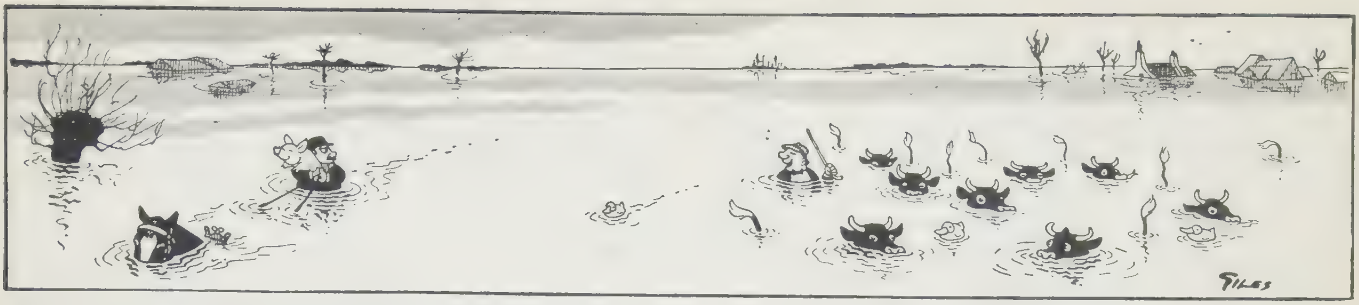
The decline in numbers of horses and mules continued. Purchases for export helped to maintain prices which were about the same in the fall of 1947 as a year earlier. Mules advanced a little in price when considerable numbers were purchased for export to Mexico to replace animals killed in the foot and mouth disease campaign.

**Food Stocks and Exports.**—The large production of foodstuffs, combined with larger than average surpluses and reserves, made possible the largest exports of foodstuffs in the history of the United States in the year ending June 30, 1947. In fact, it was more food than any other country ever exported in a single year, amounting to more than 19,000,000 tons.

Stocks of various foodstuffs varied widely. U.S. stocks of wheat which had reached 1,000,000,000 bu. in 1943 were only 682,000,000 bu. in 1946 which was slightly more than the prewar average. Rice, rye, corn and barley were not much more than average. Oats reserves were at a record high in 1946, however, almost twice the average. Meats of all kinds were about average and fats and oils were low. The large exports came from the increased production almost entirely, in spite of high civilian consumption. Exports absorbed the surplus that had been used for military forces in the war years.

The U.S. exports went principally to the U.S. and British zones in Europe 3,200,000 tons; United Kingdom 1,700,000 tons; Italy 1,464,000 tons; France and North Africa 830,000 tons; other European countries 4,500,000 tons; Japan and Korea 1,708,000 tons; India 1,027,000 tons; China, East Indies, Philippines 1,030,000 tons; Latin American countries 2,000,000 tons and the remainder to various parts of the world. Food grains made up more than 15,000,000 tons of the total of 19,000,000 tons, and wheat and flour accounted for 10,000,000 tons of the grain. The estimated needs under the proposed Marshall plan amounted to a similar large total which the large crops of 1947 could supply provided domestic consumption did not increase, which was regarded as unlikely at the high prices prevailing in late 1947. While U.S. reserves were lower than they had been for some time they were not less than the prewar average.

Wheat exports in the year ending July 1, 1947, amounted to the record total of 574,000,000 bu. The goal for the next fiscal year was put at 570,000,000 bu. and the Citizens Food committee plan for saving wheat was begun in September to save 100,000,000 bu. of grain, mostly wheat, in order to make the goal by July 1948. Plans to save grain by limiting the feeding of livestock were proposed to save even a larger amount but congress had taken no action by the year's end.



"MIND YOU, WE FARMERS ARE NOTORIOUS GRUMBLERS," by Giles of the *Daily Express* (London), a wry defense of the British farmers' burdens as increased by floods and unusually bad weather early in 1947

**Farm Prices.**—The prices of farm products followed the rising general price level to new heights in 1947, exceeding all previous records. The index of prices paid to producers for all crops and livestock started the year at 260 (100 = average 1909-14) which was somewhat less than the peak of 273 reached in Oct. 1946. The general farm price level rose quickly to 280 in March, then dropped to 271 in June, to be followed by a recovery to 286 in September, 289 in October, a slight decline in November and a new high record of 301 in December. This curve of prices followed the general pattern of previous years except that seldom before had record high prices been reached in the midst of the harvest season in the fall.

The price advances occurred in nearly all groups of farm products except tobacco, cotton, fruit and vegetables, which fluctuated but made little or no gain for the year as a whole. The greatest increases in prices were in food and feed grains, the former advancing about 75 points and the latter 100 points during the year. The price of wheat reached the all-time-high record of $2.74 per bushel to growers in November and stood at $2.79 in December compared with $1.88 per bushel a year earlier. Corn reached a peak of $2.40 per bushel in September, almost as high as wheat. In some markets corn sold at times for more than wheat. Cash wheat at Chicago reached a new record high of $3.26 per bushel in October. The reason for the high price of grains was the great demand for European relief and the efforts of the government to save grain for export. Never before had high prices been seen in a year of record crop production in the United States. The slump in tobacco prices was the result of a large crop in 1946 together with the growing difficulty of other countries to get dollars with which to buy.

Livestock, sold for meat, advanced about 60 points during the year and stood at 360% of the base in December which was relatively higher than any other product except tobacco. Dairy products declined until June and then advanced again but not to the level of the first of the year. Poultry and eggs advanced steadily through the year to a new high average for the year.

Prices paid by farmers for all commodities, interest and taxes advanced from an index of 215 to 239, farm wages 399 to 404 with the result that the parity ratio for farmers was almost the same as in 1946, at 120% of the base.

**Table IV.**—*Farmers' Average Prices, Certain U.S. Crops, on Selected Dates*

(in cents per unit)

| | Wheat per bu. | Corn per bu. | Oats per bu. | Barley per bu. | Rye per bu. | Buck-wheat per bu. | Pota-toes per bu. | Eggs per doz. | Cot-ton per lb. |
|---|---|---|---|---|---|---|---|---|---|
| Oct. average, 1909–13 | 88.1 | 64.8 | 38.4 | 60.5 | 72.0 | 71.1 | 65.0 | 23.8 | 12.10 |
| Oct. 15, 1936 | 106.8 | 97.9 | 43.1 | 84.2 | 80.4 | 78.3 | 97.9 | 27.6 | 12.23 |
| Oct. 15, 1937 | 88.7 | 58.9 | 28.8 | 52.0 | 63.8 | 62.4 | 48.5 | 25.2 | 8.10 |
| Oct. 15, 1938 | 52.2 | 41.9 | 22.1 | 36.1 | 32.9 | 54.5 | 51.0 | 27.1 | 8.53 |
| Oct. 15, 1939 | 70.3 | 47.6 | 30.3 | 42.2 | 45.1 | 62.7 | 66.4 | 22.9 | 8.73 |
| Oct. 15, 1940 | 68.2 | 59.4 | 28.3 | 38.2 | 40.5 | 54.4 | 52.0 | 23.7 | 9.35 |
| Oct. 15, 1941 | 91.0 | 64.9 | 38.9 | 49.1 | 51.3 | 64.3 | 67.2 | 31.8 | 16.55 |
| Oct. 15, 1942 | 103.5 | 77.5 | 43.2 | 57.6 | 52.9 | 77.0 | 102.5 | 37.4 | 18.87 |
| Oct. 15, 1943 | 135.0 | 107.0 | 77.4 | 103.0 | 101.0 | 110.0 | 128.0 | 45.2 | 20.28 |
| Oct. 15, 1944 | 142.0 | 113.0 | 65.9 | 95.4 | 108.0 | 102.0 | 142.0 | 38.8 | 21.25 |
| Oct. 15, 1945 | 151.0 | 113.0 | 62.8 | 101.0 | 138.0 | 106.0 | 126.0 | 42.6 | 22.30 |
| Oct. 15, 1946 | 188.0 | 171.0 | 79.9 | 135.0 | 199.0 | 144.0 | 122.0 | 51.5 | 37.69 |
| Oct. 15, 1947 | 266.0 | 223.0 | 109.0 | 177.0 | 249.0 | 197.0 | 150.0 | 55.3 | 30.65 |

**Farm Income.**—The grand total farm income of 1947 reached the record amount of $34,600,000,000. This was the gross income, which includes not only cash received from sales but also government payments and the estimated value of products consumed on the farm, and a rental value for farm dwellings. The realized net income was estimated at $18,000,000,000, which was the gross income less expenses, estimated at $16,600,000,000. The quantity of farm products sold times the price received, or the cash receipts for farm marketings, was estimated by the U.S. department of agriculture to be $30,000,000,000 compared with $24,500,000,000 received in 1946 and a new high record for all time. Government payments amounted to $340,000,000, which was less than half the amounts paid in 1946.

Estimates of the expenses of production in 1947 reflected the increases in prices of general commodities purchased by farmers and farm wages, both of which advanced steadily through 1947 at a rate somewhat slower than prices of farm products. Total expenses were estimated at $16,600,000,000 leaving $18,000,000,000 as the realized net income of farm operators. Expenses in 1946 were estimated at $14,044,000,000. This total included $617,000,000 for taxes, $228,000,000 for farm mortgage interest, $2,536,000,000 paid for hired labour, maintenance of machinery and buildings $2,210,000,000 and the value about $8,000,000,000 for feed, fertilizer, livestock and operation expenses.

The effects of the large farm income were shown in the decline of farm debts. After Jan. 1940 the total farm mortgage debt was reduced by 25% to 1945 and 5.1% more in 1946. A slight increase was reported early in 1947 because of increased sales. The total farm mortgage debt in Jan. 1947 was about 27% less than what it was in Jan. 1940. Another large part of the increased income was spent on farm repairs and improvements, replacement of obsolete farm machinery, and modern equipment for the farm plant.

**Farm Land Values.**—The value of farm real estate continued to rise steadily until the middle of 1947 when the first signs of a decline were noticed in the south Atlantic states. The index of farm land values reached 162 in July 1947, compared with 100 for 1912-14, which was only 8 points less than the high record of 1920. This was a rise of 10% in a year. The index of 162 compared with 84 for the year 1940 indicated that land values had increased 95% from prewar and the large farm income of 1947 was expected to continue the rise because the volume of sales during the 12 months ending in March 1947 was the highest on record, amounting to 57.7 per 1,000 of all farms. Farm buyers paid cash in more than one-half of the sales in 1945-47. The proportion of loans made by commercial banks and private individuals increased steadily from prewar years. The total farm mortgage debt was smaller every year after 1940 until 1946 when there was a small increase.

The first signs of a check in the land boom came in 1947 when the south Atlantic and south central states reported slight declines in values. At the same time increases in other regions more than offset these declines. The advances appeared to be higher in the central states. The total value of agricultural real estate was estimated to be $58,604,000,000 on Jan. 1, 1947, compared with $33,642,000,000 in 1940.

During World War II the number of farms operated by tenants declined and was down to 32% of all farms by 1945 compared with 39% in 1940. This change was because of tenants' buying land to become owner-operators. Many farms operated by tenants were sold when the young tenants went to war. A large number of returning veterans who were formerly tenants purchased farms upon their return. Many of these were assisted by the government.

**Farm Debt.**—The total indebtedness of agriculture was steadily reduced by the several successive years of high income. Farm mortgages decreased steadily from 1927 to 1946 but in 1947 a small increase was estimated. Total farm mortgages were estimated at $4,890,000,000 on Jan. 1, 1947, or about $160,000,000 more than a year earlier. The farm mortgage debt of 1946 was less than for any other year after 1914 and less than half the high peak of $10,786,000,000 in 1923. The 1946 increases were in all regions except the corn belt and great plains. From the end of World War II more farmers were buying new equipment rather than reducing debts further. Another factor was the large number of farm sales, many of which created new mortgages.

Loans from commercial banks, various government agencies, etc., not secured by mortgages were estimated at $2,024,000,000 on Jan. 1, 1947, compared with a peak of $2,439,000,000 in 1943 and $1,522,000,000 in 1938. The total of such loans was remarkably uniform from 1940 to 1947. When the total of farmers' bank deposits, estimated at $11,100,000,000, is considered, these non-real-estate loans are relatively small. Total equities of farm owners were estimated at $102,795,000,000 on Jan. 1, 1947, compared with $90,759,000,000 a year earlier and $43,781,000,000 in 1940. The total net income from sales and government payments was estimated at $18,889,000,000. Farm mortgage interest was estimated at $228,000,000 for 1946 but no estimates were available for interest on other types of loans.

Farm taxes increased through 1946 and also in 1947 as the net worth of farm real estate and personal property advanced in value. The estimated tax bill of U.S. farm operators was $617,000,000 in 1946, compared with $554,000,000 in 1945 and the prewar average of $442,000,000, 1935-39. About the same increase occurred in 1947 but exact estimates were not available at the end of the year.

**Farm Population.**—At the beginning of 1947 there were 27,550,000 people on farms in the U.S. which was an increase of 2,360,000 from the wartime low of Jan. 1, 1945, when the total was 25,190,000 persons. This total was still about 17% less than the prewar total of 30,289,000 in 1940. The recovery in farm population in 1945 and 1946 was chiefly because of the return of 1,250,000 men from the armed forces, out of a total of 2,400,000 men who entered the forces from 1940 to 1946, inclusive. About three of every four men who went to war returned to farms by Jan. 1947. There were also more births than deaths on farms, the birth rate in 1946 being the highest after 1929. This accounted for a gain of 773,000 persons in 1945 and 1946. There was also a larger back-to-the-land movement in 1945 than in previous years, but in 1946 there was a small net movement from farms. The southern states lost the most farm population during the war, 3,287,000 persons between 1940 and 1945. Only about three-fifths of their loss had been regained after 1945. After 1900 when the total U.S. population was 76,000,000, this total had doubled to 143,000,000 in 1947. At the same time rural population increased only from 45,800,000 in 1900 to 58,600,000 in 1947. Of the total rural, 31,000,000 were not on farms but in villages and suburban areas while 27,600,000 were on farms. While in 1900 rural population exceeded that classed as urban, in 1947 rural constituted only 58,600,000 compared with 84,400,000 urban or about 70%.

**Farm Labour.**—The high production of 1947 was achieved with a larger labour supply than in any other year after 1943. Total farm employment was estimated by the U.S. department of agriculture at 10,157,000 in 1947 compared with 10,010,000 in 1946 and the prewar average of 10,920,000, 1935-39. Of the total for 1947, 7,930,000 were family workers and 2,227,000 hired workers. The labour supply in 1947 was well distributed. The number of family workers in 1947 had almost regained the 1940 level for the country as a whole. The number of hired hands had not recovered so fast.

Special agricultural labourers were brought into the United States from Canada, Mexico, Jamaica, Bahamas, etc., to the number of about 60,000 in 1947. Of these 40,000 came from Mexico, mostly to California and Arizona.

New machinery on farms enabled operators to do more work and take care of larger acreages, but did not materially reduce the number of hired hands needed. Staple crops, except cotton, employed labour-saving machinery; but truck, fruit and other special crops still required a large amount of hand labour.

Wages paid hired labour continued to advance to new high records in 1947. The advance was 8% more than in 1946 and 3 times the 1940 level. Average wages per month with board were $97.80 on Oct. 1, 1947, compared with $91.40 a year earlier and $27.10 in 1935–39. Wages, without board, were $112.00 on Oct. 1, 1947, $104.00 a year before and $34.10 in prewar years. The daily wage without board averaged $5.25 per day in 1947 compared with $1.55 average in 1935-39. The total hired labour bill for U.S. agriculture was estimated at $2,151,000,000 in 1946 compared with $722,000,000 in 1935-39. Benefits other than wages raised the total to $2,536,000,000.

**Farm Machinery.**—The estimated expenditure of $800,000,000 for new farm machinery in 1946 and a like amount in 1947 indicated the rate at which farm equipment was being replaced after the war. This amount was about twice the average annual expenditure in 1935-39 indicating that machines had been heavily worn during the war years of intensive farm work. The total value of machinery and motor vehicles in 1947 was put at $6,889,000,000 and the increase over the previous year at about 10%. The value of all machinery had more than doubled in value after 1941. Farmers spent about 5% of their net income on new machines and motors in 1946 and would have bought much more had it been available.

**Fertilizers.**—The use of commercial fertilizers increased again in 1947 as it had during the war years. Even more would have been used had it been available. Total fertilizer consumption was estimated to be about 14,000,000 tons compared with 13,200,000 tons in 1946 and a prewar average of 7,270,000 tons. Prices of fertilizers were relatively low compared with farm prices.

**Marketing Research.**—An act of congress known as the Research and Marketing Service act of 1946 provided, beginning in 1947, for research, education and service by the U.S. department of agriculture and state agricultural experiment stations in the marketing field. Up to mid-1947 the projects for study were being outlined and it was expected that it would be two or three years before important results would be forthcoming. This was the first time that a comprehensive research program had been authorized by the U.S. congress in the marketing field. The appropriation would be increased as the projects were developed, beginning with $15,000,000.

The national marketing bill increased steadily with the volume of agricultural production to more than $11,000,000,000 compared with about $8,000,000,000 in 1935. The marketing charges amounted to 48% of the retail cost of foodstuffs in 1946 compared with 60% in 1940. The farmer's share of the consumer's $1 was estimated at 52 cents in July 1947 compared with 56 cents in March.

**Soil Conservation.**—The soil conservation service, begun in 1933, had organized by June 30, 1947, about 1,865 soil conservation districts and 24 other districts for special purposes. After 1946 all 48 states and Puerto Rico passed laws to permit local farmers and landowners to farm districts for soil conservation. These covered an area of more than 1,000,000,000 ac., including 4,450,000 farms, three-fourths of all farms in the nation. The development of plans for the best use of soils in these districts was completed for about 500,000 farms by federal experts and farmers working together.

**Crop Insurance.**—In 1947 more than 500,000 producers were protected by crop insurance on wheat, cotton and flax. The total insurance amounted to about $500,000,000 with premiums amounting to $51,000,000. These policies gave protection against loss of yield with an option of coverage of either 50% or 75% of the long-time average yield of the farm. (*See* also Agricultural Research Administration; Census Data, 1947; Chemurgy; Famines; Fertilizers; Horticulture; Irrigation; Law; Livestock; Meteorology; Price Administration, Office of; Prices; Soil Erosion and Soil Conservation; Vegetables, etc.; also under principal crops.)

(J. C. Ms.)

**Great Britain.**—1947 was a difficult year for British farming. At the start hard weather with snow and then floods caused disastrous losses of sheep on the hill farms and set back spring cultivations all over the country. Parts of the fenland in East Anglia were still flooded at the end of April, and in most districts the ground was not fit to sow the spring corn until mid-April, a month later than usual. Potato planting was carried into June. An exceptionally sunny, hot summer made some amends and the late-sown crops grew well. By the time harvest came the season had caught up with the calendar and in August farmers everywhere had a run of luck with perfect harvest weather; all the cereals were gathered in first-class condition and without excessive labour. Yields were light and cereals fell to less than the ten-year average in weight per acre; this was true also of the potatoes and sugar beets, but with the dry weather continuing, these crops were lifted in excellent condition and the potatoes were expected to keep well. The outcome of the year's trading was meagre for many farmers, especially in the eastern counties of England, where the corn and sugar beet crops normally bulk largely in the farmers' receipts.

Parliament gave much time in the spring and summer to consideration of the Agriculture bill, which received the royal assent in August. This act established the principle of guaranteed markets and prices for a wide range of agricultural products, and for the first time after the ill-starred Corn Production act at the end of World War I the British farmer was promised stability by act of parliament. This measure received the general blessing of all political parties, although there was much detailed criticism of some of the provisions covering the relations between landlord and tenant and the continuance of the supervisory powers of the minister through county agricultural executive committees. All three partners in the industry—landowners, farmers and farm workers—agreed that high standards of management must be maintained and that any landowner or farmer who failed to meet his obligations in this respect should, after due notice and a period of supervision, be required to make way for someone else.

The county committees, who were to act as the minister's agents in maintaining satisfactory standards in farming, were to be selected by the minister from panels of names submitted by the Central Landowners' association, the National Farmers' union and the two trade unions representing agricultural workers. In this way the farming organizations had more direct responsibility for the standard of farming in each area than the committee members in World War II, who were appointed direct by the minister of agriculture without consultation with the farming organizations. It could not at the end of 1947 be said that under the new arrangements the teamwork between the ministry and the county committees was as close and effective as was desirable, or that the new National Agricultural Advisory service established by the minister had yet gained sufficient strength and standing to replace the county advisory staffs with their local farming connections and close contacts with the universities. It was, however, true that, while only perhaps one farmer in ten was making regular use of technical advice before World War II, the help of the scientists in 1947 reached one farm in four.

(A. R. Hd.)

**Agriculture, U.S. Department of:** *see* Government Departments and Bureaus.

## Air Conditioning.

Shipments of air-conditioning equipment in 1947 exceeded shipments in 1940 and 1946 and reached a new all-time peak in spite of continuing shortages of materials and components.

Statistics for air-conditioning equipment are not easily separable from statistics for refrigerating equipment. The trend can be determined, however, from shipments of specific types of air-conditioning equipment as published by the U.S. bureau of census as follows:

*U.S. Domestic and Export Shipments*
*of Specific Types of Air Conditioning Equipment*

| | | Number | Value |
|---|---|---|---|
| Room air conditioners | 1940 | 30,873 | $4,584,406 |
| | 1946 | 23,562 | 4,923,798 |
| | 1946–9 mo. | 14,052 | 2,804,183 |
| | 1947–9 mo. | 37,980 | 8,566,135 |
| Self-contained air conditioners | 1940 | 5,880 | 4,466,926 |
| | 1946 | 16,561 | 12,734,228 |
| | 1946–9 mo. | 11,706 | 8,463,047 |
| | 1947–9 mo. | 21,863 | 20,323,229 |
| Air conditioning, remote-type unit coolers | 1940 | 5,955 | 2,269,210 |
| | 1946 | 9,551 | 3,880,182 |
| | 1946–9 mo. | 4,891 | 2,664,443 |
| | 1947–9 mo. | 13,048 | 4,734,406 |

Room air conditioners of the window-sill and floor-mounted type, usually air cooled, are used principally in offices and to some extent also in residences and for other applications. Shipments in the first nine months of 1947 were 23% more in number and 87% more in value than in 1940.

Self-contained air conditioners, usually water cooled, ranging from 3 to more than 20 tons ice-melting effect per 24 hr. are principally used in commercial and industrial applications. Shipments in the first nine months of 1947 were 270% more in number and 350% more in value than in 1940.

Air-conditioning unit coolers are a part only of a system for commercial or industrial applications. Shipments in the first nine months of 1947 were 120% more in number and 107% more in value than in 1940.

Air-conditioning equipment also includes reciprocating and centrifugal condensing units, evaporative condensers, cooling towers, air washers, heat-transfer surface, controls and other equipment.

Product developments during 1947 were in the nature of refinements rather than unusual new designs with the possible exception of packaged "heat pumps." There was a continuing trend toward the use of higher speeds for refrigerating condensing units of the multiple-cylinder design resulting in more compact, lighter-weight units. There was a trend toward greater use of remote-type room air conditioners in multiroom buildings supplied with refrigeration and heating from a central plant.

Heat pumps of the self-contained type, ranging in size from 3 h.p. to 20 h.p., were sold by several manufacturers in 1947 for commercial and residential application.

The heat pump extracts heat from outside air, well water or other source in a manner similar to a household refrigerator which extracts heat from a cabinet. The heat removed from the household refrigerator is wasted to the kitchen, but in the heat pump it is used for building heating. It had attractive possibilities because it was capable of supplying typically three to four times as much heat as the heat equivalent of the electrical energy input, and it provides complete year-around air conditioning in one self-contained unit. There were, however, many economic and technical problems in the development and application which would require the close co-operation of the manufacturer, contractor and electric utility company for their successful solution. (*See* also METALLURGY; PUBLIC HEALTH ENGINEERING.) (F. H. F.)

**Aircraft Carriers:** *see* AVIATION, MILITARY; NAVIES OF THE WORLD.

## Aircraft Manufacture.

Financial losses and decreasing production, together with plans for correcting these conditions, highlighted the 1947 aircraft manufacturing picture in the U.S. Fifteen major concerns estimated that 1947 net losses, even after tax carry-backs and other credits, would be double the net 1946 loss of $11,684,000. Total aircraft production dropped from 96,318 military planes for the 1944 wartime peak, to 36,204 civil and military planes in 1946, with totals for 1947 estimated at about 17,000. The greatest decrease was in personal plane production which fell to an estimated 15,000 in 1947 from 34,407 in 1946.

Testimony before the president's air policy commission, established to formulate an aviation program, clarified the nature of the problems and the various proposals for meeting the industry's needs. There was agreement that government aid would be necessary to maintain an industry able to supply adequate peacetime military and civil aircraft needs and expand quickly in a national emergency. However, opinions differed on the form aid should take and how it should be administered within a private enterprise economic system.

The contrast of conditions in the aircraft industry with the prosperity existing in the over-all industrial picture in the country lent weight to a popular conclusion that the situation was in part a stage of development in a new field, complicated by wartime expansion and reconversion. In any event, the underlying factors were extremely involved and interwoven. First, there was insufficient demand to support large production facilities and profitable operation. Military purchases, which constitute an estimated 90% of total aircraft sales even in peacetime, were smaller than had been anticipated during the war; and it became evident that under existing conditions steady demand to compensate for reduced military orders could not be expected from either private flying or air transport. Attempts to offset waning markets by turning to nonaviation activities were not entirely successful.

The increasing cost and time involved in developing complex modern planes were other factors contributing to manufacturing difficulties. The fact that the B-29, even under wartime acceleration, entered service five years after specification agreement, and that Douglas, with fewer than 200 orders, did not expect to break even on the DC-6 unless 300 were produced, vividly illustrates these conditions. In addition, higher overhead expenses, inability to plan continuous production with spotty short-term orders, and lack of standardization plagued manufacturers.

Table I.—*Number of Aircraft Produced in the U.S. During the First Nine Months of 1947 and 1946*

| | 1947 | 1946 |
|---|---|---|
| Military | 1,323 | 917 |
| Civil | 13,697 | 25,505 |
| 1-engine | 13,484 | 25,109 |
| 2- and 4-engine | 213 | 396 |
| Total (all types) | 15,020 | 26,422 |

Source: U.S. bureau of the census and the Civil Aeronautics administration.

Mass production methods had to be abandoned in many instances and trained personnel dismissed. However, by December it was hoped postwar contraction had ended and that an early increase in military orders plus adoption of a sound government policy would effect improvement.

Lightplane manufacturers encountered greater difficulties than the industry as a whole and several underwent reorganization. Others, fighting reduced demand, pushed the development and integration of sales organizations. To supply business and agricultural markets where demand was greatest, more four-place planes, in relation to two-place planes, were produced.

Britain's problems, similar in certain respects, were complicated by the country's general economic difficulties. Production was disrupted by severe weather and shortages of material, fuel and labour. In the fall, the government's strict economy measures had adverse effects such as cancelled orders, but the industry escaped drastic curtailment. Notwithstanding delayed deliveries, all-important exports were estimated to be greater for 1947 than for 1946.

Table II.—*British Exports of Aircraft and Aircraft Engines in 1947 and 1946*

(11 months ended Nov. 30)

| | 1947 | 1946 |
|---|---|---|
| Complete aircraft | 1,641 | 1,268 |
| Aircraft engines | 1,495 | 738 |

Source: British board of trade.

Although the Canadian aircraft industry had shrunk from its wartime size, progress was made in several domestic designs, including a jet airframe and engine. Civil plane production equalled one-fortieth of the total number of all types produced annually during the war. In Australia, government plants produced military planes at a reduced rate. De Havilland's plant was building the prototype of the first Australian civilian design, the Drover for "out back" operations.

**Civilian Equipment.**—Financial difficulties and cancelled orders necessitated abandonment of several models, including the publicized Republic Rainbow, Martin 303 and Cunliffe-Owen Concordia. However, development, production and delivery of other new planes moved forward. In the U.S. transport field, Lockheed delivered improved Constellation models. The Douglas DC-6 went into widespread use, but after accidents was temporarily grounded for modifications. Boeing's 80-place, four-engine Stratocruiser was in production with deliveries scheduled for 1948. The high-speed, short-haul Martin 202 began operating. Deliveries were initiated on the first U.S. pressurized two-engine aircraft, the 40-place, 300 m.p.h. Convairliner with jet exhaust auxiliary propulsion.

In Britain, after disappointing tests, Tudor I's were returned to the manufacturer for changes. Conflicting issues about the plane subsequently developed, resulting in the formation of a government board of inquiry. Work continued on the other seven Tudor Marks, or types, with Mark IV beginning scheduled operation for British South American Airways. Prototypes of the Hermes IV, pressurized, 40-passenger, four-engine landplane and the 28–40 place, 282 m.p.h., two-engine Airspeed Ambassador began flight tests. Flying boats, holding their place in British equipment, were under construction and Short's 24–45 passenger Sandringhams were delivered.

Britain had in production several medium transports or "feeders," notably the Dove, successfully operated domestically and abroad. Although no U.S. feeder planes were produced, the Northrup Pioneer and Beech 34 were ready if orders warranted.

In the U.S. new four-place lightplane models were announced, some by manufacturers formerly producing only two- and three-place planes. Among these were the Piper Cruiser, Cessna 170, Ercoupe Four and Aeronca 15. The Stinson Voyager and Beech Bonanza were popular four-place planes in use. In Britain the three-passenger, steel Auster Autocrat became the standard lightplane. Flying in prototype were the four-place Auster Avis; Elliotts' Newbury Eon, three- or four-place; and the Prestwick Pioneer, four-place, for operation in areas with inadequate airports.

In Canada, DC-4M's, produced in nonpressurized version for the royal Canadian air force and pressurized for Trans-Canada Air Lines, began operation on transatlantic routes. The five-place Beaver for passenger or cargo "bush" operation successfully completed trials and the two-place Chipmunk was well received on delivery.

As European manufacturers recovered from the war, an impressive group of all types of planes emerged. Sweden's two-engine, 24–32 passenger Scandia transport was in production. Particularly interesting was the big, six-engine French Latecoere 631 flying boat placed in operation by Air France.

With the importance of cargo increasing, several cargo versions of passenger transports were flying; but specifically designed cargo planes were rare. New models of the U.S. air force Packet and the British Miles M. 68 had detachable fuselages. Bell's two-place and Sikorsky's four-place helicopters were delivered for civilian use in the U.S., and the two-place Sikorsky S-52 with all metal rotor blades was certificated. Bristol's 171, first British helicopter for commercial use, flew in prototype.

**Research and Technical Developments.**—A forward step in the free exchange of ideas and information in aviation research was made with the organization of an annual Anglo-American conference by the British Royal Aeronautical society and the U.S. Institute of Aeronautical Sciences. During September the first meeting was held in London. Discussions revealed that much fundamental research continued to focus on problems of high-speed flight in the subsonic, trans-sonic and supersonic ranges. In many cases work consisted of consolidation, adaption and refinement of previous developments of a radical nature.

Prominent among the techniques employed for exploring high-speed flight was the use of controlled model aircraft and pilotless missiles (also being developed as military weapons). The first of a trans-sonic and supersonic British model aircraft series reproduced the basic design of the Miles M. 52, piloted project abandoned in 1946. The U.S. National Advisory Committee for Aeronautics utilized missiles to study stability and control, the aerodynamics of basic shapes, specific aeroplane configurations and power plants. Another technique was the use of piloted experimental planes. The navy-Douglas-NACA D-558-1 joined the army-Bell-NACA XS-1 in flying tests. There were reports that the XS-1 had exceeded the speed of sound but these were not confirmed by authorities. Construction of the D-558-2, another of the planned research craft, was completed. In England data obtained from the De Havilland 108 were to be applied to future military and civil planes.

An increasing number of planes incorporated new designs perfected through years of research in aerodynamics. The more radical were limited to military and experimental aircraft such as the Northrup YB-49, jet-propelled successor to the XB-35 Flying Wing, the Armstrong Whitworth A.W. 52, jet successor to the tailless glider, and the Boeing XB-47, one of the most advanced designs flying.

Although reciprocating engines were used exclusively on civil planes and on many military types and work was done on ram-jet and rocket engines, gas turbines, both turbine jets (turbo-jets) and airscrew turbines (turbo-props), were the centre of attention in the power plant field. Experiments revealed that each of the basic turbine types was capable of many variations and combinations. Research concentrated on taking advantage of their strengths and overcoming their weaknesses. The U.S. added experimental turbo-jet bombers to its list of jet fighters. In Britain four-engined Lincolns and Lancastrians, with two of the reciprocating engines replaced by turbo-jets, were used as "flying test beds." Similar testing was undertaken for turbo-props and plans for their installation in commercial planes came nearer fruition.

Sweptback, thin wings posed problems in undercarriage retraction. One solution was the tandem undercarriage of a Martin bomber. The Civil Aeronautics administration in the U.S. sponsored a program to develop castoring undercarriages. These would permit crosswind landings, making possible single-runway airports, and add greatly to the utility of the personal plane.

The first British propellers for turbine installation were officially approved. Automatically feathering propellers and automatic propeller synchronizers were perfected for U.S. civil transports.

Efforts to adapt major technological advances to personal and training planes covered all categories. Noise reduction was considered vitally important. Interesting experiments were conducted with "roadable" aeroplanes, convertible to automobiles by detaching the wings. (G. M. M.)

**Air Forces of the World:** *see* AVIATION, MILITARY.
**Air Mail:** *see* POST OFFICE.

## Airports and Flying Fields.

The revised 1947–48 federal-aid program, which merged the funds for the two years, called for the construction or improvement of 908 airports at an estimated cost to the federal government of $66,569,590, with local or state sponsors providing an additional $70,235,095.

The revision in plans, announced Aug. 5, 1947, was made necessary by the reduced 1948 appropriations. The new plan merges the actual appropriation of $32,500,000, made by congress for 1948, with the $45,000,000 appropriation for 1947.

In approving the new program, T. P. Wright, administrator for civil aeronautics, declared that the CAA's primary consideration was aeronautical necessity, and that he had not been able to program all projects for which the CAA had received applications for federal assistance. The CAA had on file, late in 1947, a backlog of approximately $250,000,000 in requests for federal aid.

The program included 896 projects for the continental United States, of which 725 were for the construction or improvement of class 1, 2 and 3 airports and 171 were for class 4 or larger, of which only 3 involved the construction of new class 4 or larger airports. By early December, 12 projects had been programmed in the territories and Puerto Rico.

Of the $66,569,590 of proposed federal expenditures, $35,295,055 was for construction or development of class 3 or smaller airports, and $31,274,535 was for class 4 and larger.

The apportionment of $77,500,000 of federal funds appropriated for the fiscal years 1947 and 1948 consisted of $4,087,500 for administrative purposes, $3,315,500 for projects in the territories, $52,572,750 according to state area and population and $17,524,250 for a discretionary fund.

The proposed federal expenditures comprised $49,997,985 of the $52,572,750 apportioned among the states as provided in the Federal Airport act, plus $14,818,530 from the discretionary fund and $1,753,075 from funds apportioned to Alaska, Hawaii and Puerto Rico.

Of the total amount of $140,702,885 of federal and sponsor funds for the development and improvement of airports, the percentage of cost as related to land was 10% (the government participates only to the extent of 25% for land acquisition), 8% for buildings and 82% for other items.

A combined total of 4,728 airports in the U.S. was reported as of April 1, 1947, including: 958 subclass 1, 1,745 class 1, 777 class 2, 490 class 3, 758, class 4 and over. This total may also be broken down according to types of operation, as follows: commercial 2,124, municipal 1,484, CAA intermediate 198, military 760, all others 162, total 4,728.

**Air Navigation Aids.**—The broad picture in air navigation aids during 1947 concerned the changeover from low frequency to very high frequency in all U.S. airways communication and signal services. This change-over was important to every airport user whether the user was operating the biggest of commercial airliners or flying little two-place aeroplanes around an airport. The change-over, of course, was to be gradual. The CAA was scheduling the installation of new facilities as fast as funds and equipment would permit and it was anticipated that perhaps in 1950, possibly 1949, enough of the facilities would be changed over to warrant the gradual discontinuance of the old type of facilities. In the meantime, however, both would be operated.

As of Jan. 1, 1947, there were 43,387 mi. of "implemented" federal civil airways in the U.S. There were 10,600 mi. of "unimplemented" federal civil airways, together with ocean route mileage of 7,442. The total of all airways was 61,429 mi.; 38,610 mi. were under air traffic control and about 8,200 mi. were not controlled.

The U.S. had at hand the means to conquer the problem of bad-weather flying across country. The economic value of the knowledge is apparent in the regularity of air line schedules in spite of weather that used to be unflyable. The U.S. was embarking on an instrument landing aid program that would make landing at the destination possible in substantially any weather. For the future, the U.S. would have the instrument landing system, high intensity approach lights, precision beam radar equipment and possibly an initial service test installation for dispersing fog through heat, the system the British called Fido during World War II.

The instrument landing system (ILS) is in effect a four-element system consisting of a localizer beam for guiding the pilot right and left toward the centre line of the runway, a glide path for bringing him down to a safe lighting angle to the runway surface, radio marker beacons set along his approach path to tell him how close he is to the end of the runway, and high intensity lights along the immediate approach to the end of the runway. To supplement this system there was being used the radar system known as ground controlled approach to monitor ILS approaches, help prevent collisions in the vicinity of the field and for ground-controlled landings in emergencies and on request. (E. M. E.)

**Other Countries.**—The progress made in regard to airports and flying fields in Great Britain and Europe during 1947 was concerned more with landing aids, flying control and general amelioration rather than with any spectacular addition to the number of civil aerodromes; there was continued improvement of the ground organization of civil aviation. In Great Britain there were, however, 123 aerodromes available for civil aviation during 1947.

Radio aids to flying and the organization necessary for them, at the major aerodromes in Europe, were scheduled by the principal countries, and appropriate instructions were issued internationally. Aerodrome lighting made progress, and work went on in the installation of apparatus. This work was still in its early stages, and many experiments had still to be made in the type, colour, intensity and pattern of lighting. There also remained the general co-ordination internationally of methods and systems; work on this was being concentrated on the major international airports.

Air traffic control along the air routes and in the vicinity of aerodromes was still being worked out; much would depend on the experience gained in the practical application of this control during the winter months of 1947–48.

The laying down of permanent runways at the main European airports progressed as far as was possible under the difficult economic conditions which prevailed. At Heathrow, the London airport, 270 ac. of concrete runways were laid. Orly, the Paris aerodrome, was also able to report progress in this direction, while at Le Bourget, the other Paris aerodrome, work on the runways went on steadily. At Poland's main aerodrome, Okecie, at Warsaw, work on the terminal building was completed and two concrete runways, 5,904 ft. and 5,580 ft., went into service. Amsterdam adopted plans to extend Schiphol aerodrome by providing a new passenger terminal and administration building, and improved runways at a total estimated cost of $4,000,000. In Norway, Sola was chosen to be the main base for the Scandinavian air lines to North America. Sola was said to rank as one of the best aerodromes in Europe. Basle-Mulhouse, the joint French-Swiss aerodrome near the frontier, came into constant use; work on it went on during 1947 and it would eventually rank with the best aerodromes in Europe. In Ireland, Shannon airport was declared the world's first free airport.

In Italy the aerodromes near the principal cities were once again brought into use for civil aviation and were being used extensively by Italian and international air transport companies.

Much of the work done on European aerodromes was still repair of wartime bomb damage. (*See* also AVIATION, CIVIL; AVIATION, MILITARY.) (H. R. G.)

GROUND CONTROL APPROACH equipment being installed at the National airport, Washington, D.C., in Jan. 1947. G.C.A. sets in planes permit pilots to be "talked down" by ground operators making visual reference to radar scopes

NATIONAL AIR RACE CONTESTANTS, seen from a hangar at Cleveland, O., in Aug. 1947. Paul Mantz, flying a P-51 from Van Nuys, Calif., to Cleveland, won the Bendix trophy race for the second successive year

## Air Races and Records.

A three-day world air show held in the U.S. during 1947 was a demonstration of the army, navy and marine corps air strength, witnessed by top-ranking armed forces officers. While it was the only listed world event, it produced exhibitions only, rather than any winners.

The two classics still remained the Cleveland air races and the Miami All-American air manoeuvres. Paul Penrose of Venice, Calif., was top money winner at Miami, taking the $10,000 speed race. The Western Airlines pilot flew a converted P-51 Mustang and averaged 307.605 m.p.h. over the 15 mi. course. Charles Walling, Jr., of Houston, Tex., was second in a converted Lockheed F5G, averaging 304.740 m.p.h. Bruce Raymond, Hammond, Ind., placed third in a P-51 at an average of 302.775 m.p.h.

All the aircraft in this—the Miami All-American classic—were purchased by their civilian owners at army surplus sales. All craft had the certification of airworthiness from the Civil Aeronautics administration.

The national air races at Cleveland, O., drew the largest entry in the event's long history. A record total of 92 planes entered competition for $85,000 in prizes. The Thompson trophy race was won by Cook Cleland, averaging 396.1 m.p.h. and winning $19,500 of prize money; Richard Becker was second, 390.1 m.p.h., winning $8,100; J. Demming, 389 m.p.h., $4,600, third; Steve Beville, 360.8 m.p.h., $3,000, fourth; Tony Levier, 357.4 m.p.h., $2,000, fifth.

Paul Mantz won the Bendix trophy race and $10,000 with an average speed of 460.423 m.p.h.

The Goodyear trophy race was won by William Brennard, 22-year-old test pilot of Oshkosh, Wis., who travelled 165.857 m.p.h. to take the $25,000 midget classic. Mrs. Ruth Johnson won the Halle trophy for women pilots over a 75-mi. course. All contestants in this race flew At-6 advanced trainers. Mrs. Johnson made a speed of 223.3 m.p.h. for the 5 laps. Grace Harris of Kansas City was second, with an average of 215 m.p.h. Third was Mrs. Edna Gardner Whyte of Fort Worth, Tex., whose average was 210.7 m.p.h.

In a 200-mi. gliding contest, Dan Pollard of Roanoke, Va., soared from Elmira, N.Y., to Asbury Park, N.J., in a French-built craft called the Air-100.

Steve Beville also won the 105-mi. Kendall trophy, a part of the national air races, and thus added $2,500 to his earnings. His average was 384.6 m.p.h. (T. J. D.)

**A.L.A.:** *see* AMERICAN LIBRARY ASSOCIATION.

## Alabama.

Alabama, located in the heart of the "deep south" of the United States, was admitted to the union Dec. 14, 1819, as the 22nd state. It is popularly called the "Cotton State," or the "Yellowhammer State." Area: 51,609 sq.mi. (51,078 sq.mi. of land and 531 sq.mi. of water). In 1940 the total population of the state was 2,832,961. Of this number 1,849,097 were whites, 983,290 were Negroes and 574 were classified otherwise; 2,821,004 were native-born and 11,957 were foreign-born. In 1947 the total population of the state was estimated by the U.S. census bureau at 2,824,000. Montgomery, the capital city, in 1940 had a population of 78,084, Birmingham, the state's largest city, 267,583 and Mobile, the state's only seaport city, 78,720.

**History.**—The principal elective officials of the state in 1947 were: James E. Folsom, governor; J. C. Inzer, lieutenant governor; Albert A. Carmichael, attorney general; Dan Thomas, state auditor; Haygood Paterson, commissioner of agriculture and industries; Sibyl Pool, secretary of state; John Brandon, state treasurer; Austin R. Meadows, state superintendent of education. During 1947 there were two special sessions of the state legislature in addition to the regular biennial session. Most of the laws enacted were of local interest to the various counties. The principal matter of state-wide interest was the ratification by the voters of a constitutional amendment allowing certain earmarked income tax revenues to be used for educational purposes. It was believed this would be a great factor in helping to raise the state's educational standing.

**Education.**—During the academic year 1946–47 (ending June 30), the total number of public schools in the state was 3,914. Total enrolment for these schools was 648,894. Of this number 435,818 had primary school standings and 213,076 had secondary school standings. There were 12,432 elementary and 7,447 secondary teaching positions in public schools. There were 8 state institutions of higher learning with a total of 32,659 students enrolled and 1,137 teachers: University of Alabama; Alabama Polytechnic institute, Alabama State College for Women, Florence State Teachers college, Jacksonville State Teachers college, Livingston State Teachers college, Troy State Teachers college and Montgomery State Teachers college.

**Social Insurance and Assistance, Public Welfare and Related Programs.**—Amounts spent for public assistance categories in Alabama during the fiscal year 1946–47 (ending Sept. 30) and average number of recipients (in parenthesis) during 1946–47 were as follows: old age assistance $10,431,323.24 (48,916); aid to the blind $230,343.84 (968); aid to dependent children $2,916,223.10 (7,833); aid to children in foster care (county) $104,626.00 (538); aid to children in foster care (state) $47,139.14 (118); aid to handicapped $848,989.64 (4,553); temporary assistance $42,893.67 (189). During the fiscal year 1946–47 approximately 87,600 veterans were paid, under the G.I. Bill of Rights, unemployment compensation totalling $34,285,907.61. Approximately 56,700 nonveterans were paid unemployment compensation totalling $8,463,378.21. State correctional institutions are largely self-supporting. On Sept. 30, 1947, there were 25 state prisons with a white male population of 1,456, Negro male population of 2,543, white female population of 48 and Negro female population of 176 (total prison population 4,223). Total prison expenditures for the fiscal year 1946–47 were $3,699,408.74. At the close of the fiscal year (Sept. 30, 1947) there were 3 state reformatories with a population of 221 white males, 313 Negro males, 120 white females, 64 Negro females (total reformatory population 718). Total reformatory expenditures for the fiscal year 1946–47 were $466,196.82.

**Communications.**—The state highway system consisted of 7,317 mi. of road; the county system had 52,956 mi. of road, and there were approximately 4,000 mi. of municipal streets. For the fiscal year 1946–47 state expenditures for highways by the state highway department were $29,124,630.11. Estimated railroad mileage was 5,342. There were 8 airways with a total airway mileage of 1,233. The number of airports (including those owned by the U.S. war department) was 87. There were 280,000 estimated telephones in the state.

**Banking and Finance.**—On June 30, 1947, there were in Alabama 153 state banks and 1 branch, which had total deposits of $282,319,164.71 and total resources of $302,056,227.95; 67 national banks and 22 branches which had total deposits of $860,116,835.29 and total resources of $921,052,772.05. On Jan. 1, 1947, there were 18 federal savings and loan associations with total resources of $28,341,119 and 8 state savings and loan associations with total resources of $5,444,979. According to best available information, total net state government receipts in the fiscal year 1946–47 were $145,017,055.11; total net disbursements during that period were $144,152,964.36; state bonded indebtedness on Sept. 30, 1947, was $33,889,000; and cash and investment balances on the same date were $79,923,708.

**Agriculture.**—The total value of agricultural production for 1946 amounted to $501,734,000. The total acreage harvested in 1946 amounted to 6,450,000 ac. The cash income from sale of crops was $258,998,000; sale of livestock and livestock products amounted to $1,801,000; income from government payments was $7,509,000. Dry weather during the growing season of 1947 reduced the crop yield in all parts of the state, especially in the northern areas. Continued dry weather during the fall months, however, materially aided in the harvesting of crops.

Table I.—*Leading Agricultural Products of Alabama, 1947 and 1946*

| | 1947 | 1946 | Value, 1947 |
|---|---|---|---|
| Cotton, bales | 935,000 | 822,000 | $147,262,000 |
| Corn, bu. | 42,842,000 | 42,005,000 | 98,537,000 |
| Cottonseed, tons | 355,000 | 313,000 | 28,045,000 |
| Peanuts, tons | 146,900 | 130,000 | 27,911,000 |
| Hay, tons | 687,000 | 780,000 | 16,488,000 |
| Sweet potatoes, bu. | 5,084,000 | 5,225,000 | 11,947,000 |
| Oats, bu. | 5,083,000 | 5,537,000 | 5,845,000 |
| Irish potatoes, bu. | 3,330,000 | 4,646,000 | 4,862,000 |
| Peaches, bu. | 1,525,000 | 1,250,000 | 3,660,000 |
| Sugar cane syrup, gal. | 2,160,000 | 2,430,000 | 3,348,000 |
| Sorghum syrup, gal. | 1,680,000 | 1,827,000 | 2,520,000 |

**Manufacturing.**—The total estimated value of manufactures in Alabama in 1946 was $1,500,000,000. The 3,268 manufacturing establishments in 1946 had an average of 200,780 employees, to whom they paid wages of $371,631,113.

Table II.—*Principal Mineral Products of Alabama, 1945 and 1943*

| Mineral | Value, 1945 | Value, 1943 |
|---|---|---|
| Coal | $76,411,098 | $59,203,104 |
| Iron Ore | 13,701,737 | 19,870,480 |
| Stone | 3,326,753 | 3,178,908 |
| Cement | 8,146,139 | 11,265,088 |

**Minerals.**—The value of Alabama mineral production in 1944 was $108,460,000; in 1943 the value was $102,013,000. (J. E. Fm.)

**Alaska.** Alaska, northernmost territory of the United States, is located between the meridians of 130° W. and 173° E. longitude and between the parallels of 51° and 72° N. latitude. It has an area of 586,400 sq.mi. and an estimated population (1945) of 134,000, made up of about 60% whites and 40% Eskimos, Aleuts and Indians. Juneau (1940 est. pop. 5,748) is the capital and other principal cities are Ketchikan (4,601), Wrangell (1,142), Petersburg (1,288), Sitka (1,945), Seward (1939 census, 949), Anchorage (3,488), Fairbanks (3,304) and Nome (1,550).

**History.**—The legislature met in its regular biennial session in 1947. It revised its law code and enacted a law providing that the names of all candidates appear on the same ballot with designation as to the political party with which they are affiliated. It made appropriations of approximately $11,000,000. Revenues are raised from taxes on fisheries, mining, businesses, gasoline and a per capita on men of $5 per year from ages 21 to 55 and women in the same age bracket who are gainfully employed.

Under the veterans' bonus measure enacted by the legislature in 1946, Alaska veterans of World War II may obtain loans up to $10,000 at 4% interest to establish businesses, buy homes, farms, fishing boats, etc., or may elect to take a cash bonus of $10 per month for every month of service. Bonuses can be repaid and loans obtained, and when loans are paid new loans may be secured.

Principal officers of the territory are governor and secretary of Alaska, both appointed by the president; treasurer, auditor, attorney general, highway engineer and commissioner of labour, all elected; commissioner of health, commissioner of taxation, commissioner of agriculture, commissioner of mines and commissioner of education, all appointed. The governor in 1947 was Ernest Gruening.

**Education.**—There were 70 elementary schools in Alaska with an enrolment of 7,297 in the 1947 school year. The 24 high schools had an enrolment of 1,451; 96 day schools, an enrolment of 3,636, and 3 boarding schools maintained by the Alaska Native Service for Indian, Eskimo and Aleut children, an enrolment of 870. The University of Alaska, only institution of higher learning in the territory, is located at Fairbanks. It offers courses in agriculture, arts and letters, business administration, chemistry, engineering, education, general science, home economics, mining and premedicine. It had an enrolment in the fall of 1947 of 334.

**Social Insurance and Assistance, Public Welfare and Related Programs.**—Alaska has a liberal public welfare program. This includes old-age assistance, aid to dependent children and relief of destitution. In addition it has a Pioneers' home, located at Sitka, where aged persons may reside. Maximum assistance to the aged is $60 per month. The 1947 legislature appropriated $1,230,000 to carry on the welfare program for two years. Of this amount $750,000 was matched by federal funds under a cooperative agreement with the federal government.

**Finance.**—The territory had no bonded indebtedness. Its cash balance at the end of 1947 was $2,500,000. Its 14 territorial and federal banks had deposits of $60,000,000.

**Production.**—Alaska produced 4,142,199 cases of salmon in 1947 with

TASK FORCE "FRIGID," conducted by the U.S. army at Fairbanks, Alaska, early in 1947, proved that personnel was more adaptable to arctic warfare than equipment. Ladd field, near Fairbanks, is shown at high noon under an ice fog a value of $80,000,000. This was about 2,000,000 cases under normal production, but prices were high. Other fisheries such as halibut, cod, shrimp and crab had an estimated yield of $20,000,000. Annual return from fur is approximately $2,000,000. Mineral production was down in 1947, because of high costs and the inability of some properties to operate at profit. Gold production was around $7,000,000. There was some production of coal and platinum. (L. M. W.)

**Alaska Highway:** *see* ROADS AND HIGHWAYS.

**Albania.** A republic in the western part of the Balkan peninsula, along the Adriatic shore. Area: 10,629 sq.mi.; pop. (1946 est.): 1,120,500. Chief towns (pop. 1930 census): Tirana (cap., 30,806); Scutari or Shkodër (29,209); Koritsa or Korçe (22,787); Elbasan (13,796). Language: besides the literary Albanian, there are two dialects spoken, the Gheg north of the river Shkumbi and the Tosk in the south. Religions (1930 census): Moslem 688,280; Greek Orthodox 210,313; Roman Catholic 104,184. President of the republic and prime minister: Colonel General Enver Hoxha.

**History.**—The Communist-controlled government enjoyed its third year of office. During political trials, early in 1947, nine Albanians were sentenced to death for allegedly plotting to assassinate government officials, with the help of members of the British military mission. On May 15, parliamentary immunity was withdrawn from ten deputies of the peoples' assembly. On Sept. 27 nine of the deputies together with seven other accused were condemned to death for organizing acts of sabotage and terrorism against the state. The U.S. state department denied allegations that U.S. citizens were implicated in the affair. Dissension within the government itself was shown by the arrest and imprisonment of Sejfulla Maleshova, founder-member of the Albanian Communist party and later minister of information, together with the postwar Albanian representative in Italy, Colonel Kadri Hoxha. No reasons were given for these actions. On Oct. 4 Great Britain refused to hand over the Albanian subjects in Italy claimed as war criminals by the Albanian government. With considerable help from 156,000 tons of U.N.R.R.A. supplies valued at $27,450,000, the government was able to complete major tasks in its reconstruction program. All roads and bridges destroyed by the Germans were repaired, and work on the construction of a railway line was restarted. Demobilization of the 75,000 men in the Albanian national army was not begun and a law making military service obligatory was passed.

On March 26, following British protests to Albania over the mining of two destroyers in the Corfu channel, the soviet delegate at the Security council of U.N. vetoed a majority finding that an unnotified minefield in the Corfu channel could not have been laid without the knowledge of the Albanian government. Britain afterward referred the dispute to the International Court of Justice. (*See* also INTERNATIONAL COURT OF JUSTICE.)

During the year, the Albanian government continued its hostile attitude toward Britain and the U.S. On July 13 Premier Enver Hoxha stated that the British themselves might have laid the mines which damaged their destroyers in the Corfu channel. In denouncing the Marshall proposal, the deputy foreign minister stated: "This plan aims at dividing Europe in order to fulfil the Churchill plan of a western bloc." The Albanian government's attitude to the western democracies was summed up in the final words of a speech given by Premier Enver Hoxha on Oct. 7, "Be on your guard against the agents of imperialism. Our country is advancing and will always advance because it borders on Marshal Tito's Yugoslavia, who helps us to restore our economy and protects us, with U.S.S.R. help, against Anglo-U.S. intrigues." In July the premier paid an official visit to Moscow. As the outcome of this visit the Soviet Union granted Albania a credit with which to purchase industrial and agricultural equipment.

The Greek government's protests against Albanian violation of its northern frontiers, coupled with Greece's claim to part of south Albania, known as Northern Epirus, was the cause of bitter attacks by Albanian press and radio. (S. E. Ws.)

**Finance and Trade.**—On Dec. 11, 1946, the country formed a customs union with Yugoslavia; the Albanian lek is equal to the Yugoslav dinar.

**Communications.**—Work on railroads was begun in 1947, one line to link the port of Valona (Vlonë) with the Yugoslav system, and another planned to run from Tirana to the port of Durazzo. Telephone subscribers (1942) 1,119.

**Alberta.** Most westerly of the three prairie provinces of Canada, Alberta was created by parliament in 1905. The area is 255,285 sq.mi., of which 6,485 sq.mi. are water; pop. (1941) 796,169, (1947 est.) 822,000. Largest city is Edmonton, provincial capital, (1943) 131,050. Administered by a lieutenant governor, an executive council and a 63-member legislative assembly, Alberta is federally represented by 17 members of parliament and 6 senators.

**History.**—The Social Credit government announced in 1947 a surplus of $6,028,281, which resulted mainly from provincial liquor profits of $9,718,034, the highest in history. The gasoline tax was boosted from seven to nine cents a gallon. New minimum wage rates of $25 a week for men and $18 a week for women were established. Compulsory automobile accident insurance was introduced. Hutterite colonies were limited by legislation to 6,400 ac., with no colony nearer than 40 mi. to another. The government opened Alberta House in London, England, to facilitate migration of Britons and British industry to Alberta. The "Alberta Bill of Rights," invalidated in 1946 in part by the Alberta supreme court, was invalidated completely on an appeal to the privy council.

The discovery and successful development of the Leduc oil field, 18 mi. from Edmonton, was the biggest single provincial economic event of 1947. The first well blew in Feb. 13.

**Agriculture.**—In 1946 the gross value of grain crops was $243,000,000; dairy products were valued at $36,700,000; poultry production at $21,000,000. During 1947 Alberta farmers retired $39,734,000 of farm mortgage obligations. In 1946, 14,532,200 ac. were under field crops, the largest in provincial history. Total number of livestock (horses, cattle, sheep, swine) in 1946 was 4,270,000, while the 1944 high had been 5,648,000.

**Minerals.**—Coal production for 1946 was 8,734,696 short tons; for the first eight months of 1947 it was 797,204 tons below the similar period

OIL STORAGE TANKS at Leduc in Alberta, Canada, where ten firms were prospecting on farmlands believed to be rich in oil for 1946. Restrictions on coal-mining leases were lifted, reversing an 11-year policy, thus opening the province's estimated 61,000,000,000 tons of coal reserve to individual or company exploitation.

**Industry.**—The gross value of 1945 production was $599,366,498. Net value was $359,235,626, which was 5.9% of Canada's total. Per capita production was $434.91.

**Education.**—Enrolment in educational institutions for the 1944–45 school year totalled 172,567. Acute teacher shortages were relieved by a three-way government program: 200 annual scholarships of $200 each to encourage students to enter the profession; a 14% increase in teachers' pensions; increased school grants in Calgary and Edmonton. (C. Cy.)

## Alcohol, Industrial.

U.S. production of industrial alcohol—700,000,000 gal.—was higher in 1947 than in 1946 but did not reach the 1944-45 high total of 1,101,000,000 gal. The 1946 output was 403,700,000 gal. Tax-paid output was reported as 329,000,000 gal. to July 1, 1946, and 520,000,000 gal. for the following year. The amounts of grain used in alcohol making declined sharply in 1946-47 after prohibition of the use of any wheat and restrictions on other grains. Total grain used in 1946-47 was estimated at 162,000,000 bu. compared with 173,522,000 bu. in 1946 and 289,541,000 bu. in 1944-45. Only 227,000 bu. of wheat were used in 1946, left over from previous purchases; 66,700,000 bu. corn, 4,235,000 bu. rye, 86,900,000 bu. barley, 10,000,000 bu. potatoes and 3,820,000 bu. sorghum seed were also used.

Limitation of the manufacture of alcoholic beverages in late 1947 to save bread grains did not reduce the output of denatured alcohol. The demand for alcohol in the manufacture of artificial rubber continued. (J. C. Ms.)

**Alcoholic Intoxication:** *see* INTOXICATION, ALCOHOLIC.
**Alcoholic Liquor:** *see* BREWING AND BEER; LIQUORS, ALCOHOLIC; WINES.

## Alemán, Miguel

(1902– ), Mexican statesman, was born in Sayula, Veracruz state, the son of a shopkeeper who became a revolutionary general. Graduated in 1928 from the law school of the National University of Mexico, he was admitted to the bar in the same year. After a successful legal career, Alemán entered politics, becoming a member of the senate and governor of Veracruz state. In 1940 he managed Gen. Manuel Avila Camacho's presidential campaign; in 1946 he ran for president himself and was elected by an overwhelming majority. Inaugurated on Dec. 1, 1946, Alemán affirmed his faith in hemispheric unity, and on the domestic plane, he assured Mexican workers continued state protection.

On March 3, 1947, United States President Harry S. Truman made a state visit to President Alemán in Mexico City; on that occasion, Alemán extolled the U.S. president and said that foreign capital "with a proper respect for our laws" would be welcome. Returning the state visit (April 29–May 7), Alemán addressed a joint session of congress in Washington, D.C., on May 1 and warned that "democracy, if not backed by force, whets the appetites of dictators."

Foreign policy, however, was a subsidiary issue in his annual report to the Mexican congress (Sept. 1) in which the hoof-and-mouth disease was regarded as the government's gravest problem.

## Alexander of Tunis, Harold Rupert Leofric George Alexander,

1ST VISCOUNT, OF ERRIGAL (1891– ), British field marshal and governor-general of Canada, was born on Dec. 10, the third son of the fourth earl of Caledon. He was educated at Harrow and Sandhurst, and was commissioned in the Irish guards in 1911. He served on the western front during World War I; was twice wounded, five times mentioned in dispatches and received the distinguished service order and military cross.

At the beginning of World War II he led the 1st division in France, and was responsible for the successful evacuation of the British expeditionary force at Dunkirk. He was then appointed general officer commanding, southern command. In March 1942 he evacuated the British troops from Burma after the capture of Singapore. In Aug. 1942 he became commander in chief, middle east, and in Feb. 1943 deputy commander in chief, North Africa, to General Dwight D. Eisenhower. In Nov. 1944, in succession to General Sir Henry Maitland Wilson, he was appointed supreme Allied commander in the Mediterranean, where he led the Allied attack on Italy that resulted in the German surrender in May 1945. He was promoted field marshal as from June 4, 1944, the date of the fall of Rome, and in Jan. 1947 was created a viscount.

He took office as governor-general of Canada in April 1946. In June 1947 President and Mrs. Truman visited Ottawa as his guests, the first state visit ever made to Canada by a president of the United States.

## Alfalfa.

The United States alfalfa crop in 1947 was estimated at 33,475,000 tons of hay, slightly more than the 31,741,000 tons harvested in 1946 and above the average of 30,840,000 tons in the decade 1936-45. The second and third cuttings were good in the great plains region, but late cuttings were hurt by dry weather in the central states. The crops of the west were generally excellent, especially in California. Acreage harvested, estimated at 14,908,000, was practically the same as for 1946 and the 10-year average. Average yield was 2.25 tons per acre in 1947.

*U.S. Production of Alfalfa Hay in Leading States*
*1947, 1946 and 10-year Average, 1936–45*
(In thousands of tons)

| State | 1947 | 1946 | 10-yr. average | State | 1947 | 1946 | 10-yr. average |
|---|---|---|---|---|---|---|---|
| California . . . | 4,623 | 4,623 | 3,650 | Colorado. . . . | 1,333 | 1,255 | 1,291 |
| Wisconsin. . . . | 2,263 | 1,517 | 2,280 | Montana . . . . | 1,264 | 1,237 | 1,062 |
| Nebraska . . . | 2,058 | 1,735 | 1,308 | Utah. . . . . . | 931 | 893 | 972 |
| Idaho . . . . . | 2,007 | 2,010 | 1,950 | Ohio . . . . . | 803 | 840 | 892 |
| Kansas. . . . . | 1,981 | 1,569 | 1,209 | Oklahoma . . . | 800 | 607 | 515 |
| Minnesota . . . | 1,685 | 1,917 | 2,400 | Washington. . . | 740 | 809 | 728 |
| Michigan . . . . | 1,693 | 1,404 | 1,918 | Missouri . . . . | 736 | 792 | 644 |
| owa . . . . . . | 1,585 | 1,615 | 2,032 | Indiana . . . . | 722 | 690 | 799 |

The price of alfalfa hay advanced to an average of $21.90 per ton in Jan. 1947, then declined to about $18.00 per ton in August as the prospects for a large new crop appeared. By December the price was $20.40 reflecting the effort to reduce grain in livestock feeding.

The 1947 alfalfa seed crop was the second largest on record, estimated at 1,699,400 bu. compared with the all-time record of 1,822,400 bu. harvested in 1946. Acreage harvested was smaller than in 1946, but the average yield was 1.66 bu. per acre compared with 1.55 bu. in 1946. Alfalfa seed prices averaged $14.50 per bushel in the fall with a wide range between sections, from $22.30 per bushel in the east north central states to $11.30 in the south central. (*See* also HAY.) (J. C. Ms.)

**Algeria:** *see* FRENCH OVERSEAS TERRITORIES.
**Alien Property Custodian, Office of:** *see* FOREIGN INVESTMENTS IN THE UNITED STATES.

## Aliens.

**Alien Registration.**—The initial registration for aliens began on Aug. 27, 1940, and continued through Dec. 26, 1940. During this period 4,889,770 aliens registered as residents of continental United States. Factors determining the alien population are net immigration, naturalization and mortality. By using the true figures for immigration and naturalizations, and estimating the alien mortality for the period, it is possible to arrive at the approximate alien population. On such a basis it was estimated that there were approximately 3,000,000 resident aliens in continental United States on June 30, 1946. That estimate did not take into account those in the country temporarily; that is, nonimmigrants, border crossers and imported labourers.

**Naturalization.**—The number of aliens naturalized in the fiscal year 1947, 93,904, was the lowest since the period of World War I. Of the number naturalized, 16,462 were military and 77,442 civilian naturalizations. In the preceding year 150,062 persons were naturalized.

For the fiscal year 1947, 11,092 members or former members of the military and naval forces residing in the United States, Alaska, Hawaii, Puerto Rico and the Virgin Islands were naturalized on the basis of petitions filed with naturalization courts. In addition, a total of 5,370 persons serving abroad with the armed forces of the United States were admitted to citizenship by designated representatives of the immigration and naturalization service under the administrative process. Naturalizations were granted in the following areas: Germany 33; England 94; Italy 26; China 29; Mexico 64; American Samoa 140; Guam 248; Philippine Islands 4,652; all other countries 84. The number of aliens naturalized during the year ended June 30, 1947, is shown in the table.

*Aliens Naturalized During Year Ended June 30, 1947, by Countries or Regions of Former Allegiance*

| Country or Region of Former Allegiance | Total Naturalized | Civilian | Military In U.S. Under Sec. 701 | Military Abroad Under Sec. 702 |
|---|---|---|---|---|
| All countries | 93,904 | 77,442 | 11,092 | 5,370 |
| Austria | 1,930 | 1,882 | 43 | 5 |
| British Empire | 20,328 | 16,956 | 3,278 | 94 |
| China | 831 | 479 | 323 | 29 |
| Czechoslovakia | 2,239 | 2,110 | 121 | 8 |
| Germany | 10,703 | 10,313 | 357 | 33 |
| Greece | 1,847 | 1,729 | 117 | 1 |
| Hungary | 1,595 | 1,556 | 34 | 5 |
| Italy | 11,516 | 10,680 | 810 | 26 |
| Mexico | 3,336 | 1,636 | 1,636 | 64 |
| Philippines, Republic of the | 10,764 | 3,510 | 2,602 | 4,652 |
| Poland | 6,495 | 6,223 | 269 | 3 |
| Union of Soviet Socialist Republics | 3,562 | 3,407 | 154 | 1 |
| Yugoslavia | 1,258 | 1,176 | 79 | 3 |
| Other countries | 17,500 | 15,785 | 1,269 | 446 |

Throughout the year 3,953 petitions for naturalization were denied, as compared with 6,575 petitions denied during the previous year. There were 94 judgments of naturalization revoked and certificates of naturalization cancelled during the year, a reduction of 92 as compared with the preceding fiscal year. In 78 cases the foreign service of the department of state initiated the action because the naturalized citizens of the United States became permanent residents of foreign countries within five years after naturalization. In 16 cases the immigration and naturalization service initiated action because naturalization was otherwise fraudulently or illegally procured.

Nationality may be lost involuntarily through conviction of treason against the United States, conviction by court-martial of desertion from the armed forces of the United States in time of war and as the result of such conviction the person is dismissed or dishonourably discharged from such forces; departing or remaining away from the United States in time of war to avoid training and service in the land or naval forces, and by protracted residence abroad of naturalized citizens. It may be lost voluntarily by naturalization in a foreign state, or the performance of certain other acts identified with citizenship of a foreign state. During the fiscal year 6,758 persons thus lost United States nationality. In addition, there were approximately 4,500 American-born Japanese who had been naturalized in Japan. There was, also, an unknown number of persons who lost United States citizenship by reason of their failure to make a timely return to the United States.

Petitions for naturalization were filed by 88,802 persons, a decrease of 28% from the 1946 fiscal year, when 123,864 petitions were filed. Declarations of intention filed increased to 37,771. There were 28,787 declarations filed in the fiscal year 1946; 31,195 in 1945; 42,368 in 1944; and 115,664 in 1943.

**Alien Enemies.**—Alien enemies include natives, citizens, denizens, and subjects of countries with which the United States was at war—Japan, Germany, Italy, Hungary, Rumania and Bulgaria.

The beginning of the fiscal year 1947 found 1,539 alien enemies in the custody of the service, of whom 1,165 were in custody under alien enemy proceedings and 374, in whose cases alien enemy proceedings had been terminated, were in custody under immigration proceedings. During the year 180 additional persons were received (including five born at the internment camps), while 758 departed from detention facilities—34 under presidential removal orders; 29 as repatriates (including 14 Germans, 14 Japanese and one other); 215 preremoval parolees; 477 releases; and 3 deaths, leaving 587 under alien enemy proceedings at the close of the fiscal year, of whom 307 were in custody at the expense of the service and 280 on work projects. This figure was made up of 203 Germans and 384 Japanese. During the year ended June 30, 1947, 280 Japanese internees were placed with the Deerfield Packing corporation, Seabrook Farms, N.J., as voluntary workers for current wages under a form of relaxed internment, while 171 were paroled to the same employer. The only remaining internment camp was that located at Crystal City, Tex., which had a population at the close of the year of two German adults, 105 Japanese adults and 71 Japanese juveniles.

Litigation testing the legality of the Alien Enemy act of 1798 (50 U.S.C. 21–23) and the presidential proclamation issued thereunder had prevented removals of alien enemies from actually being effected in all but relatively few cases. Litigation had prevented removal in the cases of 460 Japanese who renounced their United States citizenship pursuant to section 401(i) of the Nationality act of 1940, as amended, and of 159 alien Japanese who were residents of the United States at the outbreak of World War II.

**New Legislation.**—The act of Aug. 9, 1946 (public law 707) provided for the continuance of the farm labour program through June 30, 1947.

The act of April 28, 1947 (public law 40) extended the farm labour program to Dec. 31, 1947. Under this act alien labourers were allowed to be imported, and those already in the U.S. were allowed to remain until Dec. 31, 1947, under certain conditions.

The act of May 16, 1947 (public law 66) amended section 327(h) of the Nationality act of 1940 so as to permit photographic services on government property for the benefit of persons seeking to comply with requirements under the immigration and nationality laws.

The act of May 31, 1947 (public law 81), amended the Nationality act of 1940 so as to permit naturalization proceedings for sick or physically disabled persons to be held at places other than the office of the clerk of court or in open court.

The act of June 28, 1947 (public law 126), extended from June 30, 1947, to Dec. 31, 1947, the act facilitating the admission of alien fiancées or fiancés of citizen members of the armed forces of the United States.

The act of July 1, 1947 (public law 155), corrected an error in section 342(b)(8) of the Nationality act of 1940 by making 50 cents the minimum rather than the maximum fee for information from copies of the service records.

The act of July 22, 1947 (public law 213), amended the "War Brides" act of Dec. 28, 1945, by extending the benefits to spouses of racially ineligible races if they were married to United States citizens before or within 30 days after the passage of the act.

The act of July 23, 1947 (public law 221), provided for the issuance of certificates of citizenship to certain Metlakahtlan Indians of Alaska who acquired United States citizenship under the act of May 7, 1934.

The act of July 30, 1947 (public law 274), amended section 12 of the Immigration act of 1917. This amendment gives the attorney general and the commissioner authority to prescribe the contents of manifests. This means that the manifest, formerly required by law to delineate 35 different items about each alien arriving at a port of the United States by ship, could be reduced to contain only identifying information since the other necessary data are in the documents of admission. In co-operation with the state department, the code of federal regulations was amended to provide for the use of the duplicate and triplicate copy of the visa application as a document used for certifying to the admission and departure of aliens. (*See* also LAW.) (W. B. MI.)

**Great Britain.**—The number of aliens registered with the police at the latest date in 1947 for which figures were available was 313,254 (males, 181,360; females, 131,894). (The figure at Nov. 1, 1946, was 257,742.) The principal nationalities represented were: American, 14,743; Austrian, 13,294; Belgian, 9,362; Chinese, 9,482; Czechoslovak, 8,199; Dutch, 10,521; French, 13,498; German, 27,893; Italian, 17,245; Latvian, 9,303; Norwegian, 6,387; Polish, 76,535; Russian, 37,486; and Swiss, 11,862. Members of the diplomatic and consular services of foreign governments, members of the British and Allied forces on leave for less than 16 days, British protected persons, short-term visitors and women who had lost their British nationality by reason of marriage were all exempt from registration and are not included in these figures.

The following is a comparative table of foreign traffic at United Kingdom ports:

| | July 1945 | July 1946 | July 1947 |
|---|---|---|---|
| Aliens Entering . . . . . . . . | 8,880 | 37,096 | 85,278 |
| Aliens Leaving . . . . . . . . . | 13,697 | 29,208 | 60,277 |

The settlement of Poles for whom the British government assumed responsibility proceeded throughout the year. Approximately 200,000 Polish servicemen had been brought to the United Kingdom and, of these, 102,000 had either volunteered to return to Poland or were actually repatriated. In addition, about 13,500 dependents arrived in Great Britain and more than 18,000 were still to come.

Between Jan. 1 and Nov. 30, 1947, 13,634 applications for naturalization were lodged; this compares with a yearly average of 1,708 before World War II. The number of certificates granted during the same period was 16,838. The rate of naturalization was officially stated to be 18,000 a year. Up to Oct. 31, 1947, 162 persons had been deported under deportation orders made during the year. (P. T. H.)

## Alimentary System, Disorders of.

**The Oesophagus.**—Difficulty in swallowing may be due to a variety of causes, some of them familiar, others obscure or infrequent, like bulbar and pseudobulbar paralysis, involving the upper part of the spinal cord, and myasthenia gravis, a general weakening of the muscles, and severe vitamin deficiency states. In the last-named group, one may properly include a disturbance termed the Plummer-Vinson syndrome, reports concerning which figured prominently in U.S. and Scandinavian medical literature during 1947. M. Savilahti stated that the features common to the disease are difficulty in swallowing and anaemia and that the majority of the patients are middle-aged or elderly women.

There was a paucity of reports bearing on the pathologic changes in the Plummer-Vinson syndrome, so that the contribution of Savilahti was welcome. Former reports noted that enlargement of the spleen was present in as high as 18% of cases of thickening of the wall of the oesophagus. Small degenerated areas, chronic oesophagitis and small areas of ulceration in all parts of the organ were also observed. Several investigators demonstrated mucosal webs and strictures. Scandinavian observers confirmed the presence of strictures when the syndrome is advanced, along with dilatation of the oesophagus. An apparent decrease in the frequency of occurrence of this disease in the United States was noted and was attributed to the generally improved nutritional state of the populace brought about by more favourable economic conditions.

TYPICAL HABITAT of snails which are hosts of *Schistosoma*, an Asiatic blood fluke; about 5% of the snails taken from this marsh on Leyte Island were infected with blood flukes. The boy in the foreground has the protruding abdomen typical of persons with schistosomiasis

**Stomach and Duodenum.**—The mechanism of pain in ulcer of the stomach and duodenum had been a subject of extensive research and controversy, and in the opinion of many the problem still awaited solution. G. L. W. Bonney and G. W. Pickering, confirming and amplifying the results of Walter L. Palmer, presented evidence that the pain is due to the action of a sufficient concentration of hydrogen ions for a sufficient time on a defective gastric or duodenal wall through chemical stimulation of pain nerve endings exposed in the crater of the ulcer.

Are gastric ulcer and duodenal ulcer different diseases? Franklin Hollander noted factors which distinguish patients with gastric ulcer from those with duodenal ulcers; namely, the latter have a greater secretory volume, greater concentration of acid and pepsin in the gastric juice, greater neuromuscular activity and greater intensity of pain. He also commented on differences in ages according to sex of the patient at the time of the onset of symptoms and on the relative sizes of gastric ulcer and duodenal ulcer, gastric ulcer being considerably larger. Hollander concluded that there is no fundamental difference in these two types of ulcer and that the different clinical manifestations must be considered to be the results of the location of the lesions.

Because subtotal or partial gastrectomy is considered to be the method of choice for the surgical treatment of peptic ulcer, unfavourable results are of great concern to physician and patient alike. Such results occur roughly in 15% of patients, and the resulting disturbances may be immediate or later after meals. When the disturbances are characterized by pain or haemorrhage or both, investigation usually discloses the presence of an ulcer at the place where the surgical joining of the tissues is done or around this site or diffuse inflammation of the stomach. In a second group, the disturbances in all probability are the direct result of rapid emptying of the stomach, giving rise, after meals, to early and late manifestations of a local as well as a systemic nature. Late manifestations are attributed to a reaction to insufficient sugar in the blood; early ones, to various causes. The conception of shock caused by too much sugar, by R. M. Zollinger and his associates, as the explanation for the immediate symptoms was challenged in some quarters, since there is no other condition known in which excess sugar would lead to similar symptoms of shock.

**Liver.**—Medical literature continued to be replete with reports of acute infectious hepatitis and similar conditions such as hepatitis resulting from serum transfusion and inoculation hepatitis. It had been freely predicted that an increasing number of the latter two types of hepatitis would occur in civilian life during the postwar period; consequently, it was urged that extra precautions be taken in the choice of blood donors and blood products, especially pooled ones, and in the sterilization of syringes and needles. The observations of I. H. Scheinberg and his associates, as well as those of L. T. Rosenthal, justified such predictions and the necessity for proper precautions.

Numerous articles on diseases of the liver dealt with infection by the Asiatic blood fluke, *Schistosoma japonicum,* because U.S. armed forces had been greatly exposed to this parasite during the campaign in Leyte. As high as 80% of U.S. army engineers engaged in the building and repairing of bridges were infected with the fluke. The liver, spleen, intestines and even the brain may become involved. Although this type of infection had not occurred on the North American continent, since the mollusc carrier of the flukes was absent, the disease might arise in the United States if the patient were to arrive by rapid air travel from endemic areas, or if the disease had been asymptomatic, undiagnosed or not completely cured by treatment. Earl Carroll Faust stated that the condition of more than 1,000 patients had been studied at army general hospitals in the United States a year after the first exposure, and this authority surmised that in a considerably larger group of patients the condition thus far had escaped diagnosis.

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## Allergy.

The interest of investigators in the effectiveness of the antihistamine drugs was maintained in 1947. J. M. Rose, A. R. Feinberg, S. Friedlaender and S. M. Feinberg concluded from comparison of four different antihistaminic drugs that there was a similarity in their capacity to protect guinea pigs against a fatal dose of histamine and against a severe allergic reaction (anaphylaxis). As the dose of each drug was decreased, the protection of the animal was proportionately reduced.

The efficacy of benadryl for protecting human beings against hives produced experimentally by the injection of histamine into the skin was demonstrated by M. B. Cohen and his coworkers. When benadryl was injected before the histamine was given, the occurrence of a local wheal was prevented unless a high dose of histamine was used. This observation was partly confirmed in patients with spontaneous (nonexperimental) hives by F. W. Lynch, who used benadryl in patients with itching skin lesions of various types. Four of 10 patients with acute hives were relieved in 24 hr., while 21 of 23 patients with chronic hives had varying degrees of relief through use of benadryl. Itching from insect bites and severe itching of undetermined causes of the genitalia in the female was relieved in 60% of the cases. Patients with severe itching caused by such conditions as contact dermatitis and neurodermatitis were not relieved. These observations indicated that the effect of the antihistamine drugs is to relieve, not cure, symptoms of mild to moderate severity.

Hives caused by sensitivity to sunlight had heretofore been resistant to all measures except avoidance of exposure. L. Rubin, P. L. Beal and S. Rothman reported a sixfold increase in tolerance to sunlight in patients who received one of the antihistamine drugs (pyribenzamine) before exposure to the sun.

The antihistamine drugs were again found ineffective for the relief of asthma. In a study of 16 such patients L. Levy II and J. H. Seabury found these drugs less effective than such older remedies as aminophyllin and epinephrine.

In France, where the antihistamine drugs were first synthesized and tried, B. N. Halpern, one of the original investigators of these drugs, described a new group of compounds with similar properties. These were the thiodiphenylamine derivatives. They appeared to be more effective in guinea pigs than previous preparations. One of these was 400 times more potent than antergan, one of the older drugs, in its ability to protect the animals against histamine, and 5 times as potent in its protection of guinea pigs against anaphylaxis. It should be emphasized that these compounds were not tried on humans and that the response of allergy in humans is not necessarily in proportion to the response of animals to these drugs.

Unpleasant and occasionally dangerous effects may be produced by the antihistamine drugs. B. B. Wyndham and M. E. B. Owen, Jr., reported a serious reduction in white blood cells (agranulocytosis) associated with high fever in one patient who was given pyribenzamine. Recovery resulted after the withdrawal of the drug and the use of penicillin. J. Geiger, S. J. Rosenfeld and D. L. Hartman reported severe symptoms of palpitation, dimness of vision, malaise, drowsiness and finally unconsciousness with symptoms resembling shock in a patient who had received only 6 capsules (300 milligrams) of benadryl. Seven days after recovery the symptoms were reproduced when the drug was given again for relief of an itching skin.

Severe allergic reactions were again reported following the use of virus vaccines. The common method for preparing such vaccines is to grow them in the chicken egg embryo. The resulting product contains, as a contaminant, a variable amount of egg protein. Patients who are egg sensitive may have serious reactions following the injection of the vaccine. S. F. Hampton described two instances of severe, almost fatal, reactions following injections of typhus and cholera vaccines. Both patients gave a history of egg sensitivity and had positive skin reactions when tested with egg white. The danger from virus vaccines prepared in this manner was further emphasized by L. L. Engel and R. J. Randall. These workers found a high percentage of egg white proteins in various equine encephalomyelitis vaccines. Purified vaccines contained considerably less of these undesirable contaminants.

BIBLIOGRAPHY.—L. Rubin, P. L. Beal and S. Rothman, "A Method for Protection of Patients with Solar Urticaria," *J. Invest. Dermat.,* 8:189 (April 1947); B. N. Halpern, "Experimental Research on a New Series of Chemical Substances with Powerful Antihistaminic Activity: The Thiodiphenyl Amine Derivatives," *J. Allergy,* 18:263–273 (July 1947); S. F. Hampton, "Anaphylactic Shock in Egg Sensitive Individuals Following Vaccination with Typhus Vaccine," *J. Lab. & Clin. Med.,* 32:109–117 (Feb. 1947). (B. Z. R.)

**Allied Council for Japan:** *see* JAPAN.

**Allied Military Government:** *see* OCCUPIED AREAS, ADMINISTRATION OF.

**Allocations and Allotments:** *see* PRIORITIES AND ALLOCATIONS.

**Alloys:** *see* BERYLLIUM; MAGNESIUM; METALLURGY; MOLYBDENUM; MONAZITE; NICKEL; TITANIUM; VANADIUM.

**Almonds:** *see* NUTS.

**Aluminum.** World production of aluminum reached the peak of war demand in 1943 and subsequently dropped to about the 1940 level. During the war years there were several additions to the list of minor producers, including China, India, Rumania, and Brazil, where operations were later discontinued, and a new reduction planned for Tasmania.

Table I.—*World Production of Aluminum*

(Thousands of short tons)

| | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|---|
| Austria | 7.3 | 24.7 | 41.5 | 50.7 | 57.5 | 5.8 | 1.1 |
| Canada | 109.1 | 213.9 | 340.6 | 495.8 | 462.1 | 215.7 | 193.4 |
| France | 68.1 | 70.5 | 49.9 | 51.2 | 28.8 | 41.0 | 52.4 |
| Germany | 225.7 | 234.0 | 250.4 | 223.8 | 210.2 | 22? | ... |
| Great Britain | 21.3 | 25.2 | 52.3 | 62.3 | 39.7 | 35.7 | 35.3 |
| Italy | 42.8 | 53.1 | 50.0 | 38? | 50? | 2.8 | 11.7 |
| Japan | 34.8 | 61.8 | 93.9 | 125.7 | 97.3 | 6.0 | ... |
| Norway | 30.6 | 19.3 | 22.6 | 25.9 | 22.1 | 7.7 | 18.3 |
| Switzerland | 30.9 | 26.7 | 26.5 | 22.0 | 37.4 | ? | ? |
| U.S.S.R. | 66.1 | 55.1 | 60.6 | 68.7 | 78.3 | 95.1 | ? |
| United States | 206.3 | 309.1 | 521.1 | 920.2 | 776.4 | 495.1 | 409.6 |
| Others | 24.5 | 35.3 | 38.7 | 60.8 | 54.9 | ? | ? |
| Total | 867.5 | 1,128.7 | 1,548.1 | 2,145.1 | 1,914.7 | 977.8 | 827. |

**United States.**—Following the sale or lease of the various government-owned war facilities, there were in 1947 three producers, with production capacities divided as follows: Alcoa 51%, Reynolds 29% and Kaiser 20%, with a total of 649,000 short tons. In addition to the privately owned plants, the government still retained an unleased capacity of 234,000 tons.

Table II.—*Data of Aluminum Industry in U.S., 1940-45*

(Thousands of short tons)

| | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 |
|---|---|---|---|---|---|---|
| Production, primary | 206.3 | 309.1 | 521.1 | 920.2 | 776.4 | 496.5 |
| Imports | 17.4 | 13.4 | 112.1 | 135.6 | 100.9 | 334.1 |
| Exports | 26.9 | 7.4 | 38.7 | 117.6 | 188.1 | 5.7 |
| Producers' stocks | −30.2 | +12.2 | +5.5 | +60.8 | −55.3 | +28.8 |
| Available new supply | 227.0 | 302.8 | 589.0 | 877.4 | 744.6 | 796.1 |
| Secondary recovery | 80.4 | 106.9 | 196.5 | 314.0 | 325.6 | 298.4 |
| Total supply | 307.4 | 409.7 | 785.5 | 1,191.4 | 1,070.1 | 1,094.5 |

Following the close of the war, production dropped to a low point in the last quarter of 1945 and the first quarter of 1946, when production was only about 150,000 tons in the six months. During the last half of 1946 the production rate was stepped up to more than 500,000 tons a year, and in the first half of 1947 to more than 600,000 tons. There was some decline in output in the third quarter, and the total for the first three quarters of 1947 was 436,741 short tons, against 409,630 tons in the full year 1946. (*See* also METALLURGY.) (G. A. Ro.)

**Ambassadors and Envoys.** The following is a list of ambassadors and envoys to and from the United States and to and from Great Britain Jan. 1, 1948.

*To and From the United States*

| To the United States | Country | From the United States |
|---|---|---|
| Aziz, Abdol Hosayn | Afghanistan | Palmer, Ely E. |
| *Ivanissevich, Dr. Oscar | Argentina | *Bruce, James M. |
| *Makin, Norman J. O. | Australia | *Butler, Robert |
| Kleinwaechter, Dr. Ludwig | Austria | Erhardt, John G. |
| *Silvercruys, Baron | Belgium | *Kirk, Adm. Alan G. |
| *Martinez Vargas, Don Ricardo | Bolivia | *Flack, Joseph |
| *Martins, Carlos | Brazil | *Pawley, William D. |
| Mevorah, Dr. Nissim Judasy | Bulgaria | Heath, Donald R. |
| *So Nyun, U | Burma | *Huddle, J. Klahr |
| *Wrong, Hume | Canada | *Atherton, Ray |
| *Nieto del Rio, Felix | Chile | *Bowers, Claude G. |
| *Koo, Dr. V. K. Wellington | China | *Stuart, J. Leighton |
| *Restrepo-Jaramillo, Dr. Don Gonzalo | Colombia | *Beaulac, Willard L. |
| *Gutiérrez, Don Francisco de P. | Costa Rica | *Davis, Nathaniel P. |
| *Belt, Guillermo | Cuba | *Norweb, R. Henry |
| *Slávik, Dr. Juraj | Czechoslovakia | *Steinhardt, Laurence A. |
| *Kauffmann, Henrik de | Denmark | *Marvel, Josiah, Jr. |
| *Thomen, Dr. Luis Francisco | Dominican Rep. | *Butler, George H. |
| *Dillon, Augusto | Ecuador | *Simmons, John F. |
| *Hassan, Mahmoud | Egypt | *Tuck, S. Pinkney |
| Nunan, Sean | Eire | Garrett, George A. |
| Kaiv, Johannes[1] | Estonia | (Legation at Tallinn closed) |
| Imru, Ras H. S. | Ethiopia | Merrell, George R. |
| Jutila, Dr. Kalle T. | Finland | Warren, Avra M. |
| *Bonnet, Henri | France | *Caffery, Jefferson |
| | Germany | Murphy, Robert D.[2] |
| *Lord Inverchapel | Great Britain | *Douglas, Lewis W. |
| *Dendramis, Vassili C. | Greece | *MacVeagh, Lincoln |
| †Linares Aranda, Don Francisco | Guatemala | *Kyle, Edwin Jackson |
| *Charles, Joseph D. | Haiti | *Tittmann, Harold H., Jr. |
| *Cáceres, Dr. Don Julián R. | Honduras | *Bursley, Herbert S. |
| Vámbéry, Rustem | Hungary | Chapin, Selden |
| Thors, Thor | Iceland | Trimble, William C.[3] |
| *Asaf Ali, M. | India | *Grady, Henry F. |
| *Ala, Hussein | Iran | *Allen, George V. |
| *Jawdat, Ali | Iraq | *Wadsworth, George |
| *Tarchiani, Alberto | Italy | *Dunn, James Clement |
| | Japan | Sebald, William J.[4] |
| | Korea | Jacobs, Joseph E.[5] |
| Bilmanis, Dr. Alfred | Latvia | (Legation at Riga closed) |
| Malik, Dr. Charles | Lebanon | Pinkerton, Lowell C. |
| King, Charles D. B. | Liberia | Lanier, Raphael O'Hara |
| Žadeikis, Povilas | Lithuania | (Legation at Kaunas closed) |
| Le Gallais, Hugues | Luxembourg | Kirk, Adm. Alan G. |
| *Espinosa de los Monteros, Dr. Don Antonio | Mexico | *Thurston, Walter |
| | Morocco | Plitt, Edwin A.[6] |
| *Kleffens, E. N. van | Netherlands | *Baruch, Herman B. |
| Berendsen, Sir Carl | New Zealand | Scotten, Robert M. |
| *Sevilla Sacasa, Dr. Don Guillermo[7] | Nicaragua | Rose, Halleck L.[8] |
| *Munthe de Morgenstierne, Wilhelm | Norway | *Bay, Charles U. |
| *Ispahani, M. A. H. | Pakistan | *Alling, Paul H. |
| †Chevalier, Don Eugenio J. | Panamá | *Hines, Brig. Gen. Frank T. |
| *Enciso, Dr. Don Guillermo | Paraguay | *Warren, Fletcher |
| Fernández-Dávila, Dr. Don Humberto | Peru | *Cooper, Prentice |
| *Elizalde, Joaquin M. | Philippines, Republic of the | *O'Neal, Emmet |
| *Winiewicz, Jozef | Poland | *Griffis, Stanton |
| *Theotónio Pereira, Pedro | Portugal | *Wiley, John C. |
| Ralea, Mihai | Rumania | Schoenfeld, Rudolf E. |
| *Castro, Dr. Don Héctor David | Salvador, El | *Nufer, Albert F. |
| Al-Faqih, Sheikh Asad | Saudi Arabia | Childs, J. Rives |
| *Waithayakon, H.R.H. Prince Wan[7] | Siam | *Stanton, Edwin F. |
| Andrews, H. T. | South Africa, Union of | Holcomb, Gen. Thomas |
| Baraibar, Don Germán | Spain | Culbertson, Paul T.[9] |
| *Eriksson, Herman | Sweden | *Matthews, H. Freeman |
| Bruggmann, Charles | Switzerland | Vincent, John Carter |
| El-Khouri, Faiz | Syria | Keeley, James Hugh, Jr. |
| *Baydur, Hüseyin Ragip | Turkey | *Wilson, Edwin C. |
| *Panyushkin, Alexander Semenovich | U.S.S.R. | *Smith, Lt. Gen. Walter Bedell |
| *Blanco, Dr. Juan Carlos | Uruguay | *Briggs, Ellis O. |
| *Carnevali, Dr. Gonzalo | Venezuela | *Donnelly, Walter J. |
| | Yemen | Childs, J. Rives |
| *Kosanovic, Sava N. | Yugoslavia | *Cannon, Cavendish W. |

*Ambassador.

†Chargé d'affaires *ad interim*.

[1] Acting consul general.

[2] U.S. political adviser; with the personal rank of ambassador.

[3] First secretary; consul.

[4] Counsellor of mission.

[5] U.S. political adviser.

[6] Diplomatic agent; consul general; with the personal rank of minister.

[7] No recognized government as of Nov. 30, 1947.

[8] Second secretary; consul.

[9] First secretary.

*To and From Great Britain*

| To Great Britain | Country | From Great Britain |
|---|---|---|
| Sardar Mohammad Naim | Afghanistan | Squire, Sir Giles F. |
| *Labouglé, Dr. Ricardo de | Argentina | *Leeper, Sir Reginald, W. A. |
| Schmid, Heinrich | Austria | Mack, Sir Henry |
| *de Thieusies, Vicomte Alain O. | Belgium | *Rendel, Sir George |
| *Solares, Napoleon | Bolivia | *Rees, Thomas Ifor |
| *Aragão, J. J. Moniz de | Brazil | *Butler, Sir Neville |
| Dolatchev, Nicholas | Bulgaria | Sterndale-Bennett, John Cecil |
| *Bianchi, Manuel | Chile | *Leche, John H. |
| *Tien-hsi, Dr. Cheng | China | *Stevenson, Sir Ralph C. S. |
| *Echandía, Dr. Darío | Colombia | *MacKereth, Gilbert |
| Castro, Don Guillermo | Costa Rica | Sullivan, Bernard Ponsonby |
| Riva y Abreu, Miguel | Cuba | Dodds, James L. |
| *Kratochvil, Dr. Bohuslav | Czechoslovakia | *Dixon, Pierson John |
| *Reventlow, Count Eduard | Denmark | *Randall, Alec W. G. |
| Pastoriza, Andrés | Dominican Rep. | Macrae, Russell D. |
| Lafronte, Homero V. | Ecuador | Carvell, John Eric Maclean |
| *Amr Pasha, Abdel Fattah | Egypt | *Campbell, Sir Ronald I. |
| Medhen, Blatta Ephrem T. | Ethiopia | Farquhar, Harold L. |
| | Faeroe Islands | †Flaymaker, Harold Ernest |
| Wuori, Eero A. | Finland | Scott, Oswald Arthur |
| *Massigli, René | France | *Harvey, Sir Oliver Charles |
| *Léon V. Melas | Greece | *Norton, Sir Clifford |
| Ydigoras Fuentes, Gen. Miguel | Guatemala | Gallienne, Wilfred H. |
| Alexis, Stephen | Haiti | Routh, Augustus C. |
| | Honduras | Fowler, Rees J. |
| Bede, István | Hungary | Helm, Alexander K. |
| Thorvardsson, Stefán | Iceland | Baxter, Charles William |
| *Mohsen Räis | Iran | *Le Rougetel, Sir John H. |
| *Al-Emir Zeid Ibn Al-Hussein | Iraq | *Stonehewer Bird, Sir Hugh |
| Gallarati-Scotti, Duke Tommaso | Italy | *Mallet, Sir Victor |
| | Japan | ‡Gascoigne, Alvary D. F. |
| Khoury, Dr. Victor | Lebanon | Houstoun-Boswall, William E. |
| de Lynden, Baron Robert A. | Liberia | Bowering, J. |
| | Liechtenstein | §Cable, Eric Grant |
| Clasen, André | Luxembourg | *Rendel, Sir George |
| *O'Farrill, Federico Jiminez | Mexico | *Rapp, Thomas Cecil |

*To and From Great Britain—Continued*

| To Great Britain | Country | From Great Britain |
|---|---|---|
| §Le Mesurier, R. | Monaco | |
| | Morocco | §Mallet, William Ivo |
| *Gen. Shingha Shumshere Jung Bahadur Rana | Nepal | *Falconer, George A. |
| *van Verduynen, Jonkheer E. Michiels | Netherlands | *Nichols, Sir Philip |
| Herdocia, Dr. Don Constantino | Nicaragua | Robertson, A. W. |
| *Prebensen, Per Preben | Norway | *Collier, Sir Lawrence |
| Porras, Dr. Demetrio A. | Panamá | Greenway, John Dee |
| Aguilera, Andrés | Paraguay | Fell, J. R. M. |
| *Berckemeyer, Fernando | Peru | *Roberts, Walter St. C. H. |
| | Philippines, Republic of the | Foulds, Linton |
| *Michalowski, Jerzy | Poland | *Gainer, Sir Donald St. C. |
| *Duke of Palmella | Portugal | *Ronald, Sir Nigel |
| | Rumania | Holman, Adrian |
| Dawson, Samuel Jorge | Salvador, El | Mayers, N. |
| ‖Jamieson, Melvill A. | San Marino | |
| Sheikh Hafiz Wahba | Saudi Arabia | Trott, Alan Charles |
| *Nai Direck Jayanama | Siam | *Thompson, Geoffrey H. |
| *Bárcenas y Lopez, Domingo de Las | Spain | ¶Howard, Douglas Frederick |
| *Boheman, Erick | Sweden | *Jerram, Sir Bertrand |
| Ruegger, Paul | Switzerland | Snow, Thomas M. |
| al Armanazi, Dr. Najeeb | Syria | Broadmead, Philip M. |
| | Trans-Jordan | Kirkbride, Sir Alec S. |
| | Tunisia | ‖Gibbs, Frank Stannard |
| *Acikalin, Cevat | Turkey | *Kelly, Sir David |
| *Zarubin, Georgi | U.S.S.R. | *Peterson, Sir Maurice |
| *Douglas, Lewis W. | U.S.A. | *Lord Inverchapel |
| *MacEachen, Dr. Roberto E. | Uruguay | *Vereker, George G. M. |
| | Vatican | *Perowne, J. V. T. W. T. |
| *Oropesa, Dr. Don Juan | Venezuela | *Ogilvie-Forbes, Sir G. A. D. |
| *Leontic, Ljubo | Yugoslavia | *Peake, Charles B. P. |

*Ambassador.
Unstarred—Minister.
†Consul.
‡Political representative.
§Chargé d'affaires.
‖Consul general.
¶Ambassador withdrawn in accordance with United Nations resolution, 1946; embassy at present headed by a counsellor.

Persons no longer in the list but still accepted by the British government as personally possessing diplomatic privileges:

| | |
|---|---|
| Torma, August | Estonia |
| Zarine, Charles | Latvia |
| Balutis, Bronius | Lithuania |

**American Academy of Arts and Letters:** *see* SOCIETIES AND ASSOCIATIONS.

**American Academy of Political and Social Science:** *see* SOCIETIES AND ASSOCIATIONS.

**American Association for the Advancement of Science:** *see* SOCIETIES AND ASSOCIATIONS.

**American Association of Law Libraries:** *see* SOCIETIES AND ASSOCIATIONS.

**American Bankers Association:** *see* SOCIETIES AND ASSOCIATIONS.

**American Bar Association:** *see* SOCIETIES AND ASSOCIATIONS.

**American Bible Society:** *see* SOCIETIES AND ASSOCIATIONS.

**American Chemical Society:** *see* SOCIETIES AND ASSOCIATIONS.

## American Citizens Abroad.

During the year 1947, the number of U.S. citizens residing abroad more or less for extended periods of time in the interests of American affairs or for family or other reasons amounted to about 325,000 people, exclusive of the civilian employees of the military forces. This was an increase of about 52,000 people over 1946. The number of passports issued during the fiscal year ended June 30, 1947, exceeded by more than 7,000 the largest number of passports ever issued in the U.S. during any fiscal year. There were shortages in transportation and also in food and general comforts for those persons permanently residing abroad as well as those travelling temporarily for pleasure or for business. Notwithstanding this, the records show that 65,000 temporary visitors from America went to the British Isles during 1947. From this number of Americans travelling temporarily, it was stated by one of the head officials of the British Travel agency that $85,000,000 was brought into the British economy. This figure undoubtedly covered a large sum spent on transatlantic travel, for the British shipping carried a high percentage of the travel to Europe and the continent and to the U.S. The American visitors were taken care of with a minimum of discomforts considering the privations and rationing of the previous several years and made, through their travel and expenditures, an important contribution in the betterment of economic conditions in Britain.

In the spring of 1947, tourist and pleasure travel to the continent of Europe as well as the British Isles, which had been barred insofar as U.S. citizens were concerned since the outbreak of World War II in 1939, was again permitted by the government. The department of state considered that benefits to Europe from dollar expenditures and the normal friendly intercourse afforded by pleasure travel would far outweigh the discomforts of limited menus, less pretentious hotel accommodations and general absence of luxuries for the travelling public. The Boy Scouts of America attended the Scout Jamboree in France and were welcomed in the adjacent countries for short friendly visits. The American Legion commander, accompanied by a token group of 500 veterans of World War I, made the third pilgrimage to France, the British Isles and Belgium. It is estimated that 10,000 students made low-cost travel trips to the continent and for the three vacation months of summer fraternized with students of the old world in study, reconstruction work and travel. More than 3,000 youths remained in Europe as students, some 2,000 of them being veterans studying under the G.I. Bill of Rights, undertaking serious courses of study in the universities abroad.

The peace treaties with Hungary, Bulgaria and Rumania became effective in Sept. 1947, and envoys, received by the U.S. in due course, exercised among other functions that of granting visas for travel to their respective countries, thus removing these three countries from the category of travel controlled by the Allied Control council. In July 1947, travel of Americans to Germany for compassionate reasons was inaugurated by the U.S. and British military authorities. Those persons who wished to visit ill relatives under 70 years of age, residing in the U.S. zone of Germany, were required to submit medical certificates from German doctors recertified by a local liaison and security officer in Germany. If the relatives were over 70 years of age and resided in the U.S. zone, no medical certificates were required. If the relatives resided in the British zone of Germany, medical certificates from German doctors which did not need to be recertified were required irrespective of the ages of the relatives. The French military attaché at Washington, D. C., handled directly many compassionate cases in the French zone. There was no travel for compassionate or other reasons authorized by the soviet authorities for the soviet zone. The Austrian authorities made arrangements for summer tourist travel to Austria, making special provision for adequate meals and accommodations at designated hotels. This enabled U.S. citizens long desirous of hearing the Austrian musical festivities to enjoy again some pleasant weeks in western Austria.

The headquarters of General MacArthur promoted the resumption of business relations between the Japanese and U.S. businessmen. A monthly quota of generous size was allocated to the bureau of international trade of the department of commerce to further essential and important commercial activities. Round the world cruises once more became possible and were being carried on in increasing numbers as shipping became available.

The visa and passport requirements of many foreign countries were simplified in an effort to induce travel and visits of Americans. Visas for U.S. citizens were abolished by Sweden, Norway, Denmark, Switzerland, Luxembourg and the Netherlands. Americans were welcomed and were required to have only a passport as evidence of U.S. citizenship. Members of the occupation forces were accorded entry into Switzerland without passports upon presentation of a simple card freely issued by the Swiss authorities.

The abolishment by the department of state on Aug. 28, 1945, of the requirement for citizens to bear passports to leave the U.S. for the western hemisphere and to return therefrom resulted during the year 1947 in the establishment of much more favourable travel requirements by the countries themselves, which in many cases abolished altogether the need for passports and in other cases simplified the requirements and accorded gratis visas. Those countries in the western hemisphere not requiring either passports or visas of U.S. citizens are as follows: Bahamas, Barbados, Bermuda, British West Indies, British Guiana, Canada, Canal Zone, Costa Rica, Cuba, El Salvador, Guatemala, Haiti, Honduras, Mexico, Newfoundland, Panamá and Venezuela.

The full figures covering U.S. citizens semipermanently residing abroad were not available, but the following general summation is given:

| | |
|---|---|
| South America | 26,638 |
| Mexico and Central America | 33,471 |
| Europe | 78,657 |
| Asia | 34.975 |
| Africa | 6,099 |
| Australia and New Zealand | 2,713 |
| West Indies and Bermuda | 16,361 |
| Canada and Newfoundland | 125,859 |
| Fiji Islands | 46 |

(R. B. S.)

**American College of Dentists:** *see* SOCIETIES AND ASSOCIATIONS.

**American College of Life Underwriters:** *see* SOCIETIES AND ASSOCIATIONS.

**American College of Surgeons:** *see* SOCIETIES AND ASSOCIATIONS.

## American Dental Association.

In 1947 membership in the American Dental association reached an all-time high of 70,443, a gain of more than 4,000 from 1946. Membership in the association and its 445 affiliated state and local societies represented approximately seven-eighths of the practising dentists in the United States.

The association held a full scientific meeting at Boston, Aug. 4 to 8, marking resumption of annual sessions halted during World War II. At Boston, the association joined with the *Fédération Dentaire Internationale* in sponsoring the Tenth International Dental congress. Approximately 12,000 dentists from 42 nations attended. The 1948 annual meeting of the association was to be held in Chicago, Sept. 13 to 17.

During 1947, the association established a new division of dental health education as part of a long-range program to curb the prevalence of dental disease, particularly among children. It recommended to all dentists that topical (local) application of a solution of sodium fluoride be applied to the teeth of child patients during the course of routine dental treatments as a means of reducing dental caries. The association increased its support of dental research and renewed its sponsorship of a bill in congress for the establishment of a national dental research institute at Bethesda, Md. (The bill was passed by the senate but was not brought to a vote in the house of representatives.)

It sought reorganization of the army dental corps and requested revision in the dental service program of the Veterans' administration.

The association published the first complete directory of dentists in the United States to be issued in 19 years. It launched a nation-wide program of manual and aptitude testing of freshmen dental students at all 40 of the nation's dental schools. It approved standards for the establishment of examining boards in the dental specialties (oral surgery, orthodontics, prosthodontia, pedodontia, and periodontia) and for the accrediting of courses for training of dental hygienists and dental laboratory technicians. It continued publication of *The Journal of the American Dental Association* (semimonthly) and the *Journal of Oral Surgery* (quarterly).

Officers in 1947–48 were: president, Dr. H. B. Washburn; president-elect, Dr. Clyde E. Minges; vice-presidents, Dr. Philip E. Adams, Dr. Fred A. Richmond and Dr. A. M. Smith, Jr.; secretary, Dr. Harold Hillenbrand; treasurer, Dr. R. H. Volland.

(H. B. BN.)

**American Economic Association:** *see* SOCIETIES AND ASSOCIATIONS.

## American Federation of Labor.

The American Federation of Labor reached an all-time high in membership in 1947 with 7,577,716 paid-up members on Aug. 31, the close of the federation's fiscal year—a gain of almost 500,000 members. During that fiscal year charters were issued to 258 new affiliates, including 2 new international unions.

In 1947 the federation continued its activities for the advancement of the rights of the wage earners despite concerted legislative attacks on both a national and state level which threatened seriously to impair the effectiveness of the U.S. trade-union movement in the field of collective bargaining. In addition to legislative attacks, various administrative orders were effected which greatly hampered the work of the organized labour movement. One of the first steps which the American Federation of Labor insisted had to be taken to retrieve labour's losses in the administrative as well as in the legislative field was the rehabilitation of the federal department of labour. Labour felt it should have government recognition in keeping with the importance of the services it renders, and to enable workers to have services that would protect them and permit them to keep step with economic and social progress.

In its annual report, the executive council of the A.F. of L. placed strong emphasis on the critical international situation and the relationship between national and foreign policies. The federation continued activity in the international field through its official work with the I.L.O., the U.S. military governments in occupied countries and by official contacts with European and Latin-American trade-union movements.

The federation continued to press for revision of the Fair Labor Standards act in the light of postwar needs. Enforcement of this law, as well as of the Public Contracts act, was severely restricted during World War II but it had been expected that the year 1947 would witness a resumption of the enforcement standards which prevailed prior to the war. This, however, did not prove to be the case. The A.F. of L. planned, therefore, to direct renewed efforts toward greater enforcement of federal wage and hour laws.

The federation and its affiliates also planned to direct a concerted attack on the Taft-Hartley law in an effort to secure complete repeal of the measure. This activity was to be extended to the coming political campaigns in an effort to secure the election of members to national and state legislatures and to other national offices, who would be opposed to this and other similar labour laws.

Veterans' problems and welfare of particular concern to the organized labour movement were given continuing consideration by the federation. The A.F. of L. Veterans' committee was extending its work through state and local committees to cooperate with the various veterans' organizations. The federation also continued its efforts to secure needed revisions of the social insurance system.

Keen interest continued in the broad field of education: in proposals for a program for federal aid; in international educa-

LABOUR DAY RALLY in 1947 at Soldier field, Chicago, Ill., where showers failed to discourage a huge audience listening to an address by William Green, president of the A.F. of L.

tional problems; through representation on U.N.E.S.C.O.; in workers' service and education problems and through the Workers Education bureau.

The federation planned to continue, during the coming year, its activities in the interest of and for the advancement of free labour both in the U.S. and abroad, and to protect those gains which had been made in the past.

(*See* also CONGRESS OF INDUSTRIAL ORGANIZATIONS; LABOUR UNIONS; STRIKES AND LOCK-OUTS; UNITED STATES.)

(W. G.)

**American Geographical Society:** *see* SOCIETIES AND ASSOCIATIONS.

**American Historical Association:** *see* SOCIETIES AND ASSOCIATIONS.

**American Indians:** *see* INDIANS, AMERICAN.

**American Institute for Property and Liability Underwriters, Inc.:** *see* SOCIETIES AND ASSOCIATIONS.

**American Institute of Accountants:** *see* SOCIETIES AND ASSOCIATIONS.

**American Institute of Chemical Engineers:** *see* SOCIETIES AND ASSOCIATIONS.

**American Institute of Electrical Engineers:** *see* SOCIETIES AND ASSOCIATIONS.

**American Institute of Mining and Metallurgical Engineers:** *see* SOCIETIES AND ASSOCIATIONS.

**American Iron and Steel Institute:** *see* SOCIETIES AND ASSOCIATIONS.

**American Law Institute:** *see* SOCIETIES AND ASSOCIATIONS.

## American Legion.

Chief legislative accomplishment of the American Legion during 1947 was the securing of enactment by congress of a bill providing for immediate cashing of the terminal leave pay bonds of enlisted veterans of World War II. With the adjournment of the first session of the 80th congress, the American Legion had established a record of successfully sponsoring 188 federal laws after 1943 exclusively in the interests of World War II veterans. Under these laws World War II veterans had received financial benefits totalling $30,066,426,139.

Other accomplishments of 1947 included the development and presentation to congress of its Veterans' Homestead Act of 1948 designed to effect up to 20% savings for World War II veterans in the building of ownership and rental housing in co-operative projects financed with government-guaranteed bonds; re-organization of the internal structure of the American Legion into a framework of 11 new national basic commissions; and expansion of the world-wide network of Legion posts to a new high of 16,802 posts, a gain for the year of 995 new posts. Final 1947 membership reached 3,271,986, of whom approximately 70% were veterans of World War II.

The Legion held its 29th national convention in New York city, Aug. 28 to 31. Delegates adopted a 1948 program aimed at the paramount objectives of assuring the internal and external security of the United States. It called for the eradication of communistic influences and outlawing of the Communist party in the United States, and all-out effort to secure enactment by congress of universal military training legislation. In its foreign relations policy the Legion branded the U.S.S.R. as an aggressor nation, gave all-out backing to the Marshall plan for the rehabilitation of western Europe and sponsored its own plan

WEST POINT CONTINGENT of the American Legion parade marching up Fifth avenue during the legion's 1947 convention which opened in New York city on Aug. 28

for the strengthening of the United Nations organization by abolishing the veto in all matters dealing with aggression and by creation of a strong world police force. The legion also relaxed its opposition to the admission within certain limitations of displaced persons into the United States.

The New York city convention elected James F. O'Neil, police chief of Manchester, N.H., as national commander for 1947–48. The 30th national convention was scheduled to be held Oct. 18 to 21, 1948, in Miami, Fla. (*See* also HOUSING; VETERANS' ORGANIZATIONS.) (J. F. O'N.)

## American Library Association.

The oldest professional association in the world of librarians and others interested in the educational, social and cultural responsibilities of libraries, the American Library association (A.L.A.) is the official organization of librarians in the United States and Canada. Established on Oct. 6, 1876, in Philadelphia, the A.L.A. had a membership in 1947 of 16,000 in the United States and possessions, Canada and 50 foreign countries. It is affiliated with more than 60 other library associations throughout the world and works closely with organizations and government agencies concerned with education, recreation, research and public service. In 1947 its activities were carried on by a headquarters staff of 105, assisted by 600 volunteer persons on approximately 100 committees and boards.

Carl H. Milam was executive secretary with headquarters at 50 E. Huron street, Chicago 11, Ill. An International Relations office, financed by a Rockefeller grant, was located in the Library of Congress annex, Washington, D.C., with Frederick Cromwell, director. A National Relations office, operated by the A.L.A. and financed by funds contributed by librarians and friends of libraries, was operated at 1709 M street, N.W., Washington 6, D.C., with Paul Howard, director.

The 66th annual conference in San Francisco, Calif., in June 1947 was attended by 2,600 persons from the U.S., its possessions and 24 other countries. At San Francisco the following officers for 1947–48 were inaugurated: president, Paul North Rice, New York Public library; first vice-president and president elect, E. W. McDiarmid, University of Minnesota, Minneapolis; second vice-president, Elizabeth D. Briggs, Cleveland Public library, Cleveland, O., and treasurer, Harold F. Brigham, state library, Indianapolis, Ind.

At that time the annual A.L.A. citations for distinguished service as library trustees were awarded to Mary E. Frayser, Rockhill, S.C., chairman of the South Carolina State Library board, and Thomas H. McKaig, Hamburg, N.Y., president of the board of trustees of Erie County Library association. The A.L.A. awarded the 26th Newbery medal to Carolyn Sherwin Bailey for *Miss Hickory,* judged to be the outstanding contribution to children's literature during the preceding year. The 11th annual Caldecott medal for the most distinguished picture book was conferred upon Leonard Weisgard for his illustrations of *The Little Island* by Golden MacDonald. Frederic G. Melcher, publisher of the *Library Journal* and *Publishers' Weekly,* annually provides both medals.

The first *Letter* award ($100) for an outstanding example of progressive library service was presented to the Enoch Pratt Free library, Baltimore, Md., for its program of adult education in atomic energy. The *Letter* award ($100) to a librarian "for the humanizing of knowledge" was conferred on Natalie Mayo, head of the children's department, San Francisco Public library. Both awards were given by Mrs. Ada McCormick, editor and publisher of *Letter* magazine, Tucson, Ariz.

The 11th Oberly Memorial award (1945–46), presented every two years to that American citizen who compiles the best bibliography in the field of agriculture or the related sciences, went to Burch Hart Schneider for *Feeds of the World; Their Digestibility and Composition.*

Sponsored by the *Wilson Library Bulletin* and the A.L.A. Public Relations committee, the John Cotton Dana publicity awards were given to eight libraries for effective public relations programs.

The 1948 conference was scheduled for June 13–19 at Atlantic City, N.J. The annual midwinter conference was held at Chicago.

In 1946–47 the association's income was about $682,000. Approximately $103,000 came from membership dues, $140,600 from sales of books and periodical subscriptions and $73,500 from income on endowment funds. Receipts from group retirement annuity premiums amounted to $164,600; and $173,300 came from outside sources in the form of grants or payments for specific purposes. The A.L.A. endowment was approximately $2,100,000.

During the year, in addition to its regular periodicals, *A.L.A. Bulletin, Booklist, Subscription Books Bulletin, College and Research Libraries* and *Hospital Book Guide,* the association issued 29 new or reprinted publications from a total of more than 200 projects being considered.

Following years of study and work the "National Plan for Public Library Service," a 200-page report, was completed by the A.L.A. Postwar Planning committee and published. It emphasizes the fact that most public libraries in the U.S. are inadequate, understaffed, housed in out-moded buildings, lack sufficient books and in general do not meet the needs of their communities. The plan proposes that there should be 20 multistate reference centres, 48 effective state library agencies and a national bibliographic and library centre, in addition to about 1,200 large local library systems. All would be interlocking to form a federal system. Similar plans were made for various other library groups.

A two-year study of the American free public library was begun by the Social Science Research council through a Carnegie corporation grant of $175,000. Proposed by the A.L.A., this study, "the American Public Library Inquiry," was to include a comprehensive survey of the adequacy of the public library as a source of citizen information, and an analysis of its actual and potential contribution to American society.

Organized by A.L.A. and financed by a Carnegie corporation grant, a conference on International Cultural, Educational and Scientific Exchanges was held in Princeton, N.J., Nov. 1946. Plans and recommendations in this field were published by A.L.A. During 1947–48, plans of the A.L.A. Board of Education for Librarianship emphasized not only recruiting for the profession (it was estimated that 64,000 librarians would be needed from 1947–60) but also strengthening of accrediting procedures and a study of education and training needs for various levels of work.

With the appointment during the year of an executive secretary, with offices at A.L.A. headquarters, the Association of College and Reference Libraries (a division of A.L.A.) was able to accomplish more planning in that field.

Several A.L.A. contracts regarding international relations projects with the U.S. government and Rockefeller foundation terminated during the year. From its establishment in 1942, the A.L.A. International Relations office had expended grants totalling more than $1,800,000 to promote library interests throughout the world. Other international activities included: participation in the work of the United Nations Educational, Scientific and Cultural organization (U.N.E.S.C.O.) and attendance at its conferences; representation at meetings of the committee of the International Federation of Library Associations and of conferences of the International Federation of Documentation; participation in the Assembly of Librarians of the Americas at the Library of Congress and visits of United States librarians as consultants to Japan, Korea and Germany at the request of the U.S. government. At the invitation of American librarians, the International Federation of Library Associations scheduled its next international conference in the United States.

Through the A.L.A. National Relations office, library relations with congress were concerned during the year with the Library Demonstration bill (S. 48–H.R. 2,465); revision of the postal rates; federal aid to education; extension of social security and appropriations for the Library of Congress, army libraries, Library Service division of the office of education and for cultural relations with other countries.

The A.L.A. in conjunction with other groups organized a project late in 1947 to encourage reading on and discussion of the European Recovery program. This was an attempt to arouse the awareness of the people to the Marshall plan and its importance and was the beginning of a program to urge all libraries to emphasize the great issues of our times. (M. O. P.)

## American Literature.

If the year 1947 in American literature were judged by publishers' promotions, bookstore displays and quantity sales, it would seem to have been a year of interest in American history, American life and the place of the United States in world affairs. Starting Jan. 2 with Kenneth Roberts' historical novel of early 19th century America, *Lydia Bailey,* on which the publishers spent $30,000 in promotion between January and July, it produced record sales for John Gunther's *Inside U.S.A.* by September, and it published Roger Butterfield's *The American Past,* a $10.00 illustrated panorama of events from Concord to Hiroshima. Although book prices had taken their long expected inflationary jump, there seemed only a slight falling off of reader interest. Americans were trying to learn about themselves.

Second in interest were books which dealt with the meaning of life itself. With the atom bomb hovering overhead and with Europe, and U.S. relations with it, in a state of unrest to say the least, it seemed rather like the kind of clear day that farmers call a "weather breeder." Before the year was over, publishers were disinclined to publish G.I. books on World War II, and turned to the philosophers, historians, and serious romancers. *Peace of Mind* (1946) by Joshua L. Liebman, a skillful blending of religion with psychiatry for self-administered therapy, continued to hold the best-seller list for most of the year; the Englishman Arnold J. Toynbee's cyclical *Study of History* and the Frenchman Pierre Lecomte du Noüy's scientific theory of *Human Destiny* crowded less thoughtful books by American authors from the front tables of the book stores.

To call this interest in history, ideas and fantasy "escapism" is to give only a small part of its significance. Book readers will listen only momentarily to such Cassandras as Norman Cousins and Lewis Mumford who shouted in 1946 that man must act quickly for his time is running short. They prefer at such moments of crisis to lapse into introspection, memory and intellectual speculation. Such periods have, in the past, produced great literature, as they did in the United States in the 1850s and the 1920s, but we are too close to these current books to know how great or how ephemeral they are.

**The War and the World.**—When the year opened there was still much writing about the war at first hand in such personal records as James A. Michener's *Tales of the South Pacific,* Agnes N. Keith's *Three Came Home,* an account of life in a Japanese prison camp, and the fictional form of a successful play *Command Decision* by William Wister Haines. But action faded to memory in Lewis Mumford's biography of his soldier son *Green Memories* and in probably the last collection of Ernie Pyle, *Home Country;* while William Shirer wrote postscript to foreign war correspondence in *End of a Berlin Diary* and Robert Capa collected his *Life* photographs in *Slightly Out of Focus.*

As the flood of first hand narrative dwindled, more substantial and inventory-taking accounts took their place. Chief among these were the first of many volumes-to-be describing the actions of the navy, *History of United States Naval Operations in World War II,* edited by Samuel E. Morison, and of the army, edited by Kent Roberts Greenfield. These records were planned far in advance by official Washington and were executed by top-flight historians in the field and at base. These were followed by reports of official evaluating committees on the freedom of the press, on civil rights and on higher education. This is one way democracy has of issuing its encyclicals, and it sets the tone of the literature of the year down to studies of jazz music and cartoons.

Another aspect of this trend is revealed in the autobiographies and biographies of leading figures of the period of two wars. Arthur S. Link's *Wilson: The Road to the White House* was one. There were studies of Franklin Delano Roosevelt: James F. Byrnes's *Speaking Frankly,* Edward J. Flynn's *You're the Boss,* Roosevelt's boyhood letters and *The Roosevelt Era,* edited by Milton Crane. Among others who were memorialized were William Allen White, Benjamin Cardozo, Admiral Halsey and Generals Patton and Marshall. George Creel offered his *Rebel at Large* and John G. Winant *Letter from Grosvenor Square.*

There were of course books on the atom bomb and its consequences and on Palestine, Russia, China, India and Japan, but there was not as much interest in current developments in Europe as one might expect. The Nuernberg trials produced Victor H. Bernstein's reportorial *Final Judgment* and Lionel Shapiro's novel *The Sealed Verdict* and other reconstruction problems found expression in John H. Burns's bold tale *The Gallery* and Paul Murray's *Once There Was a Waltz.* Chiang Kai-shek's suppressed *China's Destiny* was finally published, and Pearl Buck added to her list of Chinese stories the collection *Far and Near.* Upton Sinclair carried his Lanny Budd series to one more volume in *Presidential Mission,* and Edmund Wilson reported a meditative tour in *Europe Without Baedecker.* Maurice Hindus studied the readjustment of Czechoslovakia in *The Bright Passage* and William L. Langer appraised *Our Vichy Gamble,* while among the many books on Russia were Joshua Kunitz' anthology of its literature and *Russia: The Giant that Came Last,* an appraisal of its culture.

**These United States.**—With an imaginary visit by Jefferson and Hamilton to the sessions of the United Nations in *Two Came to Town,* Simeon Strunsky brought the American tradition to bear on the present. While the vast projects of reediting the Jefferson and the Lincoln papers progressed and the journals of Francis Parkman were finally published, historians like Thomas J. Wertenbacker restudied *The Puritan Oligarchy,* and other historians the opening of the northwest, the Indian, the Negro and the culture of the south. The more general historians like Henry S. Commager, Ray Allen Billington, Otto Eisenschiml, and Allan Nevins issued documents and histories at an alarming rate. Meanwhile popular treatments of the American tradition, initiated several years ago in the "Rivers of America" series, were augmented by more substantial books like Townsend Scudder's *Concord: American Town,* and by a series on other U.S. towns, U.S. folkways, U.S. railroads, trails, colleges, national parks, U.S. maritime history, non-English racial groups in America, and American society—in such books as Cleveland Amory's *The Proper Bostonians.* The past was recorded pictorially in biographies of the sculptor Daniel Chester French, the painter Russell Cheyney and the two picture makers of the old west W. H. Jackson and Frederick Remington, as well as in Bernard de Voto's *Across the Wide Missouri* and James T. Flexner's history of colonial art, *American Art: First Flowers of Our Wilderness;* while the present continued to be illustrated in the "Look at America" series which during the year spread to the south, the northwest, and New England.

The mixture of nostalgia and re-evaluation of these subjects comes out more explicitly in Van Wyck Brooks's continuation of his history of the literary life in America, now in its fourth volume *The Times of Melville and Whitman.* Henry Seidel Canby collected his literary reminiscences in *American Memoir,* H. L. Mencken his in *Days of H. L. Mencken,* and Burton Rascoe carried his to New York with *We Were Interrupted;* from the literary Chicago memorialized in the life of Harriet Moody *A House in Chicago,* by Olivia H. Dunbar. Elliot Paul turned from Paris to the rural America of his childhood in *Linden on the Saugus Branch* while his beloved left bank was remembered in Samuel Putnam's *Paris Was Our Mistress* and Al Laney's *Paris Herald.* The days of the U.S. past came in for harsher reappraisal in Leo Gurko's *The Angry Decade* (the '30s), Lloyd Morris' *Postscript to Yesterday, America: the Last Fifty Years, I Remember Distinctly,* another "yesterday" book by Agnes Rogers and Frederick Lewis Allen, and the second volume of Maxwell D. Geismar's critique of the 20th century American novel *The Last of the Provincials* (the '20s). Individual writers were treated in the "Makers of Modern Literature" series while a new "American Men of Letters" series was being planned, in Percy Lubbock's *Portrait of Edith Wharton,* in F. O. Matthiessen's *The James Family,* accompanied by the publication of *The Notebooks of Henry James,* in Eleanor M. Tilton's biography of the elder Oliver Wendell Holmes, and in Harold D. Cater's collection of the more personal letters of Henry Adams. There were also biographies of Abigail Adams and of Carey Thomas of Bryn Mawr and studies of the criminal lawyers Howe and Hummel, of McGuffey's readers, of American etiquette books and of the explorers Lewis and Clark. Curiosity about the U.S. cultural past seemed virtually insatiable.

With *Grass Roots History* by Theodore C. Blegen this interest reached down to the folk levels of culture where collectors and anthologists like B. L. Botkin added to the "treasuries" one on New England folklore, and John A. Lomax told of *The Adventures of a Ballad Hunter.* The folk spirit also found expression in books on the cartoons of Bill Mauldin and Francis W. Dahl and in a collection of *The Best Cartoons of the Year 1947* by Lawrence Lariar; while Eddie Condon celebrated a generation of jazz in *We Call It Music.* The humourists S. J. Perelman in *Acres and Pains,* and Samuel Hoffenstein in *Pencil in the Air* maintained their eminence, while satire was provided by Ludwig Bemelmans in *Dirty Eddie* (motion pictures), Herman Wouk in *Aurora Dawn* (advertising) and Frederick Wakeman in *The Saxon Charm* (Broadway theatre).

**U.S. in Story.**—Fiction thus was keeping pace with nonfiction in the U.S. effort to know itself. The regional tale, the novel of social criticism, and the historical novel of the American past have existed for many years, but the year 1947 seemed to strike a new high in these forms. Roaring romances of other times and places headed the best-seller lists, but in *Proud Destiny* Lion Feuchtwanger pictured Ben Franklin in France and Frank Yerby placed his scene for *The Vixens* in the American Civil War while other somewhat less gaudy romances like *The Big Tide* by Rubylea Hall, *The Big Sky,* by A. B. Guthrie, Jr., and *Colorado* by Louis Bromfield covered the country from New Bedford to Florida to California. Quieter in tone was Walter D. Edmonds' tale of the Erie canal *The Wedding Journey,* Katherine Newlin Burt's story of early Williamstown *Close Pursuit* and H. L. Davis' western *Harp of a Thousand Strings.* The midwest is the scene of Herbert Krause's *The Thresher* and Feike Feikema's *This Is the Year;* New England that of Ann Petry's *Country Place,* Louise Field Cooper's *Summer Stranger* and Howard Breslin's fine study of the decline of a Vermont mountain town *Tamarack Tree.* Marcia Davenport's portrait of contemporary New York city *East Side, West Side* should probably not be taken too seriously, but many of these novels add at least a touch of social criticism to their pictures of American life, especially those of the south like Ben Ames Williams' massive family chronicle *House Divided.* Lillian Smith treated the south again in her second novel *Julia,* but now avoided the race problem, leaving it to Sinclair Lewis in *Kingsblood Royal.* The related theme of social anti-Semitism provided the theme for Laura Hobson's *Gentleman's Agreement;* the disillusionment of a labour leader that of David Davidson's swift-paced *The Steeper Cliff,* a promising first novel; life in an industrial town that of Howard Fast's *Clarkton;* and the lot of Norwegian immigrants that of *Big Ember* by Edward Havill.

**The World Within.**—There is an instinctive turning, after any great war, to religion, philosophy, psychology and art in a search for values and for answers to the eternal questions, but the current manifestations of this instinct seem to be a part of a 20th century movement rather than merely a reaction from war. The final adoption into U.S. literature of the British Alfred North Whitehead, signalized by the appearance of his *Essays in Science and Philosophy,* of the German Thomas Mann, with his *Essays of Three Decades,* and of the French Jacques Maritain with *The Person and the Common Good* seems to mark the reversal of a persistent tendency on the part of profound thinkers to flee America and its so-called materialism. The successful absorption of the 20th century intellectual immigration from Europe, particularly of the *émigrés* of World War II, is perhaps the most promising factor in the contemporary cultural pattern. America traded these men, together with the poets W. H. Auden and Christopher Isherwood, for Henry James and T. S. Eliot—so far something like an even exchange, but fraught with meaning for the future. Through them America was absorbing the best in European religion, philosophy and art; and had at the same time adopted the influences of André Gide with the translation of the first volume of his *Journals* by Justin O'Brien, of Søren Aabye Kierkegaard, of the existentialist Jean Paul Sartre with the translation by Eric Sutton of two of his novels *The Age of Reason* and *The Reprieve,* of Franz Kafka with a biography by Max Brod, a critical analysis *Kafka's Prayer* by Paul Goodman, and the continuation of a collected edition of his works in English, of Paul Valéry with a translation of his allegorical novel *Monsieur Teste* by Jackson Mathews and of James Joyce with a critical analysis *Fabulous Voyager: James Joyce's Ulysses* by Richard M. Kain. One might even add the migration of Henry Miller and his little band of nihilists to the mountain valleys of California as a final and extreme manifestation of this cultural movement, the return of an American who probably invented more things to say against American civilization than any man living or dead. Whether the answers be "no" as in Miller's cosmological distempers, or "yes" as in the religious impulse signalized by the republication of the prayers of Samuel Johnson and the essays of Jakob Boehme and Fénelon, the ultimate questions were being asked on American soil.

On the more popular level this impulse was evident in such books as Erwin Edman's *Philosopher's Quest,* a more serious discussion than was his *Philosopher's Holiday* of several years back, *Man Against Myth* by Barrows Dunham, *On Understanding Science* by James B. Conant, a facetious *Essay on Morals* by Philip Wylie and a more impressive *Rediscovery of Morals* by Henry C. Link, and the collected essays by various hands *Freedom and Experience* presented as a testimonial to Horace M. Kallen. Although the extraordinary Kinsey report *Sexual Behavior in the Human Male* was held over for 1948, Ferdinand Lundberg and Marynia F. Farnham published *Modern Woman: The Lost Sex.* To the many works on religion, of which Raymond Calkins' *The Modern Message of the Minor Prophets* and Robert M. McIver's collection of essays *Unity and Difference in American Life* are representative, should be added Batsell B. Baxter's selection *The Heart of the Yale Lectures,* Herschel Clay Baker's history of thought *The Dignity of Man,* and Louis K. Anspacher's investigation of the validity of psychic evidence *Challenge of the Unknown: Exploring the Psychic World.* The normal and the abnormal processes of the mind in its creative expressions were investigated in *The Works of the Mind,* edited by Robert B. Heywood and *The World Within* by Mary L. Aswell. Sidney Finkelstein attempted an application of the Marxist aesthetic in *Art and Society* while less doctrinaire criticism of literature and art appeared in Cleanth Brooks' *Well Wrought Urn,* James T. Farrell's *Literature and Morality,* Yvor Winters' *In Defense of Reason* and Leo Stein's *Appreciation: Painting, Poetry and Prose.*

In the fiction of the year, one reflection of this tendency was the return by established writers to earlier manners and away from contemporary problems. The work of the mystic and primitive Sherwood Anderson was collected in a *Reader* by Paul Rosenfeld; the third volume of Theodore Dreiser's Cowperwood trilogy *The Stoic* was finally published although still unfinished at its author's death; the short stories of Thomas Beer, Edna Ferber, James T. Farrell, John O'Hara and Bret Harte were collected; John Steinbeck offered a tale of primitive impulses in *The Wayward Bus* and, in more gentle mood, retold a moving Mexican folk tale in *The Pearl;* Thornton Wilder edited Gertrude Stein's posthumous tribute to great men *Four in America;* Robert Nathan did a further fantasy in *Mr. Whittle and the Morning Star;* Henry Morton Robinson analyzed the therapy of disaster in *The Great Snow;* Bernard de Voto contrasted the therapeutic effects of civilization and the still primitive west in *Mountain Time;* and Erskine Caldwell was back with his southern primitives in *The Sure Hand of God.* Such younger writers, however, as Alfred Hayes in *Shadow of Heaven,* Jean Stafford in a sensitive story of childish tensions *The Mountain Lion* and Richard Angell in *The Long Swim* made impressive efforts to come to grips with the mental and moral problems of modern man. Lionel Trilling's *The Middle of the Journey* was a more mature but less facile first novel of personal adjustment to a nonpersonal world by one of the most thoughtful literary critics; and the more violent ills of civilization were discussed by Calder Willingham in his angry study of evil *End as a Man,* by Willard Motley in his analysis of criminal degeneration *Knock on Any Door* and by Nathalie Anderson Scott in her study of alcoholism *The Story of Mrs. Murphy.* The same tendency was carried further into the problems of neuroses and beyond in the cartoon collections of Charles Addams and Abner Dean, in *Alexandra* by Gladys Schmitt, the short stories of Mark Schorer in *The State of Mind* and in *Spearhead,* an anthology of experimental writing, edited by James Laughlin. But the year produced no new voice as commanding as that of the Canadian Malcolm Lowry in *Under the Volcano* to presage a major movement among younger writers of fiction.

**Poetry.**—The dismay of modern man and his yearning for faith and security were even more eloquently stated in the poetry of the year than in the fiction. *The Age of Anxiety* by

ELEANOR CLARK, novelist, and Robert Lowell, poet, each of whom was awarded a Guggenheim fellowship in literature in 1947, as well as a $1,000 grant from the American Academy and National Institute of Arts and Letters

W. H. Auden, *The Trial of a Poet* by Karl Shapiro, *Hymn to Wreckage* by Robert McKinney, the second and less effective of Robert Frost's essays on the dealings of God and man *The Masque of Mercy* and Dunstan Thompson's *Lament for the Sleepwalker* variously treat aspects of this theme. In productivity as well as power Kenneth Patchen probably led the poets of the year with three volumes of verse and a critical essay on him by Henry Miller. Ezra Pound added ten more to his *Cantos,* Selden Rodman did a postwar diary in verse *The Amazing Year* and Conrad Aiken a narrative of early Boston *The Kid.* New volumes were offered by such well established poets as Mark Van Doren, William Rose Benét and Witter Bynner. Robert Hillyer, Raymond Holden and Oscar Williams made collections or selections of their earlier poems, Allen Tate edited *A Southern Vanguard* in memory of John Peale Bishop, and the poems of Joan Murray, Samuel Greenberg and Damon Runyon were collected by hands other than their authors'. Among the newer voices might be counted Martha Keller in *Brady's Bend and Other Ballads.* John Frederick Nims in *The Iron Pastoral,* Martha Bacon in *Things Visible and Invisible* and Louis O. Coxe in *The Sea Faring;* while older poets were revived in a collection of Herman Melville, a selection from Sidney Lanier, a translation of fifty poems of Hafiz by Arthur J. Arberry, and critical or biographical books on Robert Frost, E. A. Robinson and Emily Dickinson.

**Summary.**—Taken as a whole, therefore, the literature of the year 1947 seems escapist only at first glance; on closer examination it reveals an increasing seriousness of purpose, an eagerness to explore ideas and techniques and an interest in the meaning of America and of life itself. It might be noted that December closed with the announcement of a massive novel of one man's life in 19th century America, *Raintree County* by Ross Lockridge, Jr., which was greeted by the critics as containing all of these qualities. (*See* also ENGLISH LITERATURE.)

(R E. SR.)

**American Mathematical Society:** *see* SOCIETIES AND ASSOCIATIONS.

## American Medical Association.

The American Medical association in 1947 included 135,700 physician members of 2,024 component medical societies, grouped in 53 state and territorial medical associations. The policies of the association are established by its house of delegates, a representative body chosen by the houses of delegates of the individual states. The association is administered by a board of trustees with nine members. Its activities are conducted by its headquarters office through the general manager, the editor and the secretaries, directors and personnel of councils, bureaus and committees.

Gross income of the association exceeded $2,000,000; property and equipment was valued at about $1,500,000, and securities at approximately $6,000,000.

The publications of the American Medical association in 1947 included the *Journal of the American Medical Association* with a circulation of more than 130,000 weekly; *Hygeia,* a health magazine for the public, with a circulation of approximately 250,000 monthly; nine medical journals for various medical specialties; a complete directory of the medical profession, medical schools, libraries and hospitals, and the *Quarterly Cumulative Index Medicus,* indexing regularly the contents of more than 1,500 medical periodicals. The association also continued to prepare and publish the *Standard Nomenclature of Disease and Standard Nomenclature of Operations.*

Through its bureaus of health education, information and investigation, the association continued to circulate millions of pamphlets and answer hundreds of thousands of questions, with the objectives of educating the public in health, preventing quackery and extending medical care. During 1947 the association had three programs on national broadcasting chains and circulated thousands of radio transcriptions to local radio stations. The library of the American Medical association maintained its services of supplying books and periodicals for references, developing bibliographies and indexes, and conducting a package library service for physicians on subjects of interest. The subjects most frequently requested during 1947 related to anaesthesia, undulant fever, arthritis, neostigmine therapy, infantile paralysis, penicillin and high blood pressure.

The Council on Medical Education and Hospitals continued to establish minimum standards for education in medical schools, hospitals, occupational therapy, physical therapy, record libraries and similar medical technologies; the Council on Pharmacy and Chemistry to investigate new remedies and control their advertising claims; the Council on Industrial Health to promote the care of workers in industry; the Council on Medical Service to investigate plans for medical care and encourage the growth of voluntary sickness insurance plans; the Bureau of Medical Economics to study problems related to the costs of medical care; the Bureau of Exhibits to prepare exhibit material for the profession and the public; the Council on Foods and Nutrition to investigate problems in this field and approve specialized preparations; and the Council on Physical Medicine to study physical devices used in the treatment of disease.

The association's printing establishment at its headquarters offices (535 N. Dearborn St., Chicago 10, Ill.) employed more than 700 people in 1947.

The American Medical association consistently opposed plans for compulsory sickness insurance such as those proposed by Senators Robert F. Wagner and James E. Murray and Representative John D. Dingell. It favoured, however, proposals for the extension and construction of hospitals and health centres throughout the U.S., the extension of preventive medicine through the Social Security act, the establishment of a national science foundation to encourage co-ordinated and intensified research, the widest possible development of public health facilities and encouragement to the individual states for the prepayment plans to provide medical care to the indigent and the medically indigent and for insurance against loss of wages caused by illness and against the costs of medical care.

The principal officers of the association in 1947 were: president, Edward L. Bortz, Philadelphia, Pa.; president-elect, R. L. Sensenich, South Bend, Ind.; secretary and general manager, George F. Lull, Chicago; treasurer, J. J. Moore, Chicago; editor of publications, Morris Fishbein, Chicago; business manager, Thomas R. Gardiner, Chicago.

The board of trustees included: William F. Braasch, Rochester, Minn.; Ernest E. Irons, Chicago; W. M. Johnson, Winston-Salem, N.C.; Louis H. Bauer, Hempstead, N.Y.; E. L. Henderson, Louisville, Ky.; John H. Fitzgibbon, Portland, Ore.; James R. Miller, Hartford, Conn.; Dwight H. Murray, Napa, Calif.; E. J. McCormick, Toledo, O.

(M. FI.)

**American National Red Cross:** *see* RED CROSS.

**American Samoa:** *see* SAMOA, AMERICAN.

**American Society of Civil Engineers:** *see* SOCIETIES AND ASSOCIATIONS.

**American Society of Composers, Authors and Publishers:** *see* SOCIETIES AND ASSOCIATIONS.

**American Society of Mechanical Engineers:** *see* SOCIETIES AND ASSOCIATIONS.

**American Society of Tool Engineers:** *see* SOCIETIES AND ASSOCIATIONS.

## American Veterans Committee.

The American Veterans Committee (A.V.C.), an organization exclusively for veterans of World War II, achieved national stature in 1947 with recognition by the Veterans' administration as a major veterans' organization and expansion of its membership to all 48 states.

Founded late in 1944 by Charles G. Bolte and Gilbert Harrison as a veterans' organization devoted to the principle of "citizens first, veterans second," the A.V.C. claimed in 1947 a membership of 115,000. At its second annual convention held in Milwaukee, Wis., in June 1947, the A.V.C. reaffirmed its liberal program in the domestic, international and veterans' fields. Major planks in the platform included advocacy of the Taft-Ellender-Wagner bill as the long-range solution to the housing problem; support of the Marshall plan but opposition to the Truman doctrine; opposition to the Taft-Hartley bill but with recommendations that "union leadership recognize its obligation to foster standards of maximum efficiency"; opposition to a veterans' bonus; endorsement of the Fair Employment Practice committee, anti-lynching and anti-poll tax legislation; advocacy of increases in subsistence allowances for student veterans and in ceilings on on-the-job trainee payments; endorsement of General Omar N. Bradley's program in the Veterans' administration; support of a free enterprise system based on "intelligent planning"; opposition to totalitarianism of both the left and the right; and support of the Baruch plan for international control of atomic energy.

A.V.C. elected Chat Paterson of Ottumwa, Ia., as national chairman and Richard Bolling of Kansas City, Mo., as national vice-chairman, in June 1947. Among A.V.C.'s major campaigns during the year were drives for enactment of "comprehensive housing legislation," and for action by congress "to halt sky-rocketing prices." The organization also conducted community programs urging veterans to reinstate their National Service Life Insurance. Although nonpartisan, and forbidden by its constitution from endorsing or rejecting candidates, the A.V.C. announced as a major objective, as 1947 ended, an effort "to get out the veteran vote in the 1948 elections." (A. L. N.)

## American Veterans of World War II (Amvets).

Amvets traces its history back to the autumn of 1943, when a veteran-student, Elmo Keel, formed a veterans' club. Within a few months, this group combined with another (National Veterans of World War II) organized by Andrew Kenny, a U.S. government employee. The merger was named American Veterans of World War II. In Sept. 1944, nine different vet groups from as many states met in Kansas City, Mo., to lay the groundwork for a unified national organization. They voted to call the new outfit American Veterans of World War II; the short designation, Amvets, was coined by a reporter.

Delegates elected Keel as acting commander. In Nov. 1945, the first full convention, representing 132 posts, elected as first regular commander, Jack Hardy, a Los Angeles attorney. Ray Sawyer of Arlington, Va., was the second national commander (elected at St. Louis, Nov. 24, 1946). In Oct. 1947, the third national convention of Amvets, representing 1,385 posts, elected as national commander Edgar C. Corry, Jr., of Des Moines, Ia.

Fundamentally, Amvets was conceived by men who said, "We Served Together, Now Let's Build Together."

At the first national convention, delegates decreed that this should specifically be accomplished through 11 basic principles, adopted as "the aims and purposes" of Amvets and written into article II of the national constitution.

Amvets functions on a nationwide scale. It is organized with a national headquarters, located at 724 Ninth St., N.W., Washington, D.C., and departments in the various states, the territories and the District of Columbia.

Local posts are formed within these departments. Intermediate administrative groups, operated by the National Executive committee, national vice-commanders or the department executive committees, or both, function within their respective regions and jurisdictions.

Amvets, as an organization, has three major purposes: (1) to promote world peace; (2) to preserve the American way of life; (3) to help veterans help themselves.

Amvets supported the United Nations, military appropriations, strong air defense and universal military training, coupled with a revision of the military justice system.

In 1947 Amvets was sponsoring a "G.I." (Government Interest) program to educate teachers, school boards and others in the great need for teaching U.S. government and history in a manner to stimulate the interest of schoolchildren in government. On the theory that the best way to clear up juvenile delinquency is to provide juvenile opportunity, Amvets inaugurated in March 1947 an annual national teen-age basketball tournament.

In the field of veterans' legislation, Amvets pushed for low-rent housing, an increase in the subsistence allowances for students in school and on-the-job training, cash payment of terminal leave bonds and equitable treatment of the disabled; but avoided pressing for other so-called "hand-out" types of veterans' benefits. (*See* also VETERANS' ORGANIZATIONS.)

(E. C. C.)

**Amvets:** *see* AMERICAN VETERANS OF WORLD WAR II.

## Anaemia.

Extensive tests of folic acid on patients with pernicious and macrocytic anaemias were reported from the United States, England, India, France and other parts of the world during 1947. Adequate increases in the number of red blood cells followed the use of the medicine, but neurologic complications were not stopped or prevented in pernicious anaemia. In fact one observer argued that folic acid produced neurologic disturbances. A haematologic improvement was noted only in those patients with a megaloblastic marrow. Cases of macrocytic anaemia refractory to liver therapy, but responding well to folic acid, were reported.

Patients with pernicious or macrocytic anaemia following gastrectomy exhibited little or no erythrocyte regeneration when given hexaglutamyl congugate in a yeast concentrate containing strong conjugase-inhibiting activity, but a significant response was obtained when they were given synthetic pteroylglutamic acid.

Pernicious anaemia and tumours of the stomach developed in the same individuals more often than in the general population as a whole.

Duodenal fluid of swine produced a powerful reticulocyte response and a conversion of a megaloblastic to a normoblastic bone marrow in a patient with pernicious anaemia.

Thiamin produced aggravation of the symptoms of diarrhoea and pellagrous dermatitis in inadequately nourished patients with pernicious anaemia and transient increase in the changes in peripheral nerves.

A hypochromic macrocytic nonhaemolytic anaemia with increased haemolysis appeared in patients with hunger oedema. There was a rapid therapeutic response to liver extract and autolyzed yeast.

Methionine produced a haematopoietic remission in a patient with macrocytic anaemia which had been resistant to large doses of liver.

In dogs with anaemia of haemorrhage and protein depletion,

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food proteins in adequate amounts produced a positive nitrogen balance, a maintenance of body weight, considerable amounts of new haemoglobin and plasma protein. A diet of pure amino acids essential for growth produced haemoglobin and plasma proteins but did not maintain body weight. Body or tissue protein was utilized when there was a deficiency to produce new haemoglobin and plasma protein.

Considerably more iron, injected intravenously, was required to maintain a normal plasma iron level in the presence of anaemia of chronic infection than in patients with iron deficiency anaemia. Intensive prolonged therapy with iron did not relieve the anaemia of chronic infection, and the anaemia was not the result of lack of iron but rather a defective capacity of the marrow cells to utilize the iron.

In children, 49% of the cases of anaemia were secondary to infection, 13% to deficient diet, 2% to immaturity, 28% to combinations of these factors and 8% to other causes.

Congenital haemolytic anaemia appeared to be a mild manifestation of erythroblastosis and occurred when the maternal antibody titer was low in cases both with univalent and with bivalent antibodies.

Congestive heart failure, secondary to anaemia, was more common in Africans than in the nonindigenous white population.

Hyperchromic macrocytic anaemia in two-year-old children was cured by fresh vegetables and fruits.

The leukopenia, granulocytopenia and anaemia of sulfanilamide, sulfathiazole and sulfadiazine poisoning were prevented or curtailed by feeding folic acid, liver extract or dried yeast extract.

Choline possessed no direct erythropoietic activity, but under certain circumstances it potentiated the effect of liver extracts in megaloblastic anaemias.

The anaemia produced in rats by the injection of turpentine was prevented by the simultaneous administration of cobalt salts.

In the treatment of anaemia, a definite species difference in the effect of food elements, vitamins and minerals was found.

Cases of hookworm disease sometimes failed to show anaemia, but others showed reversible microcytic hypochromic anaemia or an irreversible aplastic form.

The effective renal blood flow was reduced 31.8% to 46% in patients with chronic anaemia.

Rats fed a purified diet low in pantothenic acid or deficient in riboflavin developed anaemia.

Chronic thrombosis of the portal vein of exogenous origin was found in splenic anaemia and not related to a toxin liberated by the spleen.

Death from erythroblastosis foetalis was prevented by the replacement of about 63% to 75% of the infant's blood with a transfusion of compatible Rh negative blood after or during withdrawal of the patient's blood.

A new type of hereditary haemolytic jaundice with splenomegaly, macrocytic anaemia, reticulocytosis, normal cell fragility, but without spherocytosis, was described.

In the population exposed to atomic bomb explosions, in severe radiation injury, anaemia appeared in 7 to 28 days, while in the moderately severe cases, anaemia was noted in from 10 to 35 days.

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**Anaesthesiology.** Progress in anaesthesiology during 1947 generally followed careful investigation of existing agents. Much effort was expended in investigating chloroform, and for the most part previous opinions regarding this anaesthetic agent were verified; the answer to chloroform had not yet been finally settled. Because of the large number of anaesthetics which are satisfactory when used alone or when supplemented with other agents or with curare, the older anaesthetic agents and methods had become less important than they were when fewer agents were available.

Myanesin was suggested as a substitute for curare, but did not appear likely to supplant the latter, especially in the form of d-tubocurarine. Investigation into the application of physics to the study of anaesthetics and in the control of their administration advanced considerably.

Electronic devices for measuring the oxygen content of various mixtures of gases (the oximeter) became available and furnished useful information regarding the important question of providing enough oxygen for the patient without wasting it. Another type of oximeter attached to the ear provided valuable information concerning the oxygen content of arterial blood. An electronic device was developed to indicate the ether content of an anaesthetic atmosphere quickly and continuously—information never readily available previously. Devices for recording pulse rate proved unsatisfactory for anaesthesiologists. Similar automatic devices for determining the blood pressure had not been perfected.

The study of pathology from the standpoint of the anaesthesiologist was begun. Anaesthesia records for the collection of important data for statistical study were still further developed.

The year 1947 saw the most advanced development of organizational effort by both the medical and nonmedical anaesthetist in efforts to increase the skill and knowledge of the anaesthetist through educational programs and standards for instruction. In the field of control of pain, a new agent, methadon (4,4-diphenyl-6-dimethylamino-hepanone-3-hydrochloride) was given a rather extensive trial and proved to be a valuable agent in the relief of pain.

During 1947 missions were conducted by several countries into the war-torn areas. The representatives included anaesthesiologists as well as members of the other specialties of medicine and surgery. These missions accomplished much in the spread of late developments in all fields of medicine. (*See* also SURGERY.)

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**Anderson, Clinton Presba** (1895– ), U.S. government official, was born on Oct. 23 in Centerville, S.D. Ill health forced him to give up his studies at the University of Michigan in 1916, and he went to New Mexico where he worked as a newspaperman and insurance salesman. In 1940 he was elected on the Democratic ticket to the federal house of representatives and was twice re-elected. A conservative, Anderson supported President Franklin D. Roosevelt's foreign policy but frequently voted against the president's domestic reforms.

On May 23, 1945, about six weeks after Harry S. Truman became the country's chief executive, he named Anderson secretary of agriculture.

In 1946 Anderson went on record as opposing reimposition of food rationing in the U.S.; he also campaigned within the cabinet for lifting of price controls. In 1947 he advocated a national farm policy of "sustained abundance," and he submitted a proposal to congress to this effect on Oct. 6. However, the department of agriculture's determination to implement this program by maintaining high farm prices was at variance with the president's avowed policy of fighting inflation.

Toward the end of the year, disclosure that Edwin W. Pauley, special assistant to Secretary of Army Kenneth C. Royall, was a heavy trader in commodities brought a demand from Republican legislators that Anderson list all government officials engaged in commodities speculation. Anderson refused, asserting that a 1936 law specified that names of traders be kept confidential. However his suggestion that the law be rescinded in part to permit disclosure was acted upon by congress, which passed a resolution to that effect. The measure was signed by President Truman on Dec. 19, and three days later the agriculture department began publishing the names of all traders.

**Angling.** Returns for 1947 fishing licence sales were not available at the end of the year, but the 1946 tabulation placed a total figure at 11,068,717 licences sold in the United States at a total fee of $15,877,361. These figures cover the period from July 1, 1945, to June 30, 1946. The largest revenue was collected by the state of California, with $1,545,026, at a total licence sale of 764,557. The greatest licence sale was in the state of Michigan, with a total of 904,557. Officials estimated the increase for the year July 1, 1946, to June 30, 1947, at from 10% to 15%.

The 39th annual casting tournament was held at Long Beach, Calif., conducted by the National Association of Angling and Casting Clubs. Three new world records were set: Jimmie Green, of San Francisco, Calif., set a record with a 206-ft. cast in the distance salmon fly event for an average of $198\frac{2}{3}$ ft.; Dick Miller, of Huntington Beach, Calif., set a new world record in the $\frac{1}{2}$-oz. distance plug event with a long cast of 451 ft.; Cliff Wyatt, of Long Beach, Calif., set a record in the Skish fly accuracy event with a score of 95.

BLUEFIN TUNA, weighing 801 lb., the catch of Dr. Leon Storz, senior U.S. contestant in the international tuna matches held at Wedgeport, Nova Scotia, in Sept. 1947

Manufacture of fishing tackle was accelerated in the United States, and production on a small scale was resumed in England. Many new developments took place; the use of new metals such as beryllium, copper, magnesium and aluminum alloys, and glass fibre were used in making fishing rods. Top-quality rods were still scarce, as were silk fly lines, and reels were available in limited quantities.

"Spinning" or "thread-line fishing" made a national debut in the United States. This is a form of angling which employs the use of a stationary-spool reel. It originated in Europe.

Four world-record fish were caught by rod and reel during 1947. A 64-lb. 8-oz. muskellunge (length 58 in.; girth 24 in.) was caught in Favil lake, Wis., on May 17, by Alois Hanser. A 37-lb. rainbow trout (length $40\frac{1}{2}$ in.; girth 18 in.) was caught in Lake Pend Oreille, Ida., on Nov. 25, by Wes Hamlet. A 29-lb. 4-oz. Dolly Varden trout (length $36\frac{1}{4}$ in.; girth $24\frac{3}{4}$ in.), also from Lake Pend Oreille, was taken by R. C. Worst. A 4-lb. 4-oz. white perch (length $18\frac{1}{4}$ in.; girth $6\frac{1}{2}$ in.) was taken at Havana, Ill., on May 30, by George H. Brader.

A new caught-by-any-method record was officially accepted in the form of a 102-lb. muskellunge, taken in Minocqua lake, Wis. (A. J. Me.)

**Anglo-Egyptian Sudan.** A territory in northeast Africa under the joint sovereignty of Great Britain and Egypt. Area: 967,500 sq.mi.; pop. (est. 1942): 6,591,000. Chief towns: Khartoum (46,311); Omdurman (117,041); Wad Medani (5,429); El Obeid (33,328); Kassala (30,026); Berber (20,000); Port Sudan (26,255); Atbara (19,757). Languages: English, Arabic and various Nilotic and Negro tribal dialects in the south. Religion: Mohammedan; south Sudan 20% Christian. Governor-general in 1947: Sir Robert George Howe.

**History.**—Comparatively quiet progress was made in the Sudan in 1947 toward the declared end of independence and self-government. Anglo-Egyptian negotiations for the revision of the existing treaty had just broken down over the issue of the future of the Sudan when the year began. Egypt claimed that the Sudan was an essential part of the dominion of the Egyptian crown, both historically and on grounds of common religion and culture and, particularly, because of the importance of the Sudan in respect to the Nile, upon which Egypt's economy and life depended. The Egyptian demands for the total evacuation of British troops and the unification of the Nile valley were met by the refusal of the British government as expressed in the terms of its declaration transmitted to Egypt through the British embassy in Cairo on Jan. 25: that it could not "sign away a people's right to self-determination in a treaty with a third party." The Sudanese, declared the British government, might "at the proper moment of political maturity choose full independence from Egypt." This attitude was unacceptable to Egypt which claimed full and perpetual sovereignty over the Sudan, and the next day the Egyptian premier informed the press that his government was about to submit the whole question to the United Nations. When in August the question came before the Security council, only the Arab states, represented by the Syrian delegate, fully supported the Egyptian claims, although even he coupled his support with a plea for a gesture by the United Kingdom. The council, with some abstentions, recommended the resumption of direct negotiations between Britain and Egypt. There for the time the matter rested. (*See* EGYPT.)

Meanwhile, inside the Sudan there was progress toward the government's declared object of independence within 20 years. The Gordon Memorial college was being made ready to receive the university in which the future rulers of the Sudan were to be trained and, on July 29, it was announced that the government had approved the recommendations of a report which sought to increase the Sudanese share in the central government. This report provided for a central legislative body representative of the whole Sudan, the majority of whose members were to be elected. An executive council was to be set up composed of 12 members of this legislative assembly. In March Sir Hubert Huddleston, governor-general of the Sudan, resigned and was succeeded by Sir Robert Howe. (H. S. D.)

**Education.**—Elementary schools (1945) 117 (19,400 boy pupils); girls' schools 62 (6,700); technical schools 2 (221 boys); private schools 52 (6,900 boys and 3,300 girls); sub-grade and Koran schools 345 (23,000). Gordon Memorial college, students 134, excluding Kitchener school of medicine.

**Finance.**—Revenue (est. 1947) £E9,208,000; expenditure £E9,148,341; public debt (liability at Dec. 31, 1946) £E13,433,126. Currency: Egyptian pound (£E) = 413.33 U.S. cents.

**Trade and Communication.**—Foreign trade (1946): imports £E11,467,962; exports £E9,267,831. The principal government imports were 22,635 short tons of sugar valued at £E572,587 and 49,160 short tons of coal and coke valued at £E186,120. Great Britain contributed 23.9% of the imports and received 36.6% of the exports. India came next with 22% and 25.6% respectively, followed by Egypt with 19.1% imports and 18.4% exports. Communications: (1947) roads for motor traffic *c.* 1,000 mi.; railways 2,056 mi.; steamer services 2,325 mi.; motor vehicles licensed (1944) 3,399 cars, commercial vehicles and cycles; telephone subscribers (1945) 3,546; exchanges (1946) 46. Telephone communication with Great Britain was re-established at the end of 1945.

**Agricultural and Mineral Production.**—Exported production (1946), in short tons: raw Egyptian cotton 56,339; cotton seed (Egyptian) 80,562; gum arabic 34,082. Cattle and sheep, numbering 30,314 and 62,744 respectively, were also exported.

**Angola:** *see* PORTUGUESE COLONIAL EMPIRE.
**Animal Fats:** *see* VEGETABLE OILS AND ANIMAL FATS.
**Animal Industry, Bureau of:** *see* AGRICULTURAL RESEARCH ADMINISTRATION.
**Annam:** *see* FRENCH OVERSEAS TERRITORIES.
**Anniversaries and Centennials:** *see* CALENDAR, 1948, page xxii.
**Antarctica:** *see* EXPLORATION AND DISCOVERY.

## Anthropology.

One of the most significant developments in anthropology in 1947 was the marked expansion of activities of an international character. This tendency was illustrated by the establishment or reorganization of international anthropological congresses and societies, of large scale co-operative research projects and in the United States, by the increasing emphasis on foreign area programs in the universities.

The 28th International Congress of Americanists met in Paris Aug. 24–31, attended by approximately 200 persons from 22 countries. Under sponsorship of the International African institute the Conference on African Anthropological and Linguistic Research was held in London in July. Problems of anthropological research and the progress of colonial government in Africa were discussed by British scholars and colonial officials and by anthropologists from France, Belgium, the Netherlands, Italy, Sweden and Portugal. The first session of the Pan-African Congress on Prehistory, organized by L. S. B. Leakey, met at Nairobi, Kenya, British East Africa, from Jan. 14 to 23, with Abbé H. Breuil as president and R. Broom, vice-president. The congress was successful in bringing together more than 60 archaeologists, palaeontologists and geologists from Africa and Europe for discussion of fundamental problems of human evolution and the development of early cultures arising from recent discoveries in Africa. Plans were made for co-ordinated research in the future, and a permanent organization was set up to arrange for regular sessions every four years.

The International Hylean Amazon institute, with headquarters at Belém, Brazil, was established by U.N.E.S.C.O. (United Nations Educational, Scientific and Cultural Organization) for biological, geological and anthropological exploration and study of the Amazon basin. In the social sciences the project would include a study of the anthropological background and studies of housing and town planning for an equatorial region. This part of the project was being organized by Alfred Metraux, senior social officer in the department of social affairs, United Nations.

In order to encourage full participation of American scientists in the affairs of U.N.E.S.C.O. the National Research council established a special committee on U.N.E.S.C.O., on which Gene Weltfish represented anthropology. The new committee was to act as a clearing house for suggestions and inquiries concerning U.N.E.S.C.O. and would work to promote the exchange of scientists under auspices of U.N.E.S.C.O. The National Research council also set up a new committee on Asiatic anthropology, under the chairmanship of Lauriston Sharp. The council's committee on international co-operation in anthropology (M. J. Herskovits, chairman) completed plans for issuing a new edition of the *International Directory of Anthropologists.*

An important trend at U.S. universities was the development of area programs, in which anthropology joined with other disciplines in the integrated study of particular areas. The largest of such programs were those established at Cornell university, Ithaca, N.Y., Harvard university, the University of Pennsylvania, Philadelphia, Pa., and Yale university, each supported by substantial grants from the Carnegie corporation. The Harvard Russian Research centre was to be directed by Clyde Kluckhohn, with a staff of historians, political scientists, psychologists and anthropologists. The Yale Southeast Asia program was headed by Raymond Kennedy, who was to be joined by Karl Pelzer, geographer, John F. Embree and other anthropologists. At the University of Pennsylvania, W. Norman Brown was to direct a teaching and research program devoted to the study of India, Pakistan and adjacent countries. The place of area studies in the colleges and universities and the rôle of anthropology and the other social sciences in such studies were discussed in four reports which appeared during the year: *The Ethnogeographic Board,* by W. C. Bennett; *Area Studies in American Universities,* by William N. Fenton (presenting results of the Ethnogeographic board's survey of army area and language-training courses); *Language and Area Studies in the Armed Services: Their Future Significance,* by R. J. Matthew; and *Area Studies: With Special Reference to their Implications for Research in the Social Sciences,* by R. B. Hall.

Indicative of postwar growth of anthropology in England was the formation of an Association of Social Anthropologists (A. R. Radcliffe-Brown, president, E. E. Evans-Pritchard, hon. secretary), for the purpose of promoting the study and teaching of social anthropology. In Oslo, Norway, two new organizations were formed, the Norwegian Ethnological society, with Nils Lid as chairman, and the Norwegian Ethnological institute, under direction of Mrs. Marta Hoffman, and later, Hilmar Stigum.

The Institut International d'Archéocivilization was established at the Centre International de Synthèse, Paris, by delegates from eight European and American countries. André Varagnac was permanent secretary of the new society, which has as its purpose the development and improvement of techniques for comparative research in the fields of archaeology, folklore and the history of religion. Another new French society (Société d'Ethnographie Française) was established at the Musée National des Arts et Traditions Populaires, Paris. First president of the society was Michel de Bouard.

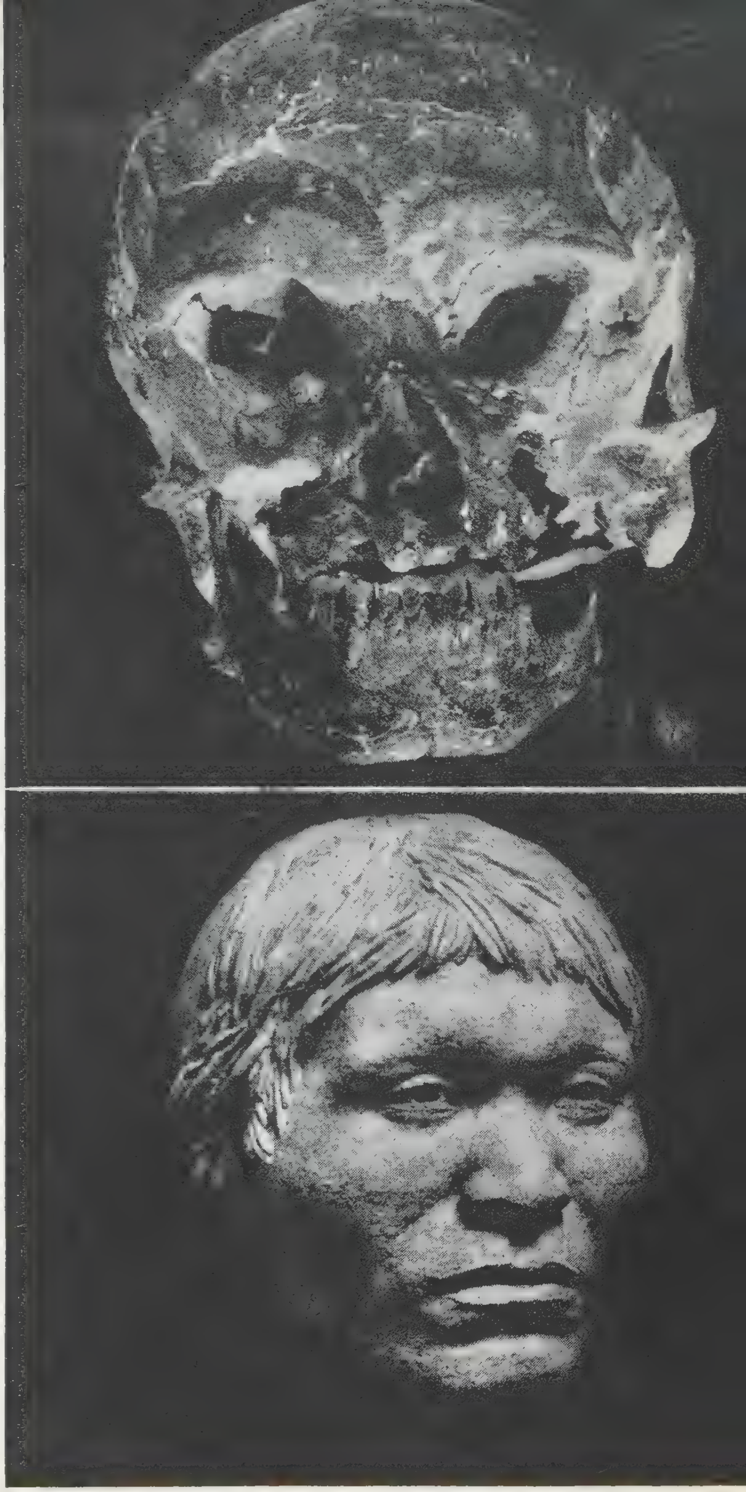
Also of anthropological interest was the inauguration of a new quarterly journal, *Human Relations,* devoted to integration of the social sciences and published jointly by the Tavistock Institute of Human Relations, London, and the Research Center for Group Dynamics, Massachusetts Institute of Technology, Cambridge, Mass.

In Norway Dr. Gutorm Gjessing was appointed professor of ethnography and director of the Ethnographical museum, University of Oslo. C. F. Voegelin assumed chairmanship of the newly created department of anthropology at Indiana university, Bloomington, Ind. A school of naval administration to train naval officer personnel for administering civilian populations in the U.S.-held Pacific islands was organized at Stanford university, Stanford University, Calif., by Felix Keesing. At Santa Fe, N.M., the Laboratory of Anthropology, the Museum of New Mexico and the school of American research were consolidated, with S. G. Morley as director. F. G. Rainey was named director of the University museum, Philadelphia, and the department of anthropology at the University of Pennsylvania was enlarged by the appointment of A. I. Hallowell, L. C. Eiseley, and W. M. Krogman. Alexander Lesser became executive director of the Association on American Indian Affairs, New York, N.Y. Clyde Kluckhohn was elected president of the American Anthropological association and E. A. Hoebel was made president of the American Ethnological society.

In the first year of operation since its reorganization, the American Anthropological association instituted a number of new procedures aimed at making it an effective force in stimulating and synthesizing activities in the various fields of anthropology. A full-time secretariat was established to carry out the policies and directives of the council and the executive board. Erminie W. Voegelin was appointed to this post, with the title of executive secretary.

The largest anthropological research program of 1947 or of any recent year was the series of co-ordinated investigations in Micronesia under the auspices of the Pacific Science board of the National Research council. Forty-four anthropologists, linguists and geographers, representing 22 institutions, joined in the project, which was supported by the Pacific Science board, the office of naval research and the participating organizations. The object of the work was to provide basic scientific information on the Marshall, Caroline and Marianas Islands, which had been closed to western scientists since their occupation by the Japanese. Particular attention was given to problems of rehabilitation, health and welfare of the inhabitants. Harold J. Coolidge was executive secretary of the board and G. P. Murdock co-ordinator of the anthropological program. Anthropologists working on the project include H. G. Barnett, Sir Peter Buck, E. G. Burrows, Isadore Dyen, Kenneth P. Emory, W. W. Gruelich, W. A. Lessa, G. P. Murdock, Alexander Spoehr, John Useem and J. E. Weckler.

In South Africa the excavations of R. Broom and J. T. Robinson resulted in discoveries that might have a crucial bearing on the question of the origin of man. At Sterkfontein, embedded in breccia of Pliocene age, they found the bones of a number of individuals of the South African ape-man, *Plesianthropus transvaalensis.* Among the finds were a complete skull, a well preserved lower jaw, various limb bones and teeth and a perfect pelvis. Though possessing some hominid features, the skull and jaw were essentially apelike. The limb bones and teeth were more like those of man, and the pelvis was remarkably human in appearance, being scarcely distinguishable from that of a Bushman. These latest finds reinforced Dr. Broom's view, shared by Le Gros Clark, that *Plesianthropus* and the other *Australopithecinae* were a group of higher primates closely related to man, and the group from which man may have evolved. A geological and palaeontological expedition sent out by the University of California, organized by Wendell Phillips, also began to search for the early forerunners of man in South Africa. In connection with this expedition E. M. Loeb made



FOSSILIZED SKULL (above) dating back an estimated 8,000 to 10,000 years, which was unearthed at Tepexpan, Mex., on Feb. 22, 1947. Below it is a reconstructed head of Tepexpan man modelled by Leo Steppat over a cast of the skull ethnological studies among the Bushmen and Ovambo, while Henry Field went to northeastern Egypt for archaeological and anthropometric studies.

A skeleton discovered by Helmut de Terra in an Upper Pleistocene formation at Tepexpan, Mexico, provided the first apparently indubitable evidence of human remains of Quaternary age in North America. The skull was mesocranic and high-vaulted, resembling late prehistoric Indian types from the eastern United States and Mexico. Other American field research included T. D. Stewart's anthropometric and physiological studies of the Cakchiqul, or "Highland Maya," of Guatemala, and Isabel Kelly's ethnographic work among the lowland Totonac of Veracruz. John C. Ewers worked among the Blackfeet in Montana and Alberta, and Richard Slobodin, with a grant from the Arctic Institute of North America, made acculturation studies in the Mackenzie valley.

Robert H. Lowie received the Viking fund gold medal and $1,000 prize in 1947 for his outstanding contributions to ethnology. The $10,000 prize offered by McGraw-Hill for the best book on a scientific subject written for laymen was awarded to Clyde Kluckhohn for his manuscript, *Anthropology and the World Today*. Harold S. Gladwin's *Men Out of Asia* won a $1,000 prize in the same contest.

The final volume of Kristian E. Schreiner's monumental work, *Crania Norwegica*, was published by the Institute for Comparative Research in Human Culture, Oslo. In an article in *Fornvännen*, Elias Dahr described skulls from a Neolithic site at Visby, on the Island of Gotland, as representing probably the purest prototype of the Nordic race. Publications in anthropometry included the first two reports of the quartermaster corps research project, *Survey of Body Size of Army Personnel, Male and Female*, by Francis E. Randell. The reports described techniques and procedures used in measuring 113,921 service men and women. Franz Weidenreich's paper, "Facts and Speculations Concerning the Origin of *Homo Sapiens*," postulated ten evolutionary phases through which the hominids passed. In a paper in the *American Journal of Physical Anthropology*, A. H. Schultz contested M. F. A. Montagu's claim that man is the most variable of all primates. Other important works in physical anthropology were *Anthropologica Helvetica*, by O. Schlaginhaufen, and *Indian Skeletal Material from the Central Coast of Peru*, by M. T. Newman.

The American Museum of Natural History issued W. D. Wallis' monograph on the Canadian Dakota and the third volume of Margaret Mead's ethnological studies of the Mountain Arapesh of New Guinea. In *Trinidad Village*, M. J. and Frances S. Herskovits continued their investigations of cultural adaptations of transplanted Negro groups in the new world. The *Journal of the Washington Academy of Sciences*, the *American Anthropologist* and the *Southwestern Journal of Anthropology* carried articles by Leslie White defending the concept of cultural evolution and opposing the present tendency to emphasize the role of the individual in society and to regard culture as essentially a psychological phenomenon. Opposing viewpoints were presented by David Bidney, R. H. Lowie, and A. R. Radcliffe-Brown. Other significant ethnological publications of 1947 included *Guam and its People*, by Laura Thompson; *The Navaho* and *Children of the People*, by Clyde Kluckhohn and Dorothea Leighton; *A Navaho Autobiography*, by Walter Dyk; *Chippewa Village*, by W. Vernon Kinietz; *Moche, a Peruvian Coastal Community*, by John Gillin; *San Blas Acculturation*, by D. B. Stout; *Tuamotuan Religious Structures and Ceremonies*, by Kenneth P. Emory. (H. B. Cs.)

**Anti-Aircraft Guns:** *see* MUNITIONS OF WAR.

**Antigua:** *see* LEEWARD ISLANDS.

**Antilles, Greater and Lesser:** *see* WEST INDIES.

## Antimony.

The recoverable metal content of antimony ores mined in the major producing countries during late years was as follows:

Table I.—*World Production of Antimony*

(Short tons)

| | 1937 | 1939 | 1941 | 1943 | 1945 | 1946 |
|---|---|---|---|---|---|---|
| Algeria | 858 | 247 | 438 | 994 | 95 | — |
| Australia | 444 | 461 | 460 | 586 | 190 | ? |
| Bolivia | 7,238 | 10,202 | 15,080 | 18,228 | 5,614 | 7,063 |
| Canada | 20 | 600 | 1,465 | 513 | 767 | 315 |
| China | 16,206 | 13,246 | 8,806 | 472 | — | ? |
| Czechoslovakia | 1,099 | 1,116 | 1,813 | ? | ? | ? |
| Italy | 456 | 743 | 903 | ? | 298 | ? |
| Mexico | 10,789 | 7,984 | 11,289 | 13,873 | 8,877 | 6,665 |
| Peru | 1,429 | 854 | 1,587 | 2,725 | 2,250 | 1,068 |
| South Africa | — | 7 | 491 | 1,720 | 2,480 | 2,368 |
| Turkey | 591 | 507 | 6 | 9 | — | ? |
| United States | 1,266 | 361 | 1,117 | 5,113 | 1,776 | 2,305 |
| Yugoslavia | 1,595 | 3,678 | ? | ? | ? | ? |
| Total | 42,550 | 41,000 | 52,100 | 55,000 | 29,200 | 27,400 |

Production dropped so much at the close of World War II that the postwar supply situation was almost as stringent as at any time during the war.

**United States.**—The trend of the antimony industry in the United States is as follows:

Table II.—*Data of Antimony Industry in the U.S., 1941-46*

(Short tons)

| | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|
| Production | | | | | | |
| In ore | 1,214 | 2,944 | 5,556 | 4,735 | 1,930 | 2,505 |
| In alloys* | 2,958 | 3,267 | 2,085 | 2,857 | 1,992 | 1,457 |
| Imports | 27,504 | 21,474 | 29,969 | 17,761 | 24,649 | 8,742 |
| In ore | 19,386 | 20,946 | 28,755 | 17,080 | 22,643 | 5,903 |
| Metal | 7,469 | 127 | 932 | 293 | 627 | 2,593 |
| Other forms† | 649 | 401 | 282 | 388 | 1,379 | 246 |
| Consumption, primary | 29,994 | 23,852 | 19,508 | 23,756 | 25,761 | 17,515 |
| Secondary recovery | 21,629 | 18,200 | 15,483 | 15,886 | 17,148 | 19,115 |
| Smelter output | ? | ? | 20,624 | 20,000 | 21,000 | 12,457 |

*Antimony content of antimonial lead produced from foreign and domestic ores.
†Estimated antimony content of alloys, oxide and liquated sulphide.

Domestic mine production increased somewhat above the low level of 1945, but with the 1946 imports at the lowest level after 1935, the supply was short. Antimony used as metal dropped from 12,606 short tons in 1945 to 11,662 tons in 1946, but consumption in compound form dropped from 13,155 tons to 5,853 tons.

After price control was abandoned in Nov. 1946 antimony increased in price from 15.84 cents per pound to 24.875 cents to 29.625 cents in December, 31.19 cents on Feb. 1, 1947, 35.94 cents on March 15, and 36.03 cents on Oct. 14. (G. A. Ro.)

**Anti-Saloon League of America:** *see* SOCIETIES AND ASSOCIATIONS.

## Anti-Semitism.

Whether anti-Semitism increased or decreased in 1947 is difficult to ascertain. For the most part, men everywhere were preoccupied with the still uncompleted task of meeting the more general and fundamental problems of reconstruction and peace. Although the difficulties encountered were discouraging, there were no serious incidents of disabilities against, or persecution of, Jews. This fact, in itself, warranted cautious hope. That a year of such general unrest and confusion was not replete with anti-Semitic movements and demonstrations might have indicated some progress over the comparable period at the end of World War I. Since organized anti-Semitism is always a symptom of widespread frustration and disillusionment, the guess might be ventured that, despite the difficulties encountered in finding a formula for the peace in 1947, men had not despaired of success.

Objective observers were practically unanimous in reporting that in a hungry and anaemic Europe, people of Jewish faith were rebuilding their lives, on a basis of equality with their fellow citizens, in the traditionally liberal countries of the west-

ANTI-SEMITIC RIOTING broke out in Liverpool, Manchester and other English cities on Aug. 1, 1947, after the slaying of two British sergeants in Palestine. A workman is shown clearing broken glass from a vandalized shop window in Liverpool

ern part of the continent. This same condition prevailed in the Scandinavian nations. Norway went to the displacement centres of the continent to offer new homes to displaced persons of Jewish faith, in a number equal to those who had been lost during the German occupation and the war. In France, Léon Blum again emerged as an important political figure.

Naziism seemed to have left a more enduring mark upon the country of its origin. Most responsible observers felt that, in 1947, Germany was still an unhealthful place for people of Jewish faith.

The eastern and central parts of the continent were closed in by the "iron curtain." It was almost impossible, therefore, to learn the true condition of people of Jewish faith in those areas. But unless there had been a radical and unannounced change of soviet policy, these people were unquestionably better off than they had been either during the war or in the years immediately preceding it. Officially, anti-Semitism was a crime against the state in soviet Russia. The one exception seemed to be Poland. There neither the "iron-curtain" nor a soviet-dominated government seemed successful either in ending anti-Semitism or preventing the world from knowing it. The Polish government seemed to be making extraordinary and successful efforts to eradicate official anti-Semitism, but it was compelled to admit that, in 1947, it had not successfully eliminated it from the masses of a people so long indoctrinated with prejudice.

In the United States, one new phenomenon was apparent. Anti-Semitism was no longer discussed only by people of Jewish faith, the clergy and sociological academicians. Two motion pictures and one best-seller novel indicated that there was at least a superficial interest in the problem among large numbers of people. Authorities in the fields of activities to counteract anti-Semitism were divided in their opinions as to the benefits of this new phenomenon. Some felt that it was healthy to have the whole subject fully aired; others held that such popularization would serve only to bring the problem to the attention of millions who had never been conscious of its existence. The success of these popularizations seemed to indicate that the first school of thought would prevail. At least the United States would meet the problem, in whatever dimensions it might exist, aware of its many-headed character.

One new element was injected into the entire problem, on a world basis. In November the United Nations voted to partition Palestine into Jewish and Arab states. This plan represented a yielding to Zionist political pressures. As a political movement, it was inevitable that Zionism should divide the world, as it had divided Jews, into "pros" and "antis." Anti-Zionism had appeared in vigorous fashion in England in 1946 and continued through 1947. The United Nations' decision solidified anti-Zionist opinion in the Arab states. Jews appeared in grave jeopardy throughout the Arab world and Zionists and Arabs were fighting each other in Palestine.

This United Nations proposal made an evaluation of anti-Semitism difficult, unless one now made the necessary and legitimate distinction between Jew and Zionist. Discrimination against human beings of Jewish faith was one thing—and indefensible; opposition to a political theory (Zionism) was another—and legitimate. Not all Jews are Zionists. Unless the world learned and remembered that, the divisiveness of pro- and anti-"Jewish" feeling, which would really be pro- and anti-Zionist, might wreak havoc wherever Jews lived, for themselves and the countries of which they were integral citizens. This distinction held the answer to anti-Semitism in the foreseeable future. (*See* also FASCISM: JEWISH RELIGIOUS LIFE; REFUGEES.)

(EL. BR.)

**Antitrust Law:** *see* LAW.
**Apples:** *see* FRUIT.

## Appleton, Sir Edward Victor

(1892– ), British physicist, was born on Sept. 6 and was educated at St. John's college, Cambridge. He started his academic career as an assistant demonstrator in experimental physics. Later, he was physics professor at the University of London (1924–36) and professor of natural philosophy at Cambridge (1936–39). Appleton became secretary of Britain's department of scientific and industrial research in 1939.

He began the study of radio fading while serving with the British army during World War I as a signal officer. These studies led to his research in the ionosphere and experimentation with reflected radio waves to measure the distance of unseen objects. His discoveries in this field were important in the development of radar during World War II.

He was awarded the Nobel prize in physics on Nov. 13, 1947, for his contributions to ionospheric research. Upon being notified of the honour, Sir Edward said that much of the credit for his discoveries belonged to J. H. Dellinger, a U.S. scientist with whom he collaborated in studying the radar problem and to the research students who had worked with him.

**Appropriations and Expenditures:** *see* BUDGET, NATIONAL.
**Apricots:** *see* FRUIT.

## Aquariums.

The movement to re-establish public aquariums, closed during World War II, continued during 1947; those in Paris, Naples and Copenhagen were reopened.

Plans to build new institutions exhibiting aquatic life—as commercial, self-sufficient businesses, as public exhibitions supported wholly or in part by public funds, or as adjuncts to institutions of learning—were underway in several parts of the world, including Suez, Buenos Aires, Acapulco, Quebec, New York city, Jerusalem, Bombay and La Jolla and Hermosa Beach, Calif. At the latter four cities new buildings were actually under construction, or structures originally built for other purposes were being remodelled.

The collections of the great majority of aquariums were still below prewar levels because the necessary collecting stations and shipping lines had yet to be re-established.

Fishes for home aquaria were receiving attention from the commercial interests involved, and collecting stations for fresh-water tropical species were reopened in several far eastern areas and in West Africa. (C. W. C.)

**Aqueducts.** Up to 1947, the bureau of reclamation in the U.S. department of the interior had developed, designed and constructed many projects to conserve and utilize the rivers and water resources in the 17 western states. It had built many thousands of miles of canals, tunnels, siphons and pipelines to make possible the irrigation of more than 5,000,000 ac. of arid or semiarid farm lands.

The 71-mi. San Diego aqueduct, branching from the Colorado River aqueduct near San Jacinto, Calif., was to carry about 50,000,000 gal. of water daily to the San Diego area. Designed by the bureau of reclamation, it was built under the supervision of the bureau of yards and docks of the U.S. department of the navy. Construction was essentially completed in 1947.

The 41-mi. Salt Lake aqueduct under construction by the bureau of reclamation on the Provo River project in Utah, was about two-thirds complete at the end of 1947. It was built to transport nearly 100,000,000 gal. of water daily from Deer Creek reservoir, located northeast of Provo, to the vicinity of Salt Lake City, for industrial, domestic and irrigation purposes.

Aqueduct construction during 1947 on the bureau's Colorado-Big Thompson project included the completion and start of emergency operation of the 13-mi. Alva B. Adams tunnel; completion of the Rams Horn tunnel; and the placement of concrete lining in the Prospect Mountain tunnel and the $10\frac{3}{4}$-ft.-diameter Aspen Creek siphon. These structures were built to convey Colorado river water from the western slope of the Rocky mountains under the continental divide to the Big Thompson canyon on the eastern slope for power production and the supplemental irrigation of 615,000 ac. of fertile farm land in northeastern Colorado.

The first 107 mi. of the 125-mi. Coachella canal in southern California was complete, while another 8-mi. section was under construction. This canal, branching from the All-American canal west of Yuma, Ariz., was to extend northwest as far as Indio, Calif., and water some of the most fertile land in the southwest.

On the 2,000,000-ac. Central Valley project in California, under construction by the bureau of reclamation, work continued on several large irrigation canals. The first 73 mi. of the 160-mi. Friant-Kern canal were complete or under construction. This huge canal was to convey San Joaquin river water from back of Friant dam to rich farm lands as far south as the Kern river. Construction was underway on a 24-mi. section of the Delta-Mendota canal, to carry Sacramento river water from the San Francisco bay area southward 120 mi. along the San Joaquin river and discharge it into the San Joaquin at Mendota, Calif., thereby providing water for irrigation purposes along the San Joaquin, in lieu of that diverted by the Friant-Kern canal.

Construction of major irrigation canals, initiated in 1946 by the bureau, continued on the Columbia Basin project in Washington. Columbia river water stored in Lake Roosevelt behind Grand Coulee dam was to pass through these river-size canals and be used for the irrigation of more than 1,000,000 ac. in central Washington. The 14-mi. Main canal, with a capacity sufficient to irrigate most of this vast acreage, was to be the largest irrigation canal in the northwest. Other canals under construction in this area included the 80-mi. West canal and the 130-mi. East Low canal. These latter canals were to branch from the Main canal and serve a total of over 530,000 ac. (*See* also CANALS AND INLAND WATERWAYS; DAMS; TUNNELS.)

(M. W. Ss.)

**ARA:** *see* AGRICULTURAL RESEARCH ADMINISTRATION.

**Arabia.** A peninsula of *c.* 927,000 sq.mi.; pop. (1941 est.) 7,756,000. It consists politically of two independent Arab states, Saudi Arabia and Yemen, of the following nominally independent territories: the sultanate of Oman and Masqat (Muscat), the territories of the Trucial sheikhdoms of Oman and Qatar, the sheikhdoms of Kuwait and of Bahrein,

KING IBN SA'UD (right) being entertained by U.S. executives of the Arabian-American Oil company in Jan. 1947, during the royal tour of inspection at Dhahran, site of a huge new oil development

an archipelago in the Persian gulf; and of the colony and protectorate of Aden (*q.v.*). Language: Arabic; religion: Moslem. Rulers: Saudi Arabia, King Abdul-Aziz ibn Abdurrahman al-Faisal al-Sa'ud; Yemen, Zaidi Imam Yahya ben Muhammed ben Hamid ed Din; Oman and Masqat, Sultan Sayyid Said bin Taimur; Kuwait, Sheikh Sir Ahmed ibn Jabir al-Subah; Bahrein, Sheikh Sir Sulman ibn Hamad al Khalifah.

**History.**—The main developments in Arabia during 1947 were connected with oil. Two new pipe lines, to carry the oil of the peninsula to the Mediterranean, were planned, one from Kuwait (a branch of which would go to Abadan, and would transport Persian oil to the Mediterranean), the other from Dammam to Sidon. In the sheikhdom of Kuwait work on the rich wells in the south of the territory, suspended during World War II, was resumed. The presence of oil-drilling machinery made possible the sinking of deep bore water wells, which might result in the irrigation of an area in the east of King Ibn Sa'ud's dominions hitherto regarded as irredeemably sterile. A railroad, to run from Dammam to Riyadh, and to be operated by diesel-electric locomotives, was being planned by U.S. engineers at the king's request.

King Ibn Sa'ud continued to harbour Rashid Ali, the Iraqi who organized the rebellion in 1941; and publicly protested against the activities of King Abdullah of Trans-Jordan in regard to Greater Syria (*see* Trans-Jordan); but tranquillity remained unbroken throughout the peninsula. Saudi Arabia and also Yemen, in common with all other Arabic-speaking powers, sent delegates to the United Nations during September to support the cause of the Palestine Arabs.

Yemen was admitted as a member of the United Nations on Sept. 30.

Arabia, that is, the kingdom of Saudi Arabia and the sheikhdoms of Kuwait and Bahrein, formed one of the most important oil-producing areas in the world. Its proximity to Palestine and the fact that its development was almost entirely in U.S. and British hands gave it a special political importance.

(F. St.)

**Finance.**—The monetary unit in Saudi Arabia is the Saudian rial. Exchange rate, 1942: 1 rial = Rs. 1 (Indian) = 30.12 U.S. cents.

**Trade.**—With Great Britain: (1947, first eight months) Saudi Arabia and Yemen: imports £564,017; exports £484,014. Bahrein, Kuwait and Trucial sheikhdoms of Oman and Qatar: imports £1,910,425; exports £1,704,665. Masqat and Oman: imports £20,201; exports nil. Saudi Arabia: exports petroleum, skins, wool, gold, charcoal, cattle, dates, clarified butter and gum.

**Arab League:** *see* Arabia; Egypt; Iraq; Palestine; Syria and Lebanon; Trans-Jordan.

## Aranha, Oswaldo

(1894– ), Brazilian diplomat, was born on Feb. 15 in Alegrete, in the state of Rio Grande do Sul. He studied law and social sciences and his first political office was as prefect of Alegrete (1926). He held various important posts in his native state and in 1930 became leader of the liberal movement. He held several cabinet and assembly posts, and in 1934 was appointed ambassador to the U.S.

In 1937, he returned to Rio de Janeiro and became minister for foreign affairs in the following year. In this post, Aranha was said to have laboured strenuously to cement genuine amicable relations between the Vargas dictatorship and the North American "colossus," to the extent of jeopardizing his political career, as Vargas at the time was not overfriendly toward Washington.

He played a leading role in the major hemispheric conferences between 1938 and 1944, and succeeded Pedro Leao Velloso as Brazil's permanent delegate on the United Nations security council in 1946. In the spring of 1947, he presided over the special session of the U.N. general assembly on the Palestine question, and in the subsequent autumn session he was elected president of that body on Sept. 16.

In a statement Oct. 17 at the annual Lafayette college alumni dinner, Aranha contended that there was no reason to be pessimistic over war talk, arguing that those "who want war cannot make war and those who can make it do not want war."

## Archaeology.

**Western Hemisphere.**—*Arctic North America.*—J. L. Giddings of the University of Alaska undertook dendrochronological and archaeological investigations in the Kotzebue area of Alaska. Ivar Skarland of the University of Alaska made an archaeological survey of the Bering Sea region of Alaska. Frank H. H. Roberts reported that a fluted point found in northern Alaska was a true Folsom type of the kind found at the Lindenmeier site in Colorado. This was the first instance of a fluted Folsom point's having been found in Alaska.

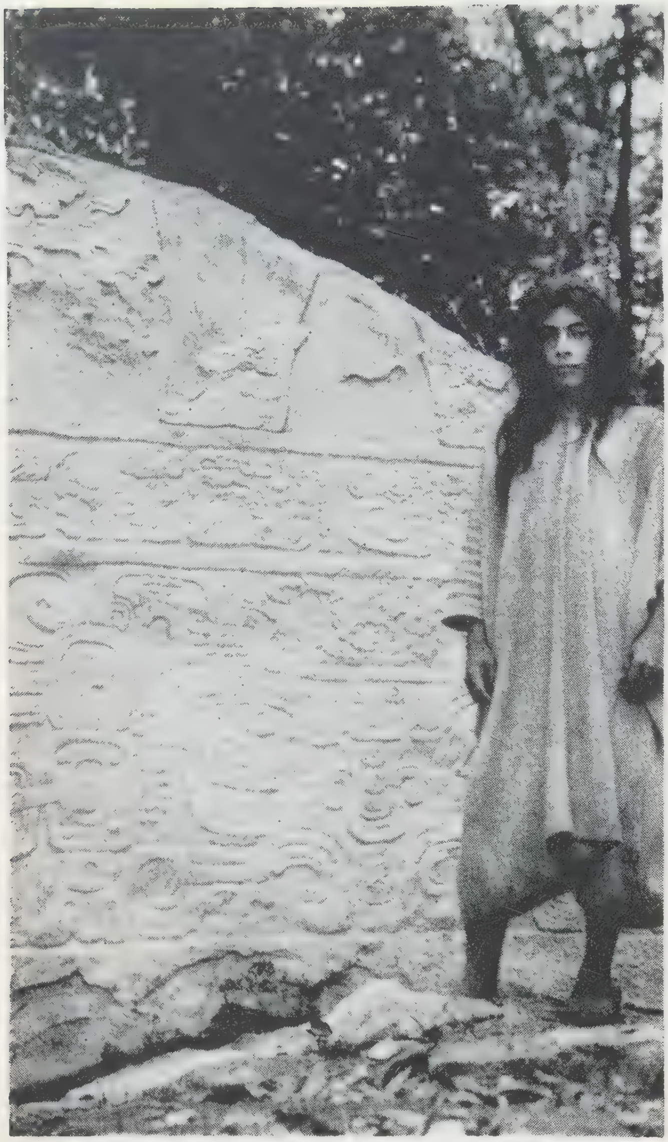
*Eastern North America.*—Under the sponsorship of the Massachusetts Archaeological society and the R. S. Peabody foundation of Andover, archaeological excavations were undertaken at the Titicut site near Bridgewater, Massachusetts. Three or four cultural horizons were discovered at this site. The uppermost and most recent horizon which was examined by Maurice Robbins of the Massachusetts Archaeological society contained protohistoric or historic materials. The earliest horizon of the site was investigated by Frederick Johnson of the Peabody foundation. He found a chipped stone complex of possible great antiquity lying upon wind-blown glacial sand.

Douglas S. Byers of the R. S. Peabody foundation excavated a site on an island in the Union river near Ellsworth, Me. The site was a stratified village. Among the significant discoveries was the presence of pottery accompanied by artifacts indicative of the Red Paint culture.

In Massachusetts, a protohistoric village site near Westfield was excavated by Harold Mohrman. Near Kingston, Charles E. Sherman excavated a shell midden; the upper level of this site belonged to the historic period. Near Brookfield, a village site excavated by George L. Carey produced gouges, bannerstones, semilunar knives and other artifacts indicative of the Laurentian Aspect. Howard Torrey, investigating a small shell midden near Ipswich, discovered burial traits that associated it with the Point Peninsula Focus of New York. Ripley P. Bullen excavated a site near Marshfield. Beneath a Colonial period dump he found a shell midden containing stone gouges, steatite vessel fragments and pottery sherds. Early in the year remains of an ancient fish trap were found in Boston during the excavation of a building 800 ft. from the site of the famous Boylston street fishweir.

A number of archaeologists and institutions investigated Delaware sites in the east. Richard MacNeish and John Witthoff of the University of Michigan excavated two sites near Easton, Pennsylvania. One of the sites historically identified as Unami Delaware produced Mohawklike remains with contact materials; the other was stratified. The upper level produced a Mohawklike complex with late Owasco connections. The middle level contained early Owasco materials plus a ceramic complex of cord-marked pottery with incised decoration. The bottom level, unrelated to the upper levels, produced an early Woodland complex.

William A. Ritchie of the Rochester museum excavated an historically identified Munsee Delaware site south of Port Jervis, New York. The top level of the site produced Mohawk cultural remains, the intermediate level contained "epigonal Iroquois" remains, and the bottom level was early Owasco (Castle Creek). Ritchie also excavated an early Point Peninsula site at Jacks Reef in central New York.



A LACANDONE, contemporary Maya Indian, standing before part of a stele, or basic date glyph, found by archaeologists of the Carnegie institution at the ruins of Bonampak, Mex., in 1947

Richard MacNeish made an analytical survey of Iroquois collections in the eastern U.S. in an attempt to differentiate the tribes of the period from 1550 to 1700, and to obtain relationships between prehistoric Iroquois complexes and the historic groupings.

T. F. McIlwraith, Norman Emerson and Margaret Thompson of the Royal Ontario museum excavated a historic Huron site near Warminster, Ont.

Wilfred Jurey of the University of Western Ontario excavated a historic Huron site near Lake Simcoe and a Neutral site near London, Ont. Frederica de Laguna of Bryn Mawr college and Douglas Leechman of the National museum of Canada made an archaeological survey of the upper St. Lawrence river valley in Ontario. Emerson F. Greenman of the University of Michigan continued his research program in the Manitoulin district of Ontario.

Richard Morgan and Raymond Baby of the Ohio State museum directed the excavation of a late Woodland village site in Delaware county, north of Columbus.

A joint expedition of the University of Chicago and the Illinois State museum excavated historic village sites on the Illinois river near Ottawa. John McGregor and Kenneth Orr directed the work of exploration. European trade materials were associated with the following complexes: Fisher, Fort Ancient, Oneota and late Woodland. It was tentatively considered that the Fisher unit represents the Kaskaskia Illinois and the Fort Ancient unit the Shawnee.

A field party from the University of Michigan made stratigraphic tests of a Hopewellian village site in Calhoun county, Ill. Tremendous quantities of sherds were obtained from a thick midden deposit.

William G. Haag of the University of Kentucky made an archaeological survey of the Wolf Creek dam reservoir in southern Kentucky. A wealth of material, much of it new in Kentucky, was found in the course of the survey. Gordon R. Willey of the bureau of American ethnology made an archaeological survey of the Caney Fork river basin in central Tennessee. Thirty new sites were recorded.

An archaeological survey of the Chattahoochee river valley in Alabama was conducted by Wesley Hurt for the Alabama Museum of Natural History. John W. Griffin and G. Hale Smith of the Florida park service investigated a number of sites in coastal Volusia county. The sites tested by excavation were representative of all periods from the earliest fibre tempered pottery complexes to historic Timucua.

Under the auspices of the Smithsonian institution Robert L. Stephenson made an archaeological survey of the Whitney reservoir area on the Brazos river between Hill and Bosque counties in Texas. As part of the Smithsonian Institution River Valley project, Joe Ben Wheat surveyed parts of coastal Texas.

*Plains Area.*—Most of the archaeological research in the Plains area continued to be focused on proposed reservoir areas that would become inaccessible after construction of dams.

In collaboration with the Smithsonian institution, Carl Chapman of the University of Missouri tested a number of important sites on the White river in Missouri. Robert E. Bell of the University of Oklahoma made an archaeological survey of several reservoir areas in Oklahoma. Certain sites along the Faurche Maline produce a culture resembling the Archaic cultures of eastern North America.

Wesley L. Bliss of the Smithsonian River Basin project, during an archaeological survey of reservoir areas in Montana and Wyoming, discovered numerous sites, some giving evidence of great antiquity. Elmer E. Meleen of the University of South Dakota excavated a number of sites in the vicinity of Pierre, S.D.

Paul L. Cooper of the Smithsonian River Basin survey made a reconnaissance of the Fort Randall reservoir in South Dakota. His excavations at the Pease creek site revealed two occupations separated by sterile layers of soil. Gordon W. Hewes of the University of North Dakota tested a number of sites in the Heart Butte reservoir. One of these sites, containing a large rectangular earth lodge, was Archaic Mandan. Marvin F. Kivett of the Smithsonian River Basin survey discovered numerous occupation sites in the Garrison reservoir, N.D.

Walter M. Hlady of the Manitoba museum, Winnipeg, made an archaeological survey along the Red river of the north in eastern Manitoba. Chris Vickers of the Manitoba Historical society examined a number of pottery producing sites of the historic period in western Manitoba.

*Pacific Slope.*—L. S. Cressman of the University of Oregon undertook archaeological explorations on the Klamath Indian reservation in an attempt to determine the prehistoric affiliation of the Klamath Indians.

Archaeological field parties from the University of California excavated an early site near Thornton; a historic Nisenan site near Sacramento; and a San Dieguito-Lake Mohave site near Los Angeles. Franklin Fenenga made an archaeological survey of reservoir areas in central California under the direction of the Smithsonian institution.

*Southwest.*—Deric O'Bryan of Gila pueblo made an archaeological survey of the Tularosa valley in New Mexico. O'Bryan excavated developmental pueblo ruins at Mesa Verde in Colorado. The Chicago Natural History museum expedition undertook archaeological investigations in the Pine Lawn valley of New Mexico. John Rinaldo and E. B. Sayles made an archaeological survey of the Pine Lawn valley. Strategic sites were excavated under the direction of Paul S. Martin assisted by George I. Quimby and John Rinaldo. Ernst Antevs studied the geology of the Pine Lawn valley in relation to the Indian occupancy and the dating of early sites. The sites investigated were as follows: a Chiricahua stage Cochise site; a Pine Lawn phase Mogollon site; two Three-circle phase Mogollon sites; and a Reserve phase pueblo site.

The University of New Mexico summer field school under the direction of Dr. Paul Reiter investigated sites in Chaco canyon, N.M. The University of Arizona conducted its Archaeological Field school at Point of Pines in the San Carlos Indian reservation under the direction of Emil W. Haury and E. B. Sayles.

J. O. Brew of the Peabody museum, Harvard university, made an archaeological survey of some 10,000 sq.mi. on the Arizona-New Mexico border. Alfred K. Guthe of the University of Chicago excavated a pueblo ruin near Cahone, Colorado in association with Ansel F. Hall's Explorer's club.

*Middle America.*—Fossil skeletal remains were discovered in Feb. 1947 near Tepexpan, Mexico by Helmut de Terra and Hans Lundberg. The find was made by means of geophysical techniques and apparatus developed by Lundberg. The search for Palaeo-Indian remains was made in an area that De Terra previously had determined would meet the geological requirements for such a find.

The skeletal remains at Tepexpan were found in an alluvial deposition of post-Wisconsin pluvial times, dating back 8,000 to 10,000 years. The possibly related artifacts were scanty, but seemed to belong to the San Juan lithic industry discovered by De Terra in 1946. The skeletal remains consisted of a cranium, broken femurs and tibias, and other bones. The skull was almost brachycranial and possessed some primitive characteristics.

One of the most spectacular events of the year was the investigation of Bonampak, by a Carnegie institution expedition. Bonampak, an ancient Maya ceremonial centre, includes a group of eight standing temples in Chiapas, Mexico, near the Guatemalan border. In one of the temples were three rooms containing brightly painted murals depicting processions of nearly life-size figures, battle scenes and elaborate ceremonies of the Maya. These were the most extensive and complete murals ever found in the Maya region, and provided a wealth of information about art, costumes, ornaments, musical instruments and other categories. They were painted on stucco plastered over the limestone walls of the temple. Other significant remains found at Bonampak included some elaborately carved altarstones and stelae. The largest stela was about 21 ft. high, 8 ft. wide and weighed at least 4 tons. According to the calendrical glyphs carved on the stelae, Bonampak was in its prime in the 7th century A.D., although it may have been founded earlier.

Early in the year Gordon F. Ekholm of the American Museum of Natural History undertook further archaeological reconnaissance of coastal Mexico south of the Huastec area.

Some significant discoveries were made by a Smithsonian institution-National Geographic society expedition to Chiapas, Mexico, in the summer of 1947. Excavation of a deep midden deposit under the supervision of Phillip Drucker revealed two ancient cultural levels. The lowermost level of the midden produced the remains of a preceramic culture whereas the uppermost level presented evidence of people who used crude pottery. The ceramic level was believed to have been pre-Olmec and pre-Zapotec. This find seemed to offer the first concrete evidence of a real "archaic" horizon in Mexico.

Excavations were continued at Zaculeu, a well preserved site near Huehuetenango, Guatemala. Directed by Stanley H. Boggs, John Dimick, Aubrey Trik, and Gus Stromsvik, the excavations produced quantities of stratified material and a large tomb whose contents seemed to be no later than the 6th or 7th centuries A.D. A large amount of the pottery from Zaculeu could be cross-dated with pottery from Kaminaljuyu, northern Guatemalan finds and sites in central Mexico.

The Carnegie institution of Washington continued its program of archaeological research in Guatemala. Edwin Shook directed the excavation of a site at Finca Paraiso. Investigation of the site revealed a very productive mound and an unusual, circular communal sweat bath. At Nebaj Ledyard Smith of the Carnegie staff excavated a series of tombs dating from Early to Post-Classic times.

President Carey Croneis of Beloit college and Andrew Whiteford and Moreau Maxwell made a brief survey of sites and archaeological collections in Mexico, Guatemala, Costa Rica,

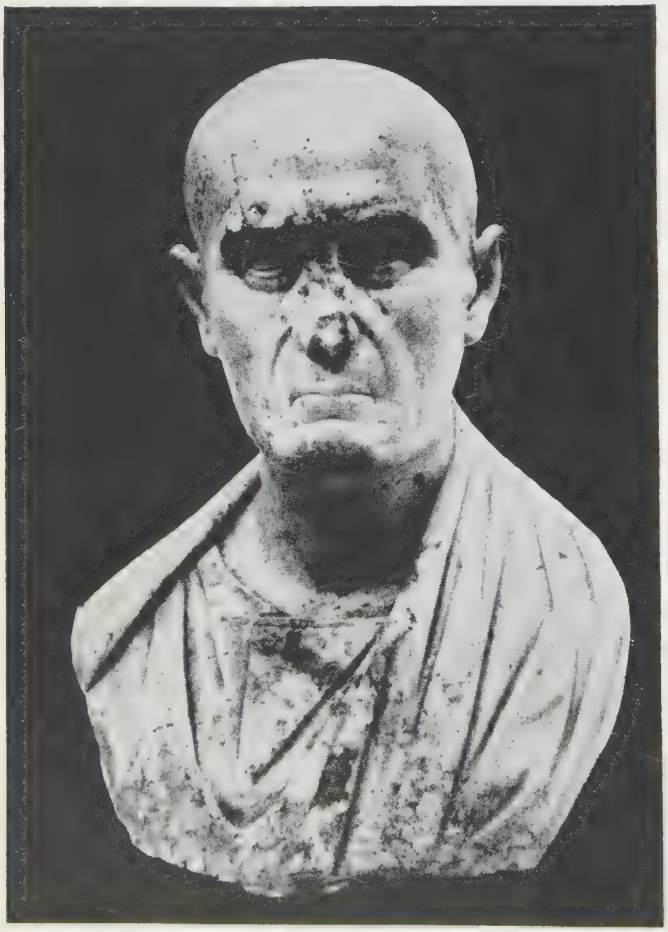
EXCAVATIONS of temples VI and VII at Eridu, in southern Iraq, reported on in 1947

Panamá and Colombia. The survey was undertaken as a preparatory step in the planning of an archaeological program in Middle America and South America by Beloit college.

*South America.*—In Colombia, Luis Duque Gomez, director of the Instituto Nacional, continued his excavations of graves near San Augustin. Gregorio Hernandez de Alba made a survey of the Tierra Dentro region. Gerardo Reichel-Dolmatoff of the Instituto de Arqueologia y Etnologia del Magdalena excavated at the well-known Tiarona site of Pueblito. Preston Holder of the University of Buffalo excavated a burial cave near Convencion, probably a Motilon burial site.

BIBLIOGRAPHY.—Among significant publications of 1947 were the following: *Man in Northeastern North America,* edited by Frederick Johnson; J. O. Brew, *The Archaeology of Alkali Ridge, Southeastern Utah;* Alex D. Krieger, *Culture Complexes and Chronology in Northern Texas;* Alfred V. Kidder, Jesse D. Jennings and Edwin M. Shook, *Excavations at Kaminaljuyu, Guatemala;* Paul S. Martin, George I. Quimby and Donald Collier, *Indians Before Columbus, 20,000 Years of North American History Revealed by Archaeology.* (G. I. Q.)

**Eastern Hemisphere.**—In 1947, for the first time after World War II archaeological field parties from western Europe and the United States began to resume programs of excavation comparable to prewar activities. This was so particularly in the near east and in European countries where reconstruction had gone forward, less so in eastern Europe, Italy, Greece and the far east. In Greece, the government's decision that no digging might be resumed until the national museums were in order, had kept proper excavation at a virtual standstill, with only minor clearances being allowed. As 1947 ended, the reaction of the countries of the Arab nations to the United Nations' decision for partitioning of Palestine had compromised the position of many foreign archaeologists in the Arab near east. Nevertheless, there were increasing signs of field activity on every hand.



MARBLE BUST OF A ROMAN, dating from the 1st century A.D., excavated in the ancient agora at Athens, in 1947, by archaeologists of the American School of Classical Studies

So far as reported, the important finds of the year came in the near east. Several expeditions were at work in the early dynastic pyramid—cemetery fields in the Sakkara district in Egypt. The fine work of the Iraq government's Directorate of Antiquities was continued with the opening of work on the site of ancient Eridu, and the exposure of an Ubaid period temple on the site. In Turkey, several important finds were made by both Turkish and foreign archaeologists; perhaps the most spectacular of these was the work done on a late "Syro-Hittite" site at Kara Tepe by the University of Istanbul.

There was also news during the year with possible important bearing on archaeological chronology. In Nov. 1947 Robert Redfield, chairman of the department of anthropology of the University of Chicago, announced the result of conferences held by his staff with Profs. H. S. Brown, W. F. Libby and H. C. Urey of the university's department of chemistry, concerning the use of the radium or the carbon 14 isotope content of certain archaeological materials for the purpose of fixing chronology. Robert Merrill, a graduate student in anthropology at Chicago, prepared (in consultation with Professors Libby and Brown) a report on the literature, status and possible potentialities of the two phenomena and their application to archaeological chronology. Essentially both phenomena concern the gradual and predictable decline of the radium or carbon 14 content in organic matter—radium with a half-life of about 2,000 years, and carbon 14 with a half-life of about 5,000 years. The possibility of using carbon 14 seemed perhaps more promising (theoretically its accuracy for dating at the half-life would be within 2% and its range might go back at least 40,000 years), but both methods were subject to experimental error and insufficient theoretical interpretation.

**Pleistocene Prehistory.**—The American School of Prehistoric Research returned to the cave in Tangier which C. S. Coon of Harvard had examined before the war. A report on this cave, the Mugharet el 'Aliya, was published by Bruce Howe and H. L. Movius, Jr. (vol. XXVIII—1, *Papers Peabody Museum,* Harvard, 1947), in which the Mousterian and also the important Upper Palaeolithic finds were described. The implements found in the Upper Palaeolithic layers were of great significance, bearing on the question of relationships between the Aterian and Solutrean type tools and the possibility of a North African centre of origin of the Solutrean.

A preliminary note was published on the excavations at the cave of Ksar 'Akil near Beirut, Lebanon, at which cave J. G. Doherty, J. F. Ewing and J. W. Murphy, of Boston college and Fordham university again resumed work. The cave contained some 3 metres of Gravettian deposit overlaying 4 metres of Middle Aurignacian, then 5 metres of Chatelperronian, then a "mixed zone" of some 3 metres, and a basal 4 to 5 metres of Upper Levalloiso—Mousterian.

In Turkey, the task of finding, recording, and testing the various open and cave sites of prehistoric Anatolia, instituted by S. A. Kansu, rector of the University of Ankara, was carried forward. İ. Kiliç Kökten published a map of the sites so far surveyed in reports of Ankara university. Certain fine examples of early Acheulean bifaces were discovered near Gazi Antep, and it became even more than ever certain that the Pleistocene prehistory of Anatolia followed a pattern much like that of Syria and Palestine.

From farther Asia, H. R. van Heekeren illustrated examples of the middle Pleistocene chopper-tool type of artifact from Siam, an area from which tools of this tradition of manufacture had not yet been known.

**The Near East.**—Excavation in Egypt was confined for the most part to the region about Cairo,—at Sakkara (12 mi. south of the pyramids at Giza) and at Helwan on the opposite side of the Nile. At Sakkara, Walter Emery found a mastaba-tomb of considerable size which contained the name of Queen Merneith—either the wife or daughter of King Zer, an early king of the first dynasty. The tomb had been burnt and badly destroyed by robbers and contained the charred remains of a large wooden coffin. Within the enclosure were also tombs of retainers, apparently buried at the time of the funeral of the royal owner. Emery's discovery posed two questions: (1) whether the so-called tombs at Abydos (which included a tomb of Merneith) were really only cenotaphs and (2) whether the buried retainers were in fact slaves killed to accompany and aid their great owner in the next world.

At Helwan, the Egyptian government's Service des Antiquités carried out a new campaign on the huge first-second dynasty necropolis. The finds were mainly small objects, but these included symbols of Osiris and Isis (hitherto unsuspected at so early a stage). There was also some use of stone slabs in the construction of the tombs, which also represented an earlier instance of this usage than had been suspected. Another interesting aspect of the work done by the Egyptian Service des Antiquités was the identification of the "south" or "bent" pyramid of Dahshur with King Snefru of the fourth dynasty. Clearances within this pyramid seemed to indicate that it had never been successfully robbed and that an intact royal burial might yet be concealed in it.

In Mesopotamia, the spectacular find of the year concerned the protohistoric Ubaid period, the earliest cultural manifestation in southern Iraq. There, at the site of ancient Eridu, the Iraq Directorate of Antiquities' expedition under Seton Lloyd and Fuad Safar exposed a succession of temple structures which had been in part overlaid by the ziggurat of the third Ur dynasty period. Five successive levels, sealed by the ziggurat, were represented only by mud-brick platforms on which temples must once have stood. At the sixth and seventh levels, the Iraqi archaeologists came upon traces of the temple structures proper, as well as the platforms on which the temples had stood. Soundings made below the seventh level revealed at least five even deeper strata. The temple of the seventh level was best preserved; it was of the recumbent ⊢⊣ type of plan, known already in the late Ubaid stage in northern Iraq, and antecedent in form and in its niched decoration to the typical Mesopotamian temple of later historical times. The broad central room of the temple was provided with an altarlike structure against one end-wall, and with a central bench which may have been an offering table. Large quantities of fish bones were found about it, indicating that the temple may have been a shrine to the god Enki, lord of the deep. The temples of both the sixth and seventh layers were unequivocally dated by their painted pottery content to the Ubaid period. It had once been postulated that one or more ethnic changes took place in southern Mesopotamia between the flourish of the Ubaid assemblage and the early dynastic Sumerian period. Other evidence pointed to at least a cultural continuity. The appearance of the characteristic temple plan already in the Ubaid period added considerable weight to the continuity theory.

The Directorate of Antiquities also reported the discovery of two hitherto unrecorded rock-reliefs in north Iraq, one Sassanian and the other Assyrian.

In Palestine, I. Ben-Dor worked for two months on a Middle Bronze Age temple in Nahariyeh. The work of the Hebrew university at Khirbet Kerak, at the southern end of the Sea of Galilee, was reported; more of the spectacular red-black burnished pottery of the end of the Early Bronze Age was recovered and also a stone-founded and paved building of some size and complexity of plan.

SLAB-BUILT cist graves in an ancient cemetery in the Samtavro area which were discovered in 1947 by soviet archaeologists of the Georgian Academy of Sciences

Dr. R. Ghirshmann returned to the site of Susa in Iran, long the scene of a French archaeological mission. It was planned to completely retest the site in a stratigraphic sense; efforts so far had been confined to the uppermost (Islamic, *et al.*) levels. Daniel Schlumberger, director of the French Archaeological Mission at Kabul, was continuing the clearance of the Greco-Oriental site of Balkh in Afghanistan. From India, R. E. M. Wheeler reported on studies made by the government archaeological survey on the numerous megalithic tomb structures of the Deccan plateau and the south. Certain detailed similarities between these structures and the megaliths of Iran, the Caucasus, France and England could be cited. In fact, the Indian megaliths covered a broad range of time, from the latter part of the third millennium to the beginning of the Christian era or even later. In 1947 simultaneous excavations were undertaken on a site equated with the Isila of King Asoka's edicts, and the megalithic cists and stone circles adjacent to the site. Clear evidence for dating both the site and the megaliths to not later than the 1st and 2nd centuries A.D. was obtained.

There was considerable archaeological activity in Turkey during 1947. The year saw the final campaigns of two great British archaeologists, John Garstang at his site of Mersin in Cilicia, and Sir Leonard Woolley at Atchana in Hatay (both sites in southern Turkey). At Mersin Garstang completed a long stratigraphic sequence with a succession of 26 occupational levels covering a range from Islamic to earliest village times (some 6,000 or more years). At Atchana-Alalakh, Woolley's final campaign revealed an underground tomb structure attributed to Yarim-Lim, a king of ancient Alalakh in the 18th century B.C. Unfortunately the burial itself was much deeper than the modern ground-water level, and hence was not reached. From pottery recovered in other deeper operations, Woolley assessed the founding of the town to have taken place within the fourth millennium B.C. Others judged this pottery to be at least 1,000 years later in date. The Atchana expedition also opened a small trench in Tell esh Sheikh, a low mound nearby, and exposed materials of the period of Ubaid influence in Hatay.

On the Anatolian plateau proper, the important work at Alaca was continued under Hamit Kosay, and the French under Claude Schaeffer carried on a stratigraphic rechecking of their earlier work in Malatya. A brilliant short season's work was carried out for the Turkish Historical society at two mounds near Elbistan, by Tahsin Özgüc and his wife Nimet Özgüc. On a large mound called Karahüyük they exposed a sequence of classical, Phrygian, Hittite and "Early Bronze" materials. This sequence would not only serve to check the key site of Alishar, but seemed to yield antiquities of considerably finer quality than Alishar. At a smaller mound, nearby, the Özgücs also exposed a rich Hittite layer, and in one room came upon Egyptian scarabs, a Babylonian seal of the time of Hammurabi and a Mycenaean vase. The most spectacular excavations in Turkey, however, were those of the Istanbul university under A. Bahadir, H. Cambel, and H. Th. Bossert at Kara Tepe, near Gaziantep. This site contained the architectural, sculptural and epigraphic remains of a mountain fortress of "Syro-Hittite" times (early first millennium B.C.). Inscriptions in both Aramaic and Hittite were found which, when studied, would doubtless be of great historical importance.

From the U.S.S.R. there were reports of archaeological activity in Georgia, where the Georgian Academy of Sciences and the Dzhavakishvili Institute of History staffs excavated in cemeteries and town sites of the Samtavro and Armazi districts. Armazi was the seat of Georgian governors in the 2nd–3rd centuries A.D. Clearances of ancient monuments were also carried out in Moscow, in celebration of that city's eighth centenary.

In Greece the major clearances were those made by the American School of Classical Studies in ancient Corinth and in the Athenian Agora. The major effort in the Agora excavations was the removal of architectural remains of Roman houses and earlier Greek houses and shops, in the area where the new permanent museum was to be built. A marble head of Heracles, a portrait bust of an elderly bald-headed man, and a number of marble inscriptions were found. There was also a report on work finished late in 1946 by the French school at Athens working on the island of Delos. Objects of gold, ivory and bronze, of the Mycenaean and Cycladic Geometric periods were recovered. The National Museum of Athens reopened, to the extent of three fine rooms in its new wing.

P. Dikaios, curator of the Cyprus museum, made trial excavations at Sotira near Kourion, Cyprus, for the University Museum of Philadelphia. The site yielded materials called "neolithic" and assigned to the fourth millennium, B.C.; it was described as containing intact tholoi houses, streets and a massive wall on one flank of a hill.

The excavation of the 8th century A.D. Carolingian basilica at St.-Denis, near Paris, was continued by S. M. Crosby. Various interesting architectural details were recovered, also some burials (including that of a 13th century bishop, still in his vestments and gloves and with his pastoral cross). The most valuable discovery was a six-foot slab of stone bearing a bas-relief of the 12 apostles. Stylistically, this bas-relief would be of great importance in understanding the artistic changes from late Romanesque to early Gothic sculpture. The slab was dated at approximately 1140 A.D.

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## Archery.

**Archery.** The 63rd championship tournament of the National Archery association was held at Amherst Mass., with 378 archers participating, a new record. Twenty new records were established. Archers came from Canada Sweden and 25 states. The championship winners were:

| | | | |
|---|---|---|---|
| | Senior Division | | |
| Women's Championship | | Ann M. Weber, Bloomfield, N.J. | |
| | Scores: Double National Round | 144– 980 | |
| | Double Columbia Round | 144–1096 | |
| | Double American Round | 179–1307 | 3383 |
| Men's Championship | | Jack K. Wilson, Springfield, Mo. | |
| | Scores: Double York Round | 280–1698 | |
| | Double American Round | 180–1386 | 3084 |
| | Junior Division | | |
| Boy Champion | | Jerome J. Moga, Niagara Falls, N.Y. | |
| | Scores: Quadruple Junior American Round | 360–2868 | |
| Girl Champion | | Lorraine Avery, Saginaw, Mich. | |
| | Scores: Double Columbia Round | 140– 870 | |
| | Double American Round | 172–1086 | 1956 |
| | Flight Shooting | | |
| | Women | | |
| Regular Style | Millie Hill, Dayton, O. | 401 yd. 2 ft. 4 in. | |
| | Men | | |
| Regular Style | Irving Baker, Westfield, N.J. | 575 yd. 2 ft. 3 in. | |
| Free Style | Paul J. Berry, Middletown, O. | 589 yd. 2 ft. 10 in. | |
| | Junior Division | | |
| | Boys | | |
| Regular Style | Richard E. Finke, Covington, Ky. | 319 yd. 2 ft. 5 in. | |
| | Girls | | |
| Regular Style | Virginia Hersh, Dayton, O. | 308 yd. 2 ft. 8 in. | |

New records established: Single York, 141–881 by Jack Wilson; Double York, 280–1698, Jack Wilson; Junior American, 90–740, Richard E. Finke; Double Junior American, 180–1428, Jerome J. Moga; Single American (girl), 88–558, Lorraine M. Avery; Double American (girl), 172–1086, Lorraine M. Avery; 65 lb. flight, 547–2–2, Herb Henderson; all weights flight, 523–2–6, Don Gourley; 50 lb. flight, 575–2–3, Irving Baker; 100 yd. range, 70–392, Jack Wilson; 50 yd. range, 30–288, Jack Wilson; 40 yd. range, 30–262, Russ Reynolds; tied clout record, 36–276, Ann M. Weber.

**CONTESTANTS** in the women's national archery tournament held at Amherst, Mass., in Aug. 1947

An important event took place during February when the Olympic Bowman league held its 20th anniversary indoor tournament in which there were almost 1,400 contestants—the largest number ever to shoot in a mail match. Eleanore Hamilton had the highest average score for the five matches in the Olympic round with 774.0; while Marie Krohmann led the Chicago round with an average of 763.6. W. J. Burton of New Zealand won first place among the men in the Olympic round with 799.6; Ralph Gargiulo was first in the Chicago round with 775.6. Cleveland Archery club placed first for both men and women for team honours.

The 2nd championship tournament of the National Field Archery association was held at Salt Lake City, Utah, with 266 archers from 28 states, the District of Columbia and Canada attending. The championship winners were: (men) Erwin C. Pletscher, Bakersfield, Calif., 2345; (women) H. A. "Babe" Bitzenburger, Los Angeles, Calif., 1608; (junior boy) David Webb, Wichita, Kan., 1045; (junior girl) Kathleen Powell, Portland, Ore., 593.

Louis Carter Smith retired after 26 years service as secretary-treasurer of the National Archery association; his place was filled by Henry S. C. Cummings. The 1948 National tournament was to be held at Reno, Nev., during the first week in August. (H. S. C. C.)

## Architecture.

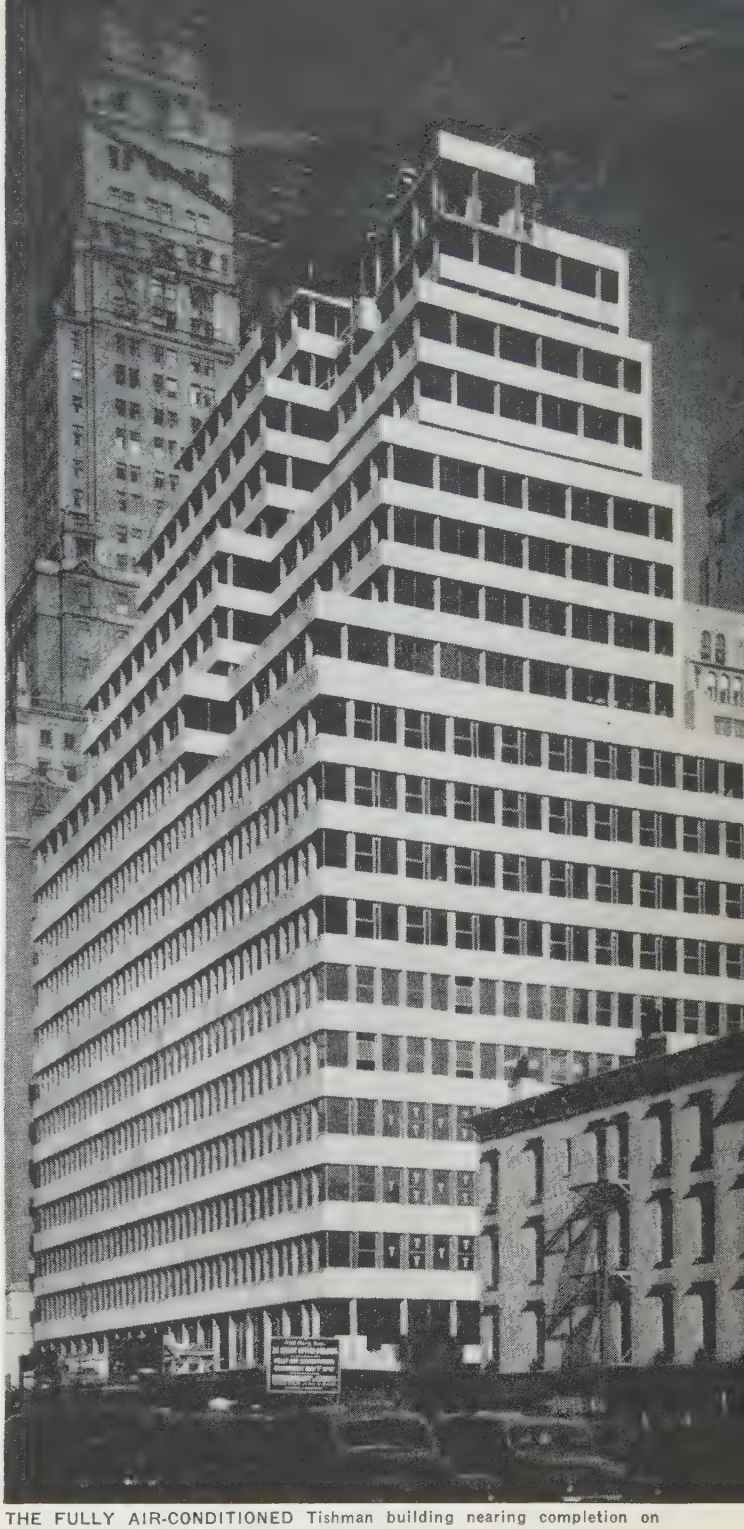
A considerable increase in the total volume of civil building took place during 1947, and in the United States housing reached the volume of the great boom of 1925. Elsewhere the end of the year saw appreciable gains in spite of strikes, shortages and such setbacks as the blizzard in Great Britain. Materials and construction benefitted by new inventions; housing by increased mass production. The degree of recovery from World War II was highlighted by the preoccupation of architects and planners with values, such as arose out of the consideration of the designs for the permanent headquarters of the United Nations.

**Materials and Construction.**—Technological innovations poured forth, although some were announced before they had been thoroughly tested. Among them were Flexicore, a hollow precast panel for floors and walls, with rigidity and light weight; Alfred Poor's Hexadrome, based on a system of four-inch triangles, with a high weight-strength ratio; Higgen's Thermo-Namel system, a prefabricated panel with a patented foamy core surfaced with metal, later modified to omit the metal, and called Thermo-Con. The John B. Pierce foundation announced a resilient concrete, made with asphalt which was as comfortable as wood flooring, but more durable and more economical.

In Great Britain, a war product, Holoplast, was adapted for structural purposes. Made of plastic-impregnated paper tubes with a variety of surfaces, it was found light, durable, impervious to damp, vermin and fireproof. William Lescaze and Robert Davison offered a metal-clad, insulated wall panel. Rigidized sheet metals permitted many possibilities for new expression, particularly in returning curves.

Shell-concrete construction for long spans continued to be studied, notably in the Jewish centre for Cleveland by Eric Mendelsohn. Such developments also pointed up a trend toward reducing the weight and bulk of architecture, both in fact and in appearance; a closer approach toward the aesthetic of aeroplane and boat design. Prefabricated structural units in concrete were tried with some success in small office buildings and seemed to be more economical for such purposes than fireproofed steel.

One of the goals of low cost architecture, unification of the roof and the wall, seemed nearer at hand. Kenneth N. Lind's system of a single truss for this purpose was in production by Production Line Structures. Many designers, notably J. C. Campbell and W. K. Wong, were adapting the quonset hut with great success to houses, farm buildings, factories, banks and a motel. Manuel Flores' system "DC" of lowering the forms for concrete floors from the top of skeleton buildings was introduced into Texas from Mexico.



THE FULLY AIR-CONDITIONED Tishman building nearing completion on Park avenue, Manhattan, early in 1947. Slender outside vertical columns permitted continuous fenestration

Interest in cavity-wall construction was growing. It was believed to offer great strength, good insulation and an effective barrier to infiltration. Welding for steel frame buildings was becoming recognized as potentially superior to riveting. For bridges, a return to the tubular members, proved to be economical in the Ead's and Firth of Forth bridges of the 19th century, was proposed. Air cleaning by electronic precipitation increased; its advantages to health and its savings in time and money for laboratories and department stores were acknowledged.

**Heating.**—Heat pumps for house heating were in production by four companies. In radiant heating, methods of cold bending the pipes were improved, preformed tubing panels were announced, and a tube with integral fins became available. Research in solar housing was continued at the Massachusetts Institute of Technology and at Purdue university, Lafayette, Ind. More study was still required to evaluate all the factors contributing to the initial and long run economies expected of this system. Short-period storage of solar heat seemed to promise great economies; one method used a filler of Glaubers salts.

**Housing and Research.**—Throughout the world housing continued to be the primary architectural problem. Rising costs of labour and materials, together with shortages of materials delayed the programs envisaged by thoughtful people and governments. In the U.S., the building construction research board of the National Academy of Sciences had not gotten far; nor had the research program of the American Institute of Architects. The Committee of the Hygiene of Housing of the American Public Health association was doing the best work in that country. Helmut Landsberg's work in microclimatology, published in 1947, indicated the values to be derived from intensive local studies. A hopeful sign was the developing acceptance of modular co-ordination by industry and the recognition by the producer's council of the need for co-ordinated research.

Two stumbling blocks to mass production and increased volume of building were lifted when the American Federation of Labor in the Chicago area signed an agreement to remove some of the jurisdictional barriers to new methods of construction, and in the New York area when an agreement stabilizing labour costs was signed, thus enabling estimates to be made on a firmer basis over a long period. There were other signs of increasing stability in building costs at the end of the year such as upset price contracts and voluntary lowering of prices on some items of house equipment.

Nearly three-quarters of the housing built in the U.S. during 1947 was found to be in the hands of large-scale operators, who by mass production methods could bring the cost of small houses closer to the incomes of those for whom they were intended. Even so, the average price of a small house, about $8,000, was still $1,000 more than could be afforded.

Brazilian buildings continued to be widely publicized in 1947. Architecture in South America seemed to employ the clichés of the international style, with particular attention to sun-control devices. Although many of the projects were still in the design stage it could be concluded that the bulk of the work lacked the humanity, intimacy and variety characteristic of the best work of the northern hemisphere. In housing it was reported that 1,000 units were being built according to Walter Neff's "Airform" method (blowing concrete over an inflated balloon), another instance of the wide interest in continuous wall and roof systems and in curved forms.

The enormous problem of reconstruction in the U.S.S.R. was proceeding under the close control of the state, and to non-Russian eyes the results seemed to lack originality and distinction. The Russian policy was to win public acceptance by employing familiar understandable symbolism. Because of shortages of transportation, local building materials were being extensively employed, with constant experimentation toward developing new techniques to make use of them.

The village of Fournah in Egypt, the work of Hassan Fathy Bey, illustrated that sensitive and elegant architectural expression was possible within a rigid economy and within a strong local tradition.

**Events.**—In 1947 the American Institute of Architects, for the first time, held seminars for the exchange of information on hospitals, schools and town planning. Princeton university was host to a conference of architects and planners, at which a very distinguished international group discussed the problems of the profession in an informal atmosphere. The discussions were to be published. The International Congress of Modern Architecture met, at Bridgewater in England (for the first time since 1937), and exchanged data on city planning on a world-wide basis.

**Planning.**—Large scale planning projects were under discussion during 1947 including the Cidade dos Motores in Brazil, La Rochelle-Pallice in France, and numerous projects in the U.S.S.R. and Great Britain. In the U.S. the replanning of large cities, such as Pittsburgh and Philadelphia, focused toward huge exhibitions, strategically installed in department stores, where they would receive more attention from the public than if they had been in the usual museum. Modern techniques of publicity, and striking installations were also effectively employed. Good progress was made in Los Angeles under the Regional Zoning act. A book, *Communitas,* by Paul and Percival Goodman, was received with unusual approval, since it contained a fresh and inspiring approach to the problems of city planning in terms of durable human values.

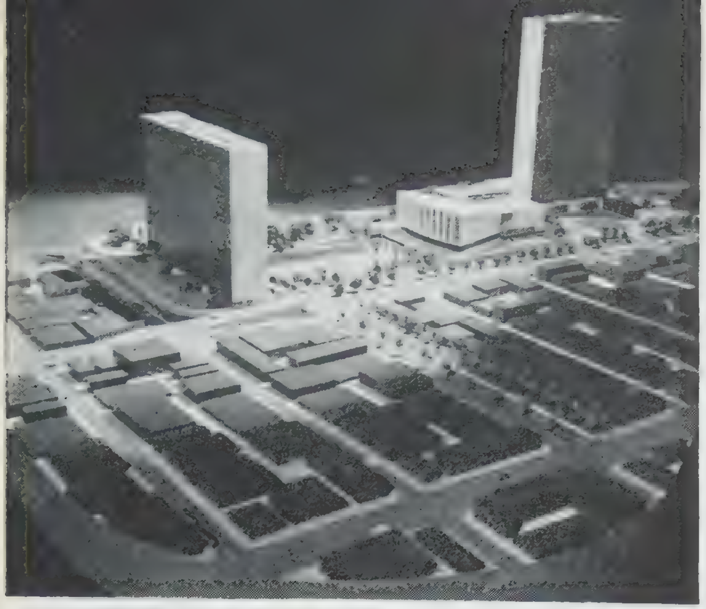
**Hospitals.**—The largest class of building, after housing, was the Veterans Hospital program for which about $1,000,000,000 would be spent. While still in the planning stage, the program became badly snarled in red tape but toward the end of the year was moving again. Local architects were employed, and the designs were correspondingly varied; they included conventional and progressive schemes.

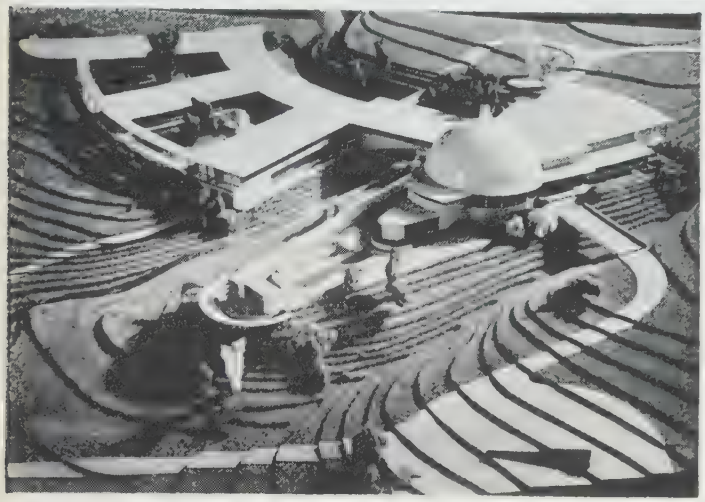
**Important Buildings.**—Palm Springs, Calif., saw the completion of three distinguished buildings—houses by Richard Neutra and Raymond Loewy and a tennis club by Paul Williams and A. Q. Jones, Jr. This luxury resort in the desert seemed to stimulate original, imaginative design, characterized by lightheartedness and exceptional freedom. Since resorts had, in the past, often been laboratories for new architectural growth as at Frascati, Italy, and Newport, R.I., this work might prove to be highly significant.

At Lincoln, Mass., Carl Koch built a house which carried the current romantic trend in domestic architecture to a new point, by the inclusion of a greenhouse in the main mass of the house with resulting dramatic spatial and textural contrasts. Two houses by Robert Paul Schweikher and Winston Elting belonged to another current of modern practice. Their work was strongly individual but was dominated by a note of austerity and a more rigidly formal organization of mass and space. Gordon Drake of Los Angeles was another architect whose personal handling of the modern idiom indicated that architecture was reaching a level of maturity which permitted sophisticated refinement.

At Cambridge, Mass., Alvar Aalto, the Finnish architect, was beginning the erection of a dormitory which promised to introduce new qualities into the field of collegiate architecture. The King County Central Blood bank, in Seattle, Wash., combined the almost irreconcilable qualities of inviting casualness and significant dignity. A feature of the planning was the circulation of the blood donors in, through, and out of the building. A model was photographed at each stage in the process, thus graphically illustrating the functional character of the plan. The new TVA dam at Fontana was considered by some to be an admirable solution to the problem of monumental design.

The first great architectural competition in many years was begun in 1947—the Jefferson National Expansion Memorial competition for an 80 ac. site in St. Louis, Mo. The first stage of the competition was judged in the fall and five winners, anonymous until judging of the second stage in 1948, were se-



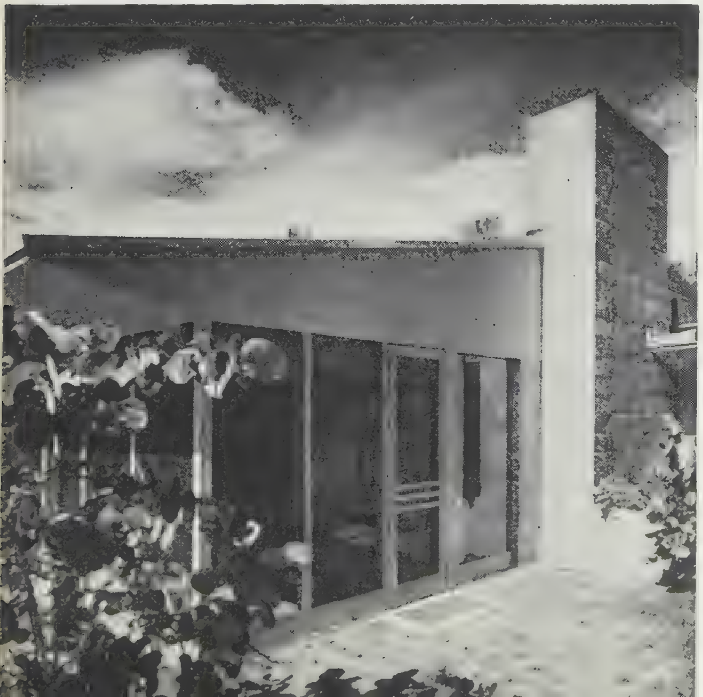


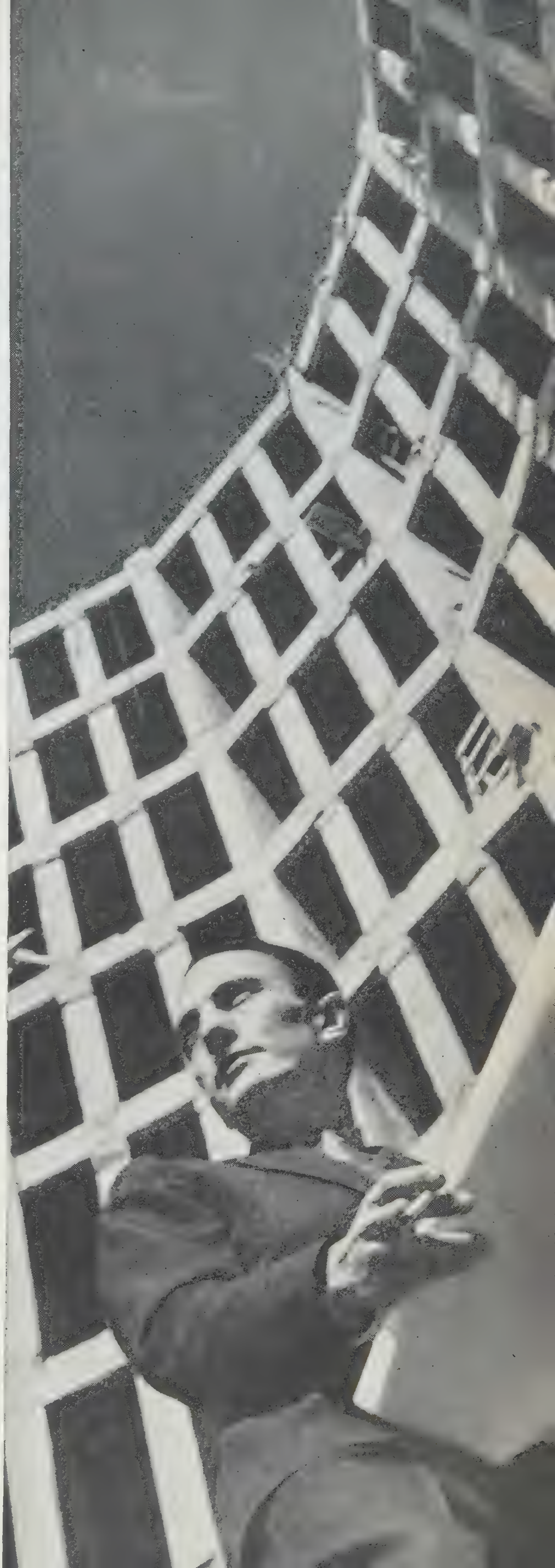
Top: U.N. PERMANENT HEADQUARTERS, a scale model of the proposed design for buildings to be erected in midtown Manhattan, as submitted to the general assembly by the U.N. Headquarters Planning office in 1947

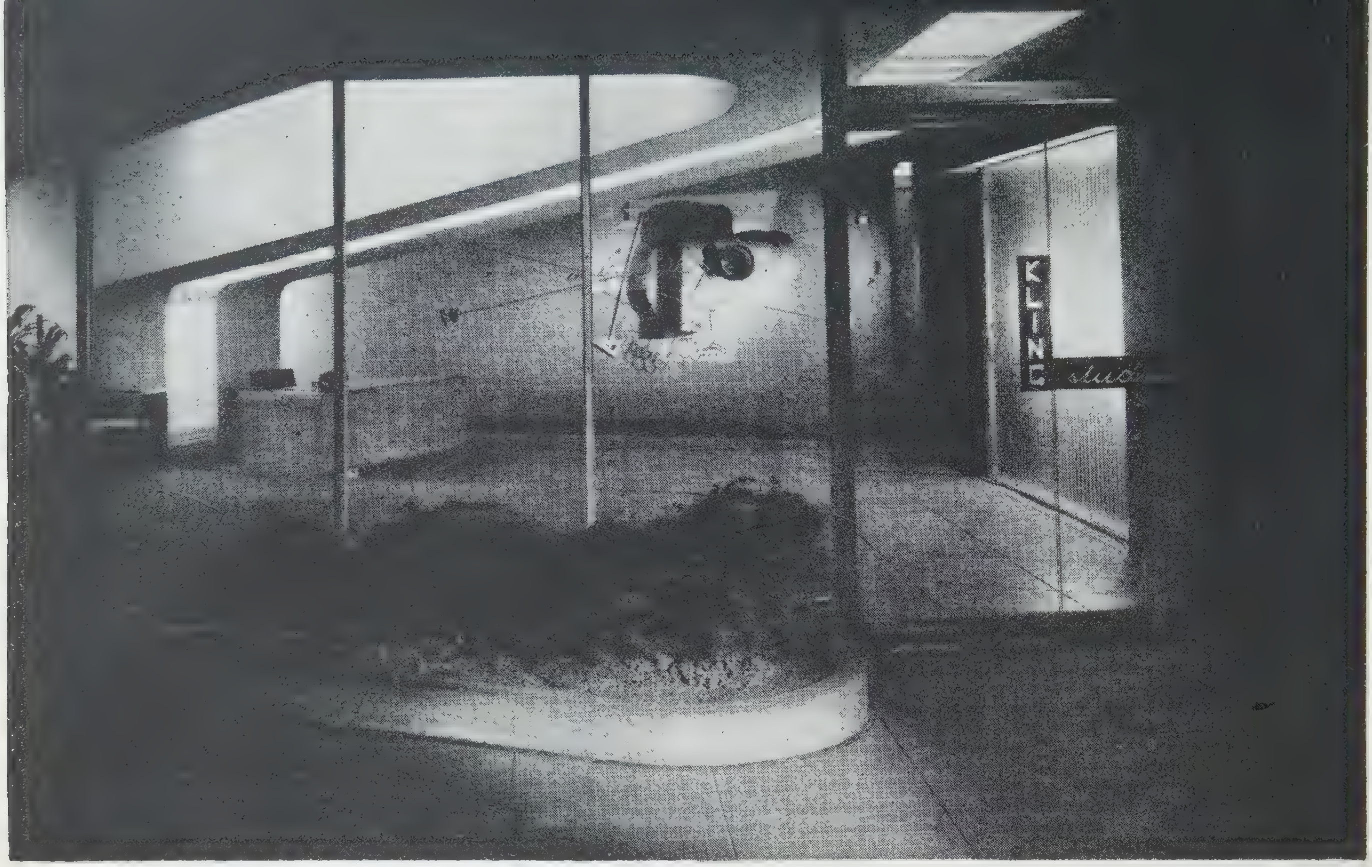
Above: ERIC MENDELSOHN'S design for the Cleveland Jewish centre, on which construction was begun in 1947. The circular temple was designed to seat 1,000 persons

Right: SEMICIRCULAR PLAZA HOTEL, under construction in Mexico City during 1947. The building was designed by Mario Pani (foreground) to contain outside rooms only

Below: PRIVATE HOME in Sarasota, Fla., designed by Ralph Twitchell and completed in 1947, featured wide, up-tilted overhangs for maximum shade and light







GLASS-WALLED ENTRANCE to the reception room of the Kling studios for commercial art. Designed by Henry P. Glass, the building was completed in Chicago in 1947

lected. The prizes, $10,000 each, were in proportion to the significance of the problem, which was to find suitable expression for monumental and symbolic ideas.

The outstanding architectural event of 1947, both for the wide interest taken in it and its significance in world events, was the design for the United Nations headquarters building in New York. The ten architects, pressed for time, decided to concentrate on a workshop for peace, intending to raise the quality of the final solution by further study after a satisfactory basic scheme had been approved. (C. L. V. M.)

**Great Britain and Europe.**—The development of European architecture was handicapped by shortages of labour and materials. Shortages were reflected in a concentration on those building techniques which made best use of the materials available and on labour-saving methods for the fabrication and assembly of buildings.

The technique of prestressing concrete, although not a new one, received much wider recognition. In France, where its advantages had been exploited for some time, there were numerous constructional works in progress that employed its principles. In Britain, owing to the shortage of mild steel, the technique had been applied only in the production of railway sleepers (ties). Its implications were undoubtedly of importance to architecture, although they still awaited the opportunity (and the architect) for their realization.

An outstanding steel building of 1947 was the aircraft assembly hall at Filton, near Bristol, built to house the Brabazon Mark I. Its designers were Eric Ross, David du R. Aberdeen, F. and P. N. Taylor and Brian H. Colquhoun and Partners. Covering an area of 7½ ac., with roof trusses spanning 331 ft. clear, its scale and simplicity had a magnificence seldom achieved even in less utilitarian structures.

In Denmark the new central building of Aarhus university (built just before World War II, and partially bombed) was completed by its original architect, C. F. Mueller. It was in direct line with Denmark's tradition of good brick building.

The eighth (first post-war) triennial exhibition of architecture was held in Milan during the months of June to October. A central feature was the plan for an experimental garden city at San Siro by a group of Italian architect-planners. The theme of the exhibition was "A home for everyone," and exhibits in the form of specimen furnished rooms and reconstruction projects came from Austria, Belgium, Czechoslovakia, Sweden and Switzerland. These exhibits, with their emphasis on mass-production and utility, were in sharp contrast with those of the earlier triennials where luxury had been the keynote. The exhibition clearly showed Europe's urgent preoccupation with emergency housing and house equipment. (*See* also BUILDING AND CONSTRUCTION INDUSTRY; HOUSING; TOWN AND REGIONAL PLANNING.) (I. R. M. M.)

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## Archives, National.

Established by congress in 1934, the National Archives preserves the valuable noncurrent records of the United States government and makes them available to the government and the people.

By the close of 1947 there were more than 833,000 cu.ft. of such records in the custody of the archivist. Ranging in date from the Revolutionary War to 1947, they came from almost every federal agency. Notable among records received in 1947 were several bodies of older records, including letterbooks, 1789–1902, and journals, 1879–1940, of the postmaster general; the records of the United States mint at Philadelphia, Pa., 1793–1899; and selected records from 52 customhouses in the United States and Alaska. Large quantities of records were also received from certain World War II agencies.

Recording as they do the growth of democracy in the United States, a number of documents from the National Archives were installed on the Freedom Train, which began a year-long tour to carry the story of their heritage to the people in more than 300 communities throughout the land. Among the documents selected were the Treaty of Paris of 1783, the Bill of

Rights, the Emancipation Proclamation and the World War II surrender papers.

To facilitate the use of records in the archivist's custody, a comprehensive guide to them was prepared and sent to press. *The National Archives—What It Is and What It Does* and *A Brief Guide to the Museum Collections in the Franklin D. Roosevelt Library* were among the year's publications.

Current government regulations that have general applicability and legal effect and descriptions of the organization and procedures of federal agencies are published by the National Archives in the *Federal Register.* The archivist of the U.S. is also responsible for the Franklin D. Roosevelt library at Hyde Park, N.Y. The papers of President Roosevelt that were in the White House at the time of his death are the property of the library by virtue of a court ruling. (S. J. Bu.)

## Areas and Populations of the Countries of the World.

The political entities of the world are listed here with their areas, populations and number of persons per square mile. The latest census or official estimates are given for each country. Areas in square miles, including inland water areas, are in accordance with the boundaries for the year of the population figure. Some of the later boundary adjustments had not been recognized at the end of 1947 by the U.S. government. The subtotals for colonial groupings within continents do not carry density figures. Where two figures are given for a country, the most recent is used in the continental and world totals. This table provides a fundamental basis for country comparisons.

*Areas and Populations of the Countries of the World*

(For statistical details and dates see separate country and empire articles)

| Name of continent and state | Area (In sq.mi.) | Population (In thousands) | Persons per sq.mi. |
|---|---|---|---|
| World total | 57,566,335 | 2,247,361 | 42.8* |
| AFRICA | 11,610,615 | 169,777 | 14.6 |
| Belgian colony and trusteeship | 925,000 | 14,088 | |
| †British colonies, dependencies, protectorates and trusteeships | 3,917,896 | 58,978 | |
| Egypt | 383,000 | 19,090 | 49.8 |
| Ethiopia | 350,000 | 7,000 | 20.0 |
| French colonies, trusteeships, protectorates, department and metropolitan area | 4,271,490 | 46,000 | |
| Liberia | 43,000 | 2,000 | 46.5 |
| Portuguese colonies | 794,959 | 9,416 | |
| South-West Africa (mandate of Union of South Africa) | 317,725 | 321 | 1.0 |
| Spanish colonies and protectorate | 134,763 | 1,392 | |
| Tangier, International Zone of | 232 | 100 | 431.0 |
| Union of South Africa | 472,550 | 11,392 | 24.1 |
| ANTARCTICA | 5,000,000 | Uninhabited | |
| ASIA (exclusive of U.S.S.R.) | 11,056,834 | 1,185,126 | 107.2 |
| Afghanistan | 270,000 | 12,000 | 44.4 |
| Arabian peninsula | 927,000 | 7,756 | 8.4 |
| Bhutan | 18,000 | 250 | 13.9 |
| British colonies, dependencies, protectorates, mandate, protected state and independent state under British protection | 284,554 | 17,224 | 60.5 |
| Burma | 261,749 | 16,824 | 64.3 |
| China (35 provinces, including Formosa, Kwantung and South Manchurian railway, Manchuria and Tibet) | 4,346,956 | 458,900 | 105.6 |
| French India | 197 | 323 | 1,639.6 |
| India (before Aug. 15, 1947) | 1,581,410 | 388,998 | 246.0 |
| India, Dominion of | 1,221,000 | 320,000 | 246.0 |
| Indo-China | 285,794 | 23,030 | 80.6 |
| Iran | 634,413 | 15,550 | 24.5 |
| Iraq | 116,600 | 4,803 | 41.2 |
| Japan (1947) | 146,690 | 78,221 | 533.2 |
| Korea | 85,225 | 24,326 | 285.4 |
| Lebanon | 3,470 | 1,200 | 345.8 |
| Nepal | 54,000 | 5,574 | 103.2 |
| Netherlands Indies | 735,000 | 72,000 | 98.0 |
| Outer Mongolia | 580,158 | 900 | 1.6 |
| Pakistan, Dominion of | 361,000 | 70,000 | 193.9 |
| Philippines, Republic of the | 115,000 | 16,971 | 147.6 |
| Portuguese colonies | 8,876 | 1,463 | |
| Siam | 198,247 | 15,718 | 79.3 |
| Syria | 72,560 | 2,860 | 39.4 |
| Trans-Jordan | 34,750 | 371 | 10.7 |
| Turkey | 296,185 | 18,862 | 63.7 |
| AUSTRALIA and OCEANIA | 3,304,637 | 11,693 | 3.5 |
| Australia | 2,974,581 | 7,581 | 2.5 |
| Australian dependency, territory and trusteeships | 183,561 | 1,016 | |
| British colonies, dependencies, condominium, protectorate and protected state | 24,683 | 472 | |
| French colonies | 9,199 | 111 | |
| New Zealand | 103,416 | 1,793 | 17.3 |
| New Zealand dependencies and trusteeship | 1,652 | 92 | |
| United States possessions, territory and trusteeship | 7,545 | 628 | |
| ‡EUROPE (exclusive of U.S.S.R.) | 1,907,902 | 380,322 | 199.3 |
| Albania | 10,629 | 1,120 | 105.4 |
| Andorra | 174 | 6 | 34.5 |
| Austria | 32,000 | 6,650 | 207.8 |
| Belgium | 11,774 | 8,389 | 712.5 |
| British colonies and dependencies | 124 | 305 | |
| Bulgaria | 42,796 | 7,022 | 164.1 |
| Czechoslovakia (1947) | 49,353 | 12,242 | 248.0 |
| Denmark (excl. Greenland, incl. Faeroe Islands) | 17,109 | 4,071 | 237.9 |
| Eire | 26,602 | 2,953 | 111.0 |
| Estonia | 18,357 | 1,122 | 61.1 |
| Finland (including Aland Islands) | 130,159 | 4,000 | 30.7 |
| France | 212,737 | 40,518 | 190.5 |
| Germany (1937 area, 1939 population) | 181,742 | 69,317 | 381.4 |
| Germany (1946) | 143,245 | 65,911 | 460.1 |
| Greece (including Aegean Islands) | 51,182 | 7,461 | 145.8 |
| Hungary | 35,911 | 9,317 | 259.4 |
| Iceland | 39,768 | 126 | 3.2 |
| Italy (1946) | 119.733 | 45,646 | 381.2 |
| Latvia | 25,395 | 1,995 | 78.6 |
| Liechtenstein | 61 | 11 | 180.3 |
| Lithuania | 22,958 | 2,879 | 125.4 |
| Luxembourg | 999 | 282 | 282.3 |
| Monaco | 0.59 | 19 | 32,613.6 |
| Netherlands | 13,440 | 9,636 | 717.0 |
| Norway (including Spitzbergen) | 148,849 | 3,124 | 21.0 |
| Poland (pre-World War II) | 149,922 | 35,339 | 235.7 |
| Poland (1946) | 119,734 | 23,911 | 199.7 |
| Portugal (incl. Azores and Madeira Islands) | 35,413 | 8,233 | 232.5 |
| Rumania | 91,671 | 16,472 | 179.6 |
| San Marino | 38 | 15 | 394.7 |
| Spain (including Canary Islands) | 194,945 | 27,246 | 139.8 |
| Sweden | 173,390 | 6,764 | 39.0 |
| Switzerland | 15,940 | 4,450 | 279.2 |
| Trieste, Free Territory of | 258 | 341 | 1,321.7 |
| United Kingdom | 93,667 | 48,367 | 516.4 |
| Vatican City | 0.5 | 1 | 2,000.0 |
| Yugoslavia (after Sept. 15, 1947) | 96,200 | 15,713 | 163.3 |
| U.S.S.R. (1939) | 8,173,557 | 170,467 | 20.9 |
| U.S.S.R. (1947 area, 1945 pop. est.) | 8,443,710 | 192,900 | 22.8 |
| NORTH AMERICA | 9,387,343 | 204,783 | 21.8 |
| British colonies and dependencies | 174,175 | 2,881 | |
| Canada | 3,694,863 | 12,582 | 3.4 |
| Costa Rica | 19,238 | 772 | 40.1 |
| Cuba | 44,217 | 4,779 | 108.1 |
| Danish colony (Greenland, including ice cap) | 839,782 | 21 | 0.03 |
| Dominican Republic | 19,129 | 2,059 | 107.6 |
| El Salvador | 13,176 | 1,997 | 151.6 |
| French colony and departments | 1,206 | 584 | |
| Guatemala | 45,452 | 3,547 | 78.0 |
| Haiti | 10,748 | 2,719 | 253.0 |
| Honduras | 59,160 | 1,201 | 20.3 |
| Mexico | 767,168 | 22,753 | 29.6 |
| Netherlands colony (Curaçao) | 403 | 128 | 317.6 |
| Nicaragua | 57,143 | 1,095 | 19.2 |
| Panama (excluding Canal Zone) | 28,575 | 623 | 21.8 |
| United States | 3,022,387 | 144,708 | 47.9 |
| United States possessions | 590,521 | 2,334 | |
| SOUTH AMERICA | 6,855,294 | 102,760 | 15.0 |
| Argentina | 1,079,965 | 16,109 | 14.9 |
| Bolivia | 416,040 | 3,596 | 8.6 |
| Brazil | 3,286,170 | 48,000 | 14.6 |
| British colonies and dependencies | 97,161 | 379 | |
| Chile | 286,323 | 5,390 | 18.8 |
| Colombia | 439,714 | 10,343 | 23.5 |
| Ecuador | 104,510 | 3,340 | 32.0 |
| French department and territory (French Guiana and Inini) | 34,740 | 37 | 1.1 |
| Netherlands colony (Surinam) | 54,291 | 178 | 3.3 |
| Paraguay | 149,807 | 1,200 | 8.0 |
| Peru | 482,258 | 7,653 | 15.9 |
| Uruguay | 72,172 | 2,235 | 31.0 |
| Venezuela | 352,143 | 4,300 | 12.2 |

*In computing the world density the area of Antarctica is omitted.

†Includes as military trustee areas Libya, Eritrea and Italian Somaliland.

‡Areas and populations of Baltic republics included in 1947 U.S.S.R. totals.

## Argentina.

A federal republic in southeastern South America, the second largest on the continent. Area: 1,079,965 sq.mi.; pop. (1947 census): 8,243,659 men and 7,864,914 women, a total of 16,108,573. The population is estimated to be 97% of European (mostly Spanish and Italian) descent; the total of foreign-born population in 1940 was 2,355,900, the largest proportion of foreign-born population of any new world state. Urban population is approximately 75%. Population density at the beginning of 1944 was 12.96 per square mile. The capital and chief port is Buenos Aires (pop., 1947 census, preliminary figures, 3,150,000). Other important cities (with latest official pop. estimates) are Rosario (521,210), Avellaneda, a Buenos Aires suburb (399,021), Córdoba (339,375), La Plata (256,378), Tucumán (169,556), Santa Fé (149,926), Bahía Blanca (121,055), Mendoza (100,429) and Lomas de Zamora (100,000). Under the constitution of 1853 (the oldest in any Latin American state) Argentina includes 14 provinces and 9 territories. The government is headed by a president chosen by

JUAN PERÓN, president of Argentina (right) and Eurico Dutra, president of Brazil, are shown on May 21, 1947, as they opened an international bridge uniting their countries

an electoral college for a six-year term. The bicameral congress includes a senate of 30 and a chamber of deputies of 158 members. President in 1947: Gen. Juan Domingo Perón.

**History.**—Foreign Minister Juan Atilio Bramuglia on Jan. 13 denied a statement by U.S. Secy. of State James F. Byrnes that the Argentine government was not ridding the country of nazis; he called on U.S. Ambassador George Messersmith for evidence that action was being taken. A government decree on Jan. 24 authorized the buying of all businesses of former axis nationals, involving about 60 firms. Messersmith in a statement at Rio de Janeiro, Brazil, on Jan. 31, while en route to Buenos Aires, said that the Argentine government had gone a long way toward eliminating former nazis. The comprehensive five-year plan for Argentine economic development, presented to congress by President Perón in Nov. 1946, continued to attract much attention in 1947. Perón on Jan. 23 announced the retention of the Worldwide Development company of New York city to aid in effecting the plan. In an important anniversary address at the Colón Opera house on Feb. 24, he attacked communism and outlined ten essential rights for workers, including the right to jobs, adequate pay and safe working conditions. A few minutes after the broadcast of the president's address, a bomb wrecked the progovernment station Radio Libertad. President Perón on March 8 again attacked Argentine communists as well as the American Federation of Labor, a commission of which had severely criticized the Argentine government, and called for a boycott of the newspapers opposed to his regime. The following day members of the A.F. of L. delegation surveying Argentine labour conditions accused the government of using tricks, bribery, force and favouritism to make the Argentine General Labour confederation its political tool; the A.F. of L. International Labour committee rejected a proposal for collaboration with the Argentine confederation. The chamber of deputies on March 28 passed the basic features of the government's five-year plan without debate. On April 1, *La Prensa,* one of the leading Buenos Aires papers, rejected demands made by the news vendors' and distributors' union and charged it with conspiracy in the government's campaign against the paper.

The ministry of marine on April 2 announced an Argentine claim, on the basis of an expedition then in the far south, to the Melchior archipelago in the antarctic region. President Perón on April 23 led in the festive welcome to the returning antarctic expedition. Argentina took its first census in 33 years in April and May; preliminary reports indicated about 250,000 commercial and 100,000 industrial establishments. The government announced on April 24 that all of its Central American diplomatic missions would be raised to embassy rank. President Perón opened a congressional session on May 1 and announced a program of army modernization. Congress voted Perón drastic powers to reduce the high cost of living and the senate sustained the previous impeachment of three opposition members of the supreme court and the attorney general, thus removing the last remaining judicial obstacles to the Perón regime and leaving the president free to appoint others who would presumably not attempt to maintain the previous independence of the judiciary. Perón and Pres. Eurico Gaspar Dutra of Brazil met at Uruguaiana, Brazil, on May 21 to dedicate a new international bridge. On the same day 8 more former nazi agents were deported; 69 other cases remained under study at the same time. Several persons were wounded by gunfire on May 25 in Buenos Aires clashes between nationalists and communists during Liberty day celebrations. Gen. Filomeno J. Velazco resigned on June 5 as federal and Buenos Aires police chief and was succeeded by Gen. Arturo Bertollo, who had earlier been decorated by the United States for service on the Inter-American Defense board. Perón on the same day spoke on a nationwide network in celebrations as his wife, Sra. Eva Duarte de Perón, left for Spain as the first stop on a widely publicized European tour; during Perón's broadcast he was interrupted by a mysterious radio voice calling "Death to Perón." Señora Perón on June 9 received a high Spanish decoration from Gen. Francisco Franco.

The Argentine government on June 11 denied rumoured plans to attack Brazil. On June 12 the government seized factory stocks of clothing and shoes and began application of a retail-price-fixing policy. Perón on June 18 conferred a high Argentine decoration on Ambassador Messersmith; other Argentine decorations were on July 2 conferred on the presidents of Peru, Ecuador, Haiti, Panamá and the Dominican Republic. Communists demonstrated on June 27 outside the Argentine embassy in Rome protesting Señora Perón's visit there; she was at the same time received by Pope Pius XII.

A bomb thrown in a socialist meeting in Buenos Aires on June 29 killed 1 and injured 30 persons. Police on July 1 confiscated copies of the socialist paper *La Vanguardia* for editorially criticizing the Perón regime. The following day Rodolfo Katz, an opposition editor, was kidnapped and beaten in Buenos Aires. Gunmen at La Plata failed on July 4 in an effort to kill Cipriano Reyes, leader of the anti-Perón labour bloc in the chamber of deputies. President Perón on July 6 broadcast an important speech pledging co-operation with all peace-loving nations and economic aid to wartorn countries; despite army modernization, he said, Argentina would not enter an armaments race. Foreign Minister Juan Atilio Bramuglia on June 7 addressed the Vatican and the other American foreign offices asking co-operation for peace and reconstruction. A nationalist Buenos Aires editor fled to Uruguay July 10. Señora Perón on July 23 was made a knight of the French Legion of Honour. On Aug. 5 the Swiss federal council expressed regret to Señora Perón for a stone- and tomato-throwing incident at Berne. The senate on July 25 confirmed four new supreme court appointments. A 7-day strike of 35,000 bakery workers at Buenos Aires ended Aug. 7. The Vatican on Aug. 8 denied any political significance attached to giving Señora Perón a decoration for relief work. The government on Aug. 20 suspended a Peasants' party weekly paper for attacking the United States, Señora Perón and the government. Señora Perón received a huge welcome on her return from Europe on Aug. 23. Buenos Aires police on Aug. 28 closed *La Vanguardia* for minor safety violations, but the paper went on sale on Sept. 16 in an underground edition. Two opposition weeklies were suspended on Sept. 1 and 2 because printing plants, after police warnings, refused to print them. The *New York Herald Tribune* reported on Sept. 18 that Argentina was charging needy European countries $5.90 per bushel (payable in dollars) for wheat which it bought from Argentine farmers for $1.35. Buenos Aires police on Sept. 20 seized 11 in a suspected bombing plot against Señora Perón. The president signed a woman-suffrage law on Sept. 23.

Buenos Aires police on Sept. 26 reported the closing of the underground *La Vanguardia*. More than 150,000 textile workers went out on strike on Oct. 2. Argentine Ambassador Oscar Ivanissevich announced at Washington, D.C., on Oct. 8 that his government had set up a "Marshall plan" to aid its South American neighbours. The Argentine press office simultaneously criticized the United States in its announcement that Argentina had been forced to burn more than 2,000,000,000 pesos of crops because of lack of shipping amounting to an "economic blockade." The government on Nov. 8 authorized a 20,000,000-peso fund for fighting infectious and contagious diseases. About 140,000 metal workers struck for higher wages on Nov. 13. The national economic council stated at Buenos Aires Nov. 15 that Argentina would reduce cereal prices to the world level if it could buy all its U.S. needs at factory prices. The government on Dec. 1 banned the Italian antifascist film *Open City*. Diego Luis Molinari, head of the Argentine delegation to the U.N. Trade conference, stated at Havana, Cuba, on Dec. 16 that his country was prepared to offer $5,000,000,000 in loans to "deserving" nations; the plan would involve credits repayable in up to 50 years.

**Education and Religion.**—Many educators were reported on Jan. 24 to be fleeing to Mexico because of the government's interference with university freedom. The government took steps to complete its intervention in the nation's universities beginning Jan. 1, 1948. School enrolment in 1946 was about 2,000,000. The literacy rate was estimated at 85%.

**Finance.**—The monetary unit is the peso, valued on Nov. 6, 1947, at from 20.24 cents to 26.81 cents, U.S. currency, depending on the type of exchange. The 1948 budget, as proposed originally early in 1947, involved ordinary budgetary expenditures of 3,092,000,000 pesos and extraordinary expenditures of 1,146,000,000 pesos. When the deputies finally voted it on Sept. 29 it had been increased, including sums for autonomous agencies, to the record figure of 6,400,000,000 pesos. Central bank holdings on April 30 were $1,472,000,000 as against $1,729,000,000 on Dec. 31, 1946. President Perón stated on Aug. 20 that the per capita debt was only 22 pesos and the gold reserve totalled 1,000 tons. A growing shortage of dollar exchange developed in midyear; the government on July 15 suspended credit permits for import of luxury goods in order to conserve foreign exchange. The government in May and June began a campaign against inflation; an antispeculation law was passed May 3 and the central bank on Aug. 9 restricted credit on speculative ventures as an inflationary curb. Early in June congress created a mixed capital institute for securities investment, gave it a capital of 100,000,000 pesos and authorized it to engage in all kinds of transactions in bonds and shares to "regulate, order, and strengthen the securities market." On June 13 congress approved a bill for creation of a mixed Argentine reinsurance institute to promote Argentine over foreign insurance companies. The stock market index reached a record high of 382 in April as against 100 in 1943. All bans on foreign investments were lifted July 6. The government on July 25 prohibited further use of foreign exchange for imports of newsprint, although this was interpreted to have political as much as economic motivation. It was reported on Aug. 10 that the exchange value of the peso had dropped more than 10% in relation to the dollar. The central bank on Aug. 21 halted all new imports pending a study of British suspension of sterling conversion; Argentina resumed trade in sterling on Sept. 3. The government created a national economic council on Sept. 3 to co-ordinate economic planning, partially in connection with the five-year plan. The government on Oct. 10 signed a pact giving Rumania a $25,000,000 credit, and 3 days later Italy was granted

**SEÑORA PERÓN**, wife of the Argentine president, is shown leaving St. Peter's cathedral in Rome, Italy, with a Vatican dignitary during her European visit in the summer of 1947. Señora Perón was granted a papal audience on June 27

a 700,000,000-peso credit for purchase of food and raw materials.

**Trade and Communications.**—Trade in 1947 was characterized by an increasing degree of governmental control, especially through the I.A.P.I. (Instituto Autónomo de Producción y Industrialización), and a tendency for lowered production to have a delayed effect on trade. Quebracho extract exports in the first 4 months of 1947 were 71,691 metric tons (same period in 1946: 90,414 tons). Wool exports from Oct. 1, 1946, to March 31, 1947, were 72,008 metric tons (same period in 1945–46: 125,671 tons); of the 1946–47 exports, the United States took 37,256 tons. Cotton exports in the first 5 months of 1947 were 5,864 metric tons (same period in 1946: 18,174 tons); the chief markets were the United Kingdom 2,094 metric tons (same period in 1946: 14,592 tons); the Netherlands 1,912 tons (1946: none); Bolivia 1,021 tons (1946: 541 tons). Total foreign trade in Sept. 1947 reached a record figure of 1,029,000,000 pesos. Hide and skin exports in 1946 showed general increases over those for 1945; they were partially itemized as follows (with 1945 figures in parentheses): cattle 6,890,249 (4,443,257); horse 433,698 (344,906); goat 3,114 bales of 815 lb. (2,178 bales); kid 550 bales (212 bales); sheep 53,607 bales of 880 lb. (27,057 bales); pickled hog 231 short tons (795 short tons); other pickled skins 4,738 short tons (6,638 tons); tanned hides 14,959 short tons (15,284 tons). Imports of petroleum and products in 1946 were 22,547,100 bbl. (1945: 3,658,168 bbl.), 7,232,000 bbl. of crude oil and 14,451.800 bbl. of residual fuel oil; the chief sources were the Netherlands West Indies (11,132,900 bbl.), Venezuela (8,638,400 bbl.) and the United States (1,018,800 bbl.). Imports of rubber in the first 3 months of 1947 were 8,007 long tons.

The year was an active one as far as trade agreements of various kinds were concerned. Argentina and Chile concluded an important one on Dec. 13, 1946, which did not take effect until 1947. It provided for an Argentine investment of $80,430,000 in industrialization projects in Chile, especially those affecting copper, nitrates, iron and steel, coal and wood and electric power; Chile guaranteed the sale of the excess of such products, after supplying its own needs, to Argentina. A like sum of $80,430,000 was pledged as a loan for Chilean public works construction, chiefly railways and roads, of kinds which would promote Argentine-Chilean commercial exchange. The agreement also established a revolving credit of $26,800,000 to aid Chile in financing its unfavourable trade balance with Argentina. It further provided for elimination of tariffs between the two countries except on competitive items. Argentina later (March 8) negotiated a similar but smaller-scale pact with Bolivia. A second agreement with Chile, July 12, provided for Argentine purchase of Chilean nitrates and abandonment of Argentine manufacture of synthetic nitrate. An agreement was concluded in May to exchange 9,000 metric tons of linseed oil for Canadian newsprint. The Anglo-Argentine trade agreement (commonly called the Roca-Runciman agreement) expired at the end of 1946 after 14 years; it was extended indefinitely from Jan. 1, 1947. A commercial and financial agreement with France was signed at Paris on Aug. 23; by its terms Argentina set up a 600,000,000-peso rotating fund against which France could buy Argentine products for 3 years. A Venezuelan agreement for purchase of Argentine foodstuffs was signed late in 1947. The establishment early in 1947 of the policy of concentrating all exports of agricultural products in the government's Argentine Trade Promotion institute gave the government much more control over trade policies; it affected such exports as corn, wheat, meat, vegetable oils, birdseed, oats, barley, rye, sorghum, cattle hides, pigskins and sheepskins; profits were intended to help finance the five-year plan. The chamber of exporters reported on Sept. 26, however, that Argentina had been ousted from many foreign markets because the government had entered the export trade. The government on Sept. 3 resumed the licensing of some chemical, medical and industrial imports and on Sept. 18 it resumed the shipment of canned beef to Great Britain and relaxed some earlier curbs on Spanish, Belgian and French imports. Port congestion was a problem at Buenos Aires in the second quarter of the year and the port was tied up on Sept. 27 by a strike of 10,000 dock workers asking higher wages. The Argentine delegation to the U.N. Trade conference at Havana, Cuba, in December took a generally critical position toward U.S. proposals there.

Argentina continued in 1947 its policy of repatriating foreign capital invested in Argentine transportation. The government on Dec. 17, 1946, purchased 3 French-owned railways, totalling 2,648 mi., for 182,796,174 pesos. A development of consummate importance was the government's purchase on Feb. 12 of the extensive British-owned share of the Argentine railway network, plus associated companies, for £150,000,000. The price included £135,500,000 for 16,000 mi. of railway and £14,500,000 for related properties; the total represented only about one-third of the original investment, but there had been no return on the bulk of the capital for about 20 years. These properties were the largest block of foreign investment in Argentina. The payment was made largely with blocked sterling and was expected to wipe out the Argentine sterling balance in London. The government stated it would make no immediate changes in management. The government planned to increase the railway construction budget from 80,000,000 pesos to 110,000,000 pesos annually under the five-year plan.

**Agriculture.**—Estimates of production of various agricultural crops and products in 1946–47 (in metric tons) included: wheat 6,024,000; oats 684.500; rye 522,200; barley 1,171,400; linseed 1,034,300 (1945–46: 964,100); cotton fibre 67,800 (1945–46: 61,687); sugar cane 7,452,800 (down 7.3% from 1945–46); sugar 600,000; wine grapes 1,258,700 (up 14.5% from 1945–46, but just enough to supply domestic demands); sunflower seed 894,000; peanuts 115,600 (down 17% from 1945–46); potatoes 852,000 (down 30% from the preceding 5-year average); rice 160,500 (up slightly from 1945–46); oranges 257,500 (1945–46: 211,700); tangerines 83,000 (1945–46: 77,000); lemons 44,000 (1945–46: 35,200); grapefruit 6,100 (1945–46: 3,600). The government concluded an agreement with Italy on Feb. 21 for stimulation of agricultural immigration by which it hoped to obtain 5,000 farm workers monthly. On March 19 Argentina refused to join the United States, Canada and Australia in setting a $1.25–$1.80 price scale for exported wheat. The government early in the year undertook to acquire 2,317 sq.mi. of land in the main cropping zones for early subdivision; it also planned to impound water to irrigate an additional 618 sq.mi. in the Rio Negro valley. Seedlings for 500,000 mulberry trees were planted in 1947. President Peró on Oct. 11 launched a campaign against locust pests.

**Manufacturing and Mining.**—President Perón stated on Aug. 20 that industry had increased 500% from the time he took office, but *La Nación*, prominent Buenos Aires paper, reported Aug. 25 that production ha dropped 40% in the preceding few months, partly the result of higher wages and salaries which made absences possible. Perón on Aug. 23 outlined a program to penalize absences and output drops and at the same time stabilize prices and adjust wages to living costs. It was planned in 1947 to begin manufacture of railway tires and axles at Córdoba; realization of the five-year plan was reported to be somewhat slowed because of a shortage of freight cars in which to haul cement. Sulphuric acid production in 1946 was 66,840 metric tons. Production of yarn in 1946 included 61,619 metric tons of carded and 2,758 tons of combed; cotton yarn production in the first 3 months of 1947 was 14,071 tons. Hosiery manufacture in 1946 totalled 76,709,340 pairs. The national corporation for production of rubber began operations in 1947; it hoped by 1951 to produce from 15% to 25% of Argentina's rubber needs, chiefly from guayule. Argentina concluded an important agreement with Uruguay on Dec. 30, 1946 for a large-scale hydroelectric project on the Uruguay river at the Salto Grande falls designed to assure low-cost electricity and also water fo irrigation for both countries; a joint technical commission was to supervise the project. The city of Rosario announced plans to expropriate one of Argentina's largest power plants when its concession expired in 1952 On Nov. 3 the government bought the British-owned Smithfield Argentine Meat company's packing plant at Zarate for 25,000,000 pesos.

Production of crude oil in 1946 was 20,924,246 bbl. (1945: 23,816,34 bbl.). Crude-oil runs to stills in 1946 totalled 27,673,000 bbl., of which 20,808,000 bbl. were Argentine oil and the rest foreign. Production of petroleum by-products (in barrels) in 1946 included: aviation gasoline 101,000; motor fuel 8,366,000; kerosene 3,345,000; distillates 2,511,000; residual fuel oil 9,673,000; others 3,055,000. On Feb. 2 uranium was reported discovered in Mendoza and San Luis provinces. (*See* also FASCISM.)

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(R. H. FN.)

**Arizona.** The "Grand Canyon state" lies in the southwestern part of the United States; the Colorado river forms most of the western boundary. Area, 113,909 sq.mi. The provisional census of July 1947 estimated the population at 637,000. The 1940 census gave rural population 65.2%; urban 34.8%; native-born whites 78.1%; foreign-born whites (including Mexicans) 7.3%; Negroes 2.9%; other races (mostly Indians) 11.5%. The capital is Phoenix with an estimated population (1947) of 90,000 (metropolitan area 200,000); chief cities with their estimated population: Tucson 50,000 (metropolitan area 100,000); Yuma 11,500; Mesa 11,000; Douglas 10,000; Flagstaff 9,000; Prescott 9,000; Winslow 8,000; Glendale 7,500; Globe 7,000.

**History.**—The state officials (1947) were: chief justice, Rawghlie C. Stanford; governor, Sidney P. Osborn; secretary of state, Dan E. Garvey; treasurer, William T. Brooks; attorney general, John L. Sullivan and Evo de Conceni (appointed Dec. 13); superintendent of public instruction, Nolan D. Pulliam and L. D. Klemmedson. The regular session of the 18th legislature met in Jan. 1947 and two special sessions in June and July. Instead of two congressmen-at-large, Arizona was divided into two congressional districts with definite provision for a third when population required. Attempted legislation to control ground water for irrigation was defeated by various interested groups to the great concern of those fearing the constantly lowering water level. On Dec. 2, 1947, Governor Osborn announced three special sessions for early in 1948, the second to consider a ground water code, since previous attempts during the year never emerged from committees. The governor's message of Jan. 13, 1947, charged the power interests with responsibility for power deficiencies, and one special session (call of Dec. 2, 1947) was to deal with possible better protection of consumers' interests. Social security was another controversial issue, there being an appropriation of $10,000 in the regular session, increased to $40,000 in one special session, for an investigation of local and state administration. The special session (called Dec. 1947) was to secure more satisfactory legislation on the issue.

**Education.**—The net enrolment and the number of teachers in the public schools for 1946–47 stood respectively as follows: elementary schools 102,192 and 2,739; high schools 26,961 and 936. There were about 50 private and parochial schools.

**Social Insurance and Assistance, Public Welfare and Related Programs.**—In Sept. 1947 the state department of social security and welfare aided 19,382 persons, and the state appropriation was $5,650,193. Other appropriations for 1947 were: industrial school $174,300; juvenile girl offenders $97,630; prison $276,315; state hospital for insane $1,086,900; pioneer home $103,150. An appropriation was made to organize a colony for defective children.

**Communications.**—Arizona highways in 1947 were as follows: state highway mileage 3,765; county roads 15,543; forest, Indian reservation and military roads 9,795. Railroad mileage was 2,651; number of air bases for interstate travel 5; number of telephones 108,511.

**Banking and Finance.**—National banks in Oct. 1947 had deposits of $283,478,162; loans and discounts $113,329,172; U.S. government securities $105,936,274. State banks had deposits of $107,959,748; loans and discounts $24,733,060; U.S. government securities $59,961,463.

**Agriculture.**—The year 1947 was the driest in 50 years, the irrigation reservoirs being empty and the ground water level lowered.

Table I.—*Leading Agricultural Products of Arizona, 1947 and 1946*

| Crop | 1947 (est.) | 1946 |
|---|---|---|
| Wheat, bu. | 588,000 | 567,000 |
| Oats, bu. | 392,000 | 336,000 |
| Sorghum grain, bu. | 1,750,000 | 1,872,000 |
| Corn, bu. | 352,000 | 352,000 |
| Cotton lint, bales | 210,000 | 158,000 |
| Grapefruit, boxes* | 4,100,000 | 4,100,000 |
| Oranges, boxes* | 1,210,000 | 1,200,000 |
| Horses and colts, head† | 71,000 | 72,000 |
| Cattle and calves, head† | 921,000 | 949,000 |
| Sheep and lambs, head† | 462,000 | 515,000 |

*Year ended July 31, 1947.
†Number on farms and ranches, Jan. 1, 1947.

**Manufacturing.**—Less than 9% of the population of Arizona were engaged in manufacturing during 1947, there being fewer than 400 establishments, these being mostly lumber mills and producers of food articles.

Table II.—*Mineral Production of Arizona, 1946*

| Products | Weight | Value |
|---|---|---|
| Copper, lb. | 578,446,000 | $93,708,252 |
| Gold, oz. | 79,024 | 2,765,840 |
| Silver, oz. | 3,268,765 | 2,641,162 |
| Zinc, lb. | 87,330,000 | 10,654,260 |
| Lead, lb. | 47,860,000 | 5,216,740 |

**Mineral Production.**—Arizona ranks first of the states in the production of copper, third in silver, and fifth in gold. It was estimated that the mineral production for 1947 would exceed all records. (H. A. H.)

## Arkansas.

Arkansas is an inland state in the south central United States, admitted to the union in 1836. Area 53,102 sq.mi., 377 of which are normally under water.

The population (1940) of 1,949,387 was an increase of 5.1% over that of 1930. The state lost 262,609 in population during World War II (U.S. census estimates) because of migration to other areas for war work. The population had recovered to 1,903,000 by July 1, 1947 (U.S. census estimates). Most returning people did not go back to farms, but stayed in towns and cities, finding jobs in new and expanded industries. The census of 1940 shows 53 towns and cities, 431,910 urban and 1,517,477 rural population. The Negro population, 506,550, was chiefly in the southeast half of state. Capital: Little Rock (pop. 1940, 88,039). Other cities with populations (1940 census): Fort Smith, 36,584; Hot Springs, 21,370; Pine Bluff, 21,290; North Little Rock, 21,137.

**History.**—The principal state officers during 1947 were Ben T. Laney, governor; Nathan Gordon, lieutenant governor; C. G. Hall, secretary of state; J. C. Humphry, auditor; J. V. Clayton, treasurer; Guy E. Williams, attorney general; C. A. Rankin, land commissioner.

The year 1947 was marked by a 21% increase in state tax revenues, reflecting increased per capita income, larger business volume and higher prices. Appropriations for public service were increased by the 1947 legislature. Provision was made for broader programs of resource protection and development, public schools, buildings and operating budgets for state educational and charitable institutions.

**Education.**—Total expenditures, state and local, for public schools in the school year 1946–47 were approximately $27,000,000. Estimated expenditures for 1947–48 were $30,000,000. Total attendance in the 1946–47 school year was (approximately) 325,500 of which 248,000 were white and 77,500 Negro. The per capita expenditure for current expenses was approximately $71.61. Teachers numbered 10,390 white and 2,612 Negro for a total of 13,002. The commissioner of education was Ralph B. Jones, beginning his eighth year Jan. 1, 1948.

**Social Insurance and Assistance, Public Welfare and Related Programs.**—The state in 1947 maintained 30 charitable and correctional institutions, including state penitentiary farms, state farm for women, girls' industrial school, boys' industrial school, Negro boys' industrial school, state hospital for nervous diseases, tuberculosis sanatoriums, school for the blind, school for the deaf, Confederate veterans' home and children's home and hospital. All these agencies received increased operating budgets for 1947 and 1948. The 1947 legislature appropriated approximately $7,000,000 per year of state funds for welfare grants and operating costs.

**Communications.**—Highways, local and state, totalled about 75,000 mi. in 1947. Construction contracts let for state highways in 1947 totalled $16,740,783. The paved and gravelled mileage on the state system at the end of the year was 9,269 mi.; unimproved 81 mi. Total highway revenues were about $23,500,000, a new high record. Aid to county roads and city streets from state sources was increased $3,000,000 per year. Railway mileage remained the same, about 5,000 mi. Plans for expanded airport facilities were perfected and were ready for construction in 1948. Flood control projects on the principal rivers were active during the year, with the largest funds in history available from federal sources.

**Banking and Finance.**—There were 221 state and national banks, with combined assets as of Dec. 31, 1946, of $829,000,000 (compared with $227,000,000 on Dec. 31, 1939). Deposits totalled $783,000,000.

The state treasurer reported a net bonded debt Dec. 31, 1947, of $123,279,650, a reduction of $5,415,158.54 in principal during the year. The treasury balance at the end of 1947, including trust and sinking funds, was $51,500,000.

**Agriculture.**—The total value of agricultural production for 1947 was estimated at $500,000,000 to $525,000,000. Production is widely diversified. The chief products are cotton, livestock, rice, corn, soybeans, peaches, chickens, berries, truck and dairy products. During the year the canning industry attracted two can factories to supply the canneries.

**Manufactures.**—The total manufacturing output for 1947 was estimated at $650,000,000. A three-year gain in new industries and important expansions, reported by the Arkansas Economic Council-State Chamber of Commerce, included 1,500 new plants, with a capital investment of $100,000,000, providing 30,000 jobs, with an annual payroll of $50,000,000. Lumber production for 1947 was estimated at 1,600,000,000 board feet. The value of the forest products industry was estimated at $159,000,000.

**Minerals.**—The value of mineral production for 1946 was $64,955,000 (severance tax figures). It included: barite, 288,963 short tons; bauxite, 1,199,003 long wet tons; cement, 284,865 barrels; chert, 17,990 short tons; raw clay, 263,812 short tons; coal, 1,365,147 short tons; dolomite, 48,709 short tons; gravel, 1,704,040 short tons; gypsum, 27,624 short tons; manganese and manganiferous ore, 2,384 short tons; natural gas marketed, 48,000,000,000 cu.ft.; natural gasoline, 1,098,353 bbl.; condensate, 39,337 bbl.; butane and propane, 826,317 bbl.; novaculite, 1,711,705 lbs.; petroleum, 28,367,496 bbl.; glass sand, 191,780 short tons; construction sand, 1,234,457 short tons; limestone dimension stone, 852 short tons; crushed sandstone, 656,112 short tons; novaculite for ballast, 77,352 short tons; tripoli, 830 short tons. (C. F. Bs.)

## Armies of the World.

In the second year after the end of World War II, more than 15,000,000 men remained mobilized in the armies of the world. Two factors contributed to the maintenance of land forces of extraordinary size in 1947. Tension between the Soviet Union and the United States accounted for the maintenance of large

"GUINEA PIG" testing a gas mask for U.S. army Task Force "Furnace" near Yuma, Ariz., in 1947. Twelve such volunteers wore various types of masks at their regular duties for an hour each day in 120° heat and then reported on their feasibility armies by Turkey, Great Britain and the United States that otherwise would have been greatly reduced in size. Internal unrest and colonial troubles, or the threat thereof, were responsible for the size of the armies of China, Spain, India, Pakistan, the Netherlands and France.

With the armies of Germany dispersed, the land power of the Soviet Union assumed undisputed supremacy on the landmass of Europe-Asia. The number of men under arms in China exceeded that of Russia, but the Chinese forces were split by the civil war between the communists and Kuomintang. Even a united Chinese army, although possibly superior in numbers, would have been no match for soviet experience, equipment and training.

The following table gives the comparative strength of the armies of the great powers in 1947:

| Country | Divisions | Active Force | Reserves |
|---|---|---|---|
| U.S.S.R. | 200 | 3,800,000 | 7,000,000 |
| United States | 13 | 670,000 | 6,000,000 |
| China | 350 | 5,750,000 | |
| Great Britain | 20 | 650,000 | 2,000,000 |
| France | 15 | 430,000 | 2,000,000 |

**Disposition.**—With the exception of China, whose forces were engaged in civil war, all of the great land powers had the bulk of their troops committed to duties outside the homeland. The Soviet Union had 1,500,000 to 2,000,000 men on occupation duties in Europe and the far east. The United States, with a system of voluntary enlistment, was fully extended to keep its occupation forces in Germany, Austria, Italy, Japan and Korea and its garrisons in the Caribbean and the Pacific Islands up to strength. Great Britain, although in the course of withdrawing its forces from Italy, India, Egypt and Palestine, maintained a large force in Germany with smaller groups in Austria and Italy. The French army was committed to occupation duties in Germany and Austria or occupied with colonial difficulties in Madagascar, Indo-China and Morocco. During the course of 1947, the French were forced to call up about 200,000 reserves because of internal troubles in metropolitan France.

**Training.**—During 1947 only the Soviet Union was able to place in operation an effective peacetime system of military training. China's forces had the costly but practical training of civil war. Great Britain, France and the United States were forced to suspend normal training activities as the bulk of their forces were committed to occupation or colonial duties.

**Equipment.**—A considerable proportion of the military expenditures of the great powers in 1947 was allocated to the development of new equipment. The atom bomb, guided missiles and supersonic aircraft interposed new factors to be reckoned with in developing land armies. Firepower of infantry units was greatly increased by the development of recoilless, light artillery weapons. Larger, faster and more heavily armed tanks were under development by all powers. The Soviet Union and the United States experimented in arctic equipment since that was the area commonly contiguous.

**Organization.**—All the major powers showed concern with the development of land forces transportable by air. This conception was combined with an emphasis on armoured striking forces of high speed and considerable firepower designed for quick break-through thrusts. In most armies, as a result of experience in World War II showing the necessity for the close integration of infantry with armour, the infantry division was strengthened by the addition of component armoured units as well as organic anti-aircraft units. The rifle platoon's firepower was increased by the addition of more man-carried automatic weapons. The squad reverted to its prewar size.

**United States.**—The wartime peak strength of 89 divisions and some 4,500,000 men of the United States army had dropped by 1947 to the equivalent of 13 divisions and 670,000 men. As the only major power without peacetime conscription, the United States was hard pressed to keep its units manned through voluntary enlistments. Occupation commitments delayed the army from completing its peacetime organization which called for 11 regular fully equipped combat divisions. This small regular force "on paper" was to be backed by 24 national guard and 23 reserve divisions, all of which could be mobilized in a year, giving the army a strength of 58 divisions one year after M-day. At the year's end this program was still largely in the recruiting stage.

*Disposition.*—During 1947 the evacuation of Italy, in accordance with the peace treaty, reduced the overseas commitments of the United States to 5,000 troops in Trieste, 10,000 in Austria, 105,000 in Germany and 150,000 in Japan and Korea. In the United States, two understrength regular army divisions, the 82nd airborne at Fort Bragg, N.C., the 2nd infantry division and elements of 2nd armoured at Camp Hood, Tex., were supplemented by four units that existed primarily on paper: the 3rd, 4th and 9th infantry and 3rd armoured divisions.

The organization of the national guard and the reserve divisions began to take the following planned disposition:

*1st army—Governors Island, N.Y.*

National guard—76th, 77th, 94th and 97th infantry and 98th airborne divisions

Reserve—26th, 27th and 43rd infantry and 50th armoured divisions plus one undesignated

*2nd army—Baltimore, Md.*

National guard—28th, 29th and 37th infantry divisions

Reserve—79th and 83rd infantry and 80th and 100th airborne divisions

*3rd army—Atlanta, Ga.*

National guard—30th, 31st and 48th infantry divisions

Reserve—81st and 87th infantry and 108th airborne divisions

*4th army—San Antonio, Tex.*

National guard—36th, 39th and 45th infantry and 49th armoured divisions

Reserve—90th and 95th infantry and 22nd armoured divisions

*5th army—Chicago, Ill.*

National guard—32nd, 33rd, 34th, 35th, 38th, 46th and 47th infantry divisions

Reserve—85th, 89th, 102nd and 103rd infantry divisions and 21st armoured and 84th airborne divisions

*6th army, San Francisco, Calif.*

National guard—40th and 41st infantry divisions

Reserve—91st, 96th, 104th infantry and 19th armoured divisions

*Training.*—During 1947 training in the United States army was devoted almost entirely to basic training and the schooling of enlistees for occupation duties. Comprehensive training programs were being developed for the reserve and national guard, and the army developed its plans in the event that the congress might authorize and implement universal military training.

*Equipment.*—Like the Soviet Union and Great Britain, the United States devoted a considerable amount of money to the development of guided missiles. Equipment for the ground forces under development included new types of amphibious vehicles, a new heavy tank to replace the General Pershing (which was to become the medium tank of the future), recoilless artillery and heavier self-propelled artillery.

*Organization.*—The departments of the army, navy and air force were created in 1947 as separate entities but subordinate to a common department of national defense. During the year the United States army made known its plans to reorganize both the infantry and armoured divisions. The new infantry division numbered more than 17,000 men, an increase of 3,000 over the World War II division. A tank battalion and an anti-aircraft artillery battalion were included as organic parts of the division. The firepower of the divisional artillery was increased 50% by the addition of 2 more howitzers to each of the 12 firing batteries. The infantry squad was reduced from 12 to 9 men. A 4th company and a bridge platoon was added to the engineer battalion.

The new-type armoured division included three equal-strength combat commands instead of the former organization of two

U.S. ARMY'S TASK FORCE "FRIGID" using a dog team to haul a "casualty" to a helicopter for evacuation during a mock rescue party in Alaska early in 1947

commands with an understrength reserve command. An entire battalion of infantry was added to the division as well as a heavy tank battalion. A new artillery battalion added 18 self-propelled 155-mm. howitzers to the firepower of the division. An anti-aircraft artillery battalion was added, composed of 32 self-propelled quadruple .50-calibre machine guns and 32 self-propelled dual 40-mm. guns. The tank-destroyer battalion was dropped. The half-track personnel carriers were eliminated, and 530 full-track personnel carriers became standard. The new-type division would have 325 medium tanks plus the battalion of heavy tanks.

**Great Britain.**—The strength of the British ground forces declined during the year to approximately 650,000, of which more than half were located outside the United Kingdom. The serious economic crisis of the country forced a continued attrition of military manpower in order to obtain essential labour for industry. The British government was under constant pressure to make even more drastic cuts in the armed services. Great Britain continued conscription and inducted approximately 190,000 men into the army during the year for a service of 18 months. After compulsory service each man was required to serve six years in the reserves.

*Disposition.*—During 1947 Great Britain continued to withdraw more troops from overseas commitments, although a large proportion remained on occupation duties at the end of the year. British forces in Germany were reduced to approximately 125,000 men. The 20,000 in Italy completed withdrawal in December in accordance with the terms of the Italian peace treaty, although some 5,000 remained in Trieste in conjunction with U.S. forces. Another 5,000 troops remained in Greece but were scheduled for early withdrawal, and the 70,000 in Palestine and the 75,000 in India were scheduled to be completely withdrawn during the first half of 1948.

*Training.*—Training, to a large part, was carried on by the army of the Rhine in Germany, although the first postwar manoeuvres were held in Great Britain. Emphasis was placed on airborne operations and armoured penetrations. Exercise "Longstop," held in the fall of 1947, posed the problem of capturing an airfield with two battalions of paratroops reinforced by one battalion of air-transported infantry.

*Equipment.*—Like the other great powers, Great Britain concentrated on the development of equipment necessitated by the advent of atomic power and guided missiles. Most of this work was carried on in close co-operation with the United States, and steps were taken to standardize the ground force equipment of the two countries.

*Organization.*—On the top level, Great Britain instituted an organizational change similar to unification in the United States. The three service ministers were subordinated to a minister of defense, and a defense committee was created similar to the U.S. national security council.

**U.S.S.R.**—Although the Soviet Union demobilized at least 30 classes of conscripts after the end of World War II, the red army still maintained up to 3,800,000 men under arms in 1947. Demobilization of the red army was carried forward on a systematic and selective basis, with basic infantrymen quickly released while technicians and armoured force troops were retained. The result gave the Soviet Union an army with special skill in armoured warfare. Of the ground forces 2,000,000 were in the Soviet Union, with the remainder on occupation duties. This level of strength would probably diminish slightly as occupation forces were reduced. One of the cardinal points of the latest soviet five-year plan provided for the strengthening and maintaining of the armed forces.

The red army maintained a professional cadre of approximately 2,000,000 officers and men. In addition, 800,000 to 1,000,000 men were being conscripted into the army each year for a two-year period of service after which they reverted into the reserve. By this method the Soviet Union was building up a trained reserve which by 1955 would amount to 15,000,000–20,000,000 men.

*Disposition.*—The actual disposition of the soviet armies was one of the secrets most carefully guarded by the Kremlin. During 1947 the red army completed the replacement of the bulk of its combat veterans on occupation duties with new conscripts (called by the Germans "Stalin Youth") who had been rigorously indoctrinated with Marxist philosophy so as not to be contaminated by contact with the outside world. The combat veterans, upon returning to the U.S.S.R., were reindoctrinated and screened before being discharged or placed in the professional cadre.

From 1,000,000 to 1,500,000 troops, 75–80 divisions, were engaged in occupation duties in Europe, located in eastern Germany, Poland, Rumania, Bulgaria, Austria and Hungary. Another 250,000, approximating 12–15 divisions, were on duty in northern Korea. Instructional groups remained in Yugoslavia, and many officers in Polish uniform were in reality Russians. Hundreds of thousands of discharged soldiers put on civilian clothes and became part of the civilian communities of the satellite countries.

Probably the most accurate disposition of the soviet forces in the U.S.S.R. was reported by a dissident soviet general officer to the North American Newspaper alliance in Paris. This placed 6 soviet army commands of 20 or more divisions each, in the following locations:

| Army | Headquarters | Commander |
|---|---|---|
| Army of the north | Leningrad | Marshal Klementiy Voroshilov |
| Western army | Minsk | Marshal Konstantin Rokossovsky |
| Army of the south | Odessa | Marshal Georgi K. Zhukov |
| Caucasian army | Tiflis | Marshal Ivan C. Bagramyan |
| Turkestan army | Tashkent | Marshal Semyon K. Timoshenko |
| Far eastern army | Vladivostok | Marshal Rodion Y. Malinovsky |

*Training.*—By virtue of the size of the occupation forces maintained by the Soviet Union, the red army was able to conduct training exercises in the occupied areas in divisional and corps strength. These exercises featured the use of massed armour and stressed individual initiative. The basic training of the Russian infantryman was expanded. The training of the Russian soldier had heretofore been more narrow than that of the British Tommy or the American G.I. The soviet wartime infantryman learned only discipline, political ideology, his weapon (usually the Russian tommy gun) and squad and platoon tactics. Only a smattering of other subjects such as gas defense and first aid was taught. This narrow training, along with a lack of general culture, was manifest when soviet troops assumed the role of occupying forces in Europe. Continuing a trend started before World War II and accentuated by experience in the war, the Soviet Union devoted considerable attention to the development of a professional corps of officers. Officers were given new privileges, higher pay and great authority. The uniform and traditions of the tsarist officer class were gradually revived. During the war Alexander Suvarov and Mikhail Kutusov became recognized historical heroes, ranking only below Lenin himself. Thus was pitched a new keynote for the 1947 soviet armies.

*Equipment.*—The Soviet Union spent more than $1,225,000,000 in 1947 on military research. An additional $9,000,000,000 to $10,000,000,000 was spent on new equipment. A considerable proportion of the allotment to research was spent on atom bomb development. More than 500 German scientists worked on the development of new and improved weapons, particularly guided missiles, tanks and aircraft. A new tank, probably the largest in the world, was developed.

*Organization.*—During 1947 the soviet tendency to develop elite infantry units for break-through operations continued. The guards rifle divisions were strengthened by the addition of one or more regiments of tanks. These units were designed for break-through of enemy lines and striking at key industrial and transportation centres. Additional firepower was given to armoured units.

**France.**—The ground forces of the French army numbered approximately 430,000 men in 1947. This number was increased somewhat during the year by the call-up of reserves during the general strike crisis in November. France conscripted 150,000 19-year olds for compulsory service. These conscriptees were required to serve in the reserves for 20 years.

*Disposition.*—Only about a quarter of the active ground forces were in metropolitan France. Some 110,000 French troops were on occupation duties in Germany and Austria, another 100,000 were in North Africa, and about 110,000 were in the colonies and the far east. It was necessary for France to maintain abnormally large forces in Madagascar and Indo-China because of insurgent activities in those areas. Perhaps by some design, the November crisis found metropolitan France almost denuded of troops. At that time it was necessary to call up 200,000 reserves.

*Strength of the Armies of the World*

| Country | Number of men | Per cent of budget for military | Number of civilians per soldier* | World ran on basi of numbe of men in the army |
|---|---|---|---|---|
| Afghanistan | 100,000 | | 120 | 19 |
| Albania | 60,000 | | 17 | 23 |
| Argentina | 100,000 | 38 | 140 | 17 |
| Australia | 35,000 | 30 | 206 | 27 |
| Belgium | 85,000 | 10 | 99 | 20 |
| Bolivia | 30,000 | 30 | 118 | 29 |
| Brazil | 110,000 | 42 | 404 | 16 |
| Bulgaria | 60,000 | | 109 | 21 |
| Canada | 25,000 | 12 | 460 | 30 |
| Chile | 25,000 | 19 | 209 | 31 |
| China | 5,750,000 | 80 | 91 | 1 |
| Colombia | 14,000 | 10 | 678 | 36 |
| Cuba | 15,000 | 18 | 320 | 35 |
| Czechoslovakia | 105,000 | 20 | 138 | 18 |
| Denmark | 14,000 | 14 | 271 | 37 |
| Ecuador | 10,000 | 20 | 308 | 41 |
| Egypt | 160,000 | | 108 | 14 |
| Eire | 11,000 | 6 | 273 | 38 |
| Finland | 34,000 | | 114 | 28 |
| France | 430,000 | 32 | 93 | 7 |
| Great Britain | 650,000 | 28 | 72 | 5 |
| Greece | 145,000 | | 49 | 15 |
| Hungary | 50,000 | | 182 | 24 |
| India | 375,000 | | 736 | 8 |
| Italy | 200,000 | | 229 | 12 |
| Mexico | 50,000 | 22 | 412 | 25 |
| Netherlands | 175,000 | 26 | 51 | 13 |
| New Zealand | 11,000 | | 145 | 39 |
| Norway | 15,000 | | 193 | 34 |
| Pakistan | 250,000 | | 460 | 10 |
| Peru | 25,000 | 21 | 280 | 32 |
| Poland | 250,000 | 25 | 179 | 11 |
| Portugal | 18,000 | | 444 | 33 |
| Rumania | 45,000 | | 349 | 26 |
| South Africa | 10,000 | | 1,070 | 40 |
| Spain | 450,000 | 33 | 60 | 6 |
| Sweden | 60,000 | | 109 | 22 |
| Switzerland | 10,000 | | 426 | 42 |
| Turkey | 675,000 | 19 | 28 | 3 |
| United States | 670,000 | 34 | 209 | 4 |
| U.S.S.R. | 3,800,000 | 18 | 51 | 2 |
| Uruguay | 10,000 | | 218 | 43 |
| Venezuela | 10,000 | 9 | 383 | 44 |
| Yugoslavia | 300,000 | 22 | 54 | 9 |

*Indicates the degree of mobilization, the lowest figures indicating the highest state o mobilization.

¶Information for Paraguay not available because of 1947 revolution.

*Equipment.*—During 1947 the French army found that most of the equipment it had received during World War II from the United States was wearing out. New equipment for one airborne division was obtained from Great Britain, and some surplus equipment, particularly transport, was obtained from the United States. Only a relatively small amount of equipment was available domestically, as French armament production was subordinated to commercial production for export.

*Organization.*—The postwar French army was organized on the principle of a small highly-mobile striking force supported by a large trained reserve. In contrast with the Maginot concept of fixed defense which prevailed in 1939, French military thinking now stressed war of movement. The French army had approximately three armoured and one airborne divisions under organization in 1947.

**China.**—Little accurate information was available on the Chinese armed forces. On the Kuomintang side there were approximately 3,500,000 men, of whom about half were combat effectives. Of some 200 divisions which the Kuomintang tried to keep in action, approximately 20 were partially American-trained and an additional 30–40 had some surplus equipment purchased from the United States.

On the communist side a fluctuating force of from 1,500,000 to 2,000,000 men were equipped with American material captured from the Kuomintang as well as some Russian equipment.

**British Commonwealth.**—*Australia.*—During 1947 the Australian army was rapidly demobilized toward a peacetime goal of 35,000 men. Occupation duties in Japan were the principal commitment abroad.

*Canada.*—Canada's wartime army of 495,000 was almost completely demobilized by 1947, and the peacetime cadre of 25,000 volunteers was in the process of formation. The regular force was supported by a reserve of 180,000 organized into two armoured and four infantry divisions.

All military exercises were closely linked with those of the United States. Emphasis was placed on the defense of Canada's northern frontier against possible attack across the arctic.

*India.*—In the split-up of the Indian forces which served under the British, the dominion of India received 45 regiments approximating 250,000 men. In addition, 25,000 Gurkha troops from Nepal were serving in the forces of the new dominion. Total land strength was between 375,000 and 400,000 men.

*New Zealand.*—Armed forces of New Zealand were stabilized at 11,000 volunteers for peacetime.

*Pakistan.*—The division of the former British Indian army gave to the new dominion of Pakistan some 20 regiments. This, together with levies and contributions of native princes, gave the new army a strength of about 250,000 men.

**European Powers.**—*Belgium.*—During 1947 Belgium continued the slow rebuilding of its army, reaching a strength of about 85,000 men. The Belgian army had two divisions, each composed of two infantry brigades and a reinforced reconnaissance regiment. Part of the Belgian army was committed to occupation duties in the Aachen-Cologne area of Germany.

*Bulgaria.*—Under reorganization to conform to the soviet pattern, Bulgaria's army numbered about 60,000 men in 1947.

*Czechoslovakia.*—With about 20% of the country's budget allocated to military expenditures, the once crack Czech army had been reorganized along soviet lines. With approximately 105,000 men in the army in 1947, the Czechs stressed mechanization and mobility. Russian equipment and methods were used.

*Denmark.*—The Danes had about 14,000 men under arms in 1947. One Danish brigade participated in the occupation of Germany.

*Finland.*—Under the peace treaty between Finland and the Soviet Union, an army of 34,000 professional soldiers was permitted. Approximately 18,000 recruits were trained for the reserve.

*Germany.*—Although Hitler's legions were disbanded after the defeat of 1945, there was some evidence of a German army in Russia. While difficult to assess, the most alarmist reports, if true, would indicate that this force was organized by the soviets to take over in eastern Germany after the red army withdrew and consisted of 36 divisions of former German soldiers whom the Russians considered good communists. Of the divisions, 18 were reported to be armoured and another 7 motorized, using German, Russian, British and U.S. equipment. The German force was alleged to be concentrated in three places: in the Crimea, near Lake Ladoga and near Minsk. The existence of the red German armies, however, remained unconfirmed.

*Greece.*—A Greek army of about 145,000 men was engaged in constant operations against a guerrilla force numbering between 10,000–15,000 men. The Greek army, consisting of four mountain and three mechanized divisions, was dispersed throughout the country in units ranging from company to regimental size in an effort to hold territory against the guerrillas and keep communications open. This left few troops for offensive operations.

*Hungary.*—Under soviet occupation, Hungary's ground force of 50,000 was reorganized along Russian lines and under Russian tutelage.

*Italy.*—Italy's army, reorganized as an associate of the Allied powers during World War II, totalled some 200,000 men, equipped with British and U.S. equipment.

*The Netherlands.*—The Netherlands' army consisted of 175,000 men in the ground forces, of which over 100,000 were in the Netherlands Indies. There was sufficient equipment for three divisions. Conscription brought 28,000 men into the army in 1947.

*Norway.*—The ground forces totalled 15,000 and were organized into mountain and coastal battalions. The equipment was British.

*Poland.*—A total of 250,000 in the ground forces was supported by 100,000 militia. The Polish army had three armoured and ten infantry divisions and was being reorganized along soviet lines.

*Portugal.*—Ground forces totalled 18,000.

*Rumania.*—Reorganized along soviet lines with the bulk of its troops specially indoctrinated in Russia, the Rumanian army totalled 45,000.

*Spain.*—Ground forces in Spain totalled 450,000, organized into 16 infantry, 4 mountain, 1 armoured and 1 cavalry divisions. Four divisions were in Spanish Morocco.

*Sweden.*—Sweden maintained 60,000 men in the ground forces in 1947. These were augmented by a trained reserve of 600,000 men, built up by compulsory military service of 12 months' term. Excellently equipped, the army was specially skilled in mountain warfare although untested in modern combat.

*Switzerland.*—About 10,000 regulars were in the ground forces in 1947. This force was augmented by a trained reserve of 500,000 which could be mobilized in four days for defense of the national redoubt in the Alps. The Swiss were excellently equipped for mountain warfare.

*Turkey.*—Turkey maintained 675,000 men in the ground forces in 1947 as a show of strength against pressure from the Soviet Union. These forces were organized into three field armies, with seven fortification commands and four military regions. There were 35 active divisions of which 4 were mechanized, 2 armoured and 4 mountain. Heterogeneously equipped with material from nearly every European country, Turkey was scheduled to be re-equipped by the United States.

*Yugoslavia.*—Ground forces of 300,000 were maintained in 1947 with principal concentrations on the Italian and Greek frontiers. These forces were organized into 3 armies with approximately 35 infantry and 2 armoured divisions. World War II equipment was being replaced by soviet equipment.

**Middle Eastern Powers.**—Few accurate figures were available on the ground strength of the middle eastern powers. Egypt had an army of approximately 160,000 men with considerable British equipment. The constabulary force of Iran was organized and schooled along U.S. lines, while those of Iraq and Trans-Jordan showed British influence, and those of Syria and Lebanon showed French influence. The middle eastern powers were mobilizing their strength at the close of 1947 as the possibility of a holy war over Palestine developed. (*See* also AVIATION, MILITARY; MUNITIONS OF WAR; SELECTIVE SERVICE.) (E. L. S.)

## Arsenic.

The output of white arsenic (arsenous oxide) in the major producing countries in late years was as follows:

*World Production of Arsenic*

(Thousands of short tons)

| | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|---|---|
| Australia . . . . . | 1.59 | 3.73 | 3.78 | 3.05 | 2.56 | 2.58 | 2.23 | 1.82 |
| Belgium (exp.) . . . | 3.67 | ? | ? | ? | ? | ? | ? | ? |
| Brazil . . . . . . | 0.78 | 1.19 | 1.29 | 0.99 | 1.07 | 0.93 | 1.06 | 1.0 |
| Canada . . . . . | 0.87 | 1.05 | 1.77 | 3.92 | 1.58 | 1.31 | 1.02 | 0.37 |
| France . . . . . . | 6.61 | 7.75 | 5.28 | 5.38 | 5.33 | 1.98 | ? | ? |
| Germany (exp.) . . | 1.96 | ? | ? | 3.95 | 6.18 | ? | ? | ? |
| Italy . . . . . . . | 1.27 | 1.41 | 0.60 | ? | ? | ? | ? | ? |
| Mexico. . . . . . | 7.79 | 10.22 | 14.16 | 20.41 | 22.39 | 16.87 | 16.55 | 10.64 |
| United States . . . | 22.34 | 24.98 | 32.48 | 28.68 | 31.20 | 36.09 | 24.35 | 10.24 |
| Total. . . . . . | 51.2 | 58.8 | 66.9 | 69.5 | 78.9 | 73.0 | 56.9 | 36.1 |

Normally Belgium and Italy would appear in the table, but no late data were available. Sweden has a larger potential arsenic output than the United States, but the available market is small, and output is kept low.

**United States.**—Because of strikes in the smelting plants producing arsenic, the 1946 output was the lowest in 20 years. The shortage of supply forced the exhaustion of a government stock of almost 2,000 tons by the end of the first quarter, and before the year was over industry stocks had been depleted 80%. (G. A. Ro.)

**Art:** *see* AMERICAN LITERATURE; ARCHITECTURE; PAINTING; SCULPTURE; etc.

## Art Exhibitions.

Museums, art organizations and sales galleries of the U.S. continued in 1947 the same full schedule of exhibitions which had been increasing during the past few years.

The oldest annual in the U.S. is held at the Pennsylvania Academy of the Fine Arts, and in 1947 reached its 142nd year. Arthur Osver won the much coveted Temple gold medal for "Majestic Tenement."

New York's National Academy of Design held its 121st annual in two sections, the first of which included a few nonmembers by special invitation. Philip Guston was awarded the $1,200 Altman prize for "Holiday." In the second section of the exhibition Eugene Speicher and Paul Sample (both painters) and Marion Sanford and Peter Dalton (both sculptors) all won $1,000 prizes.

In Pittsburgh, Carnegie institute, formerly well-known for its international exhibitions, continued to hold an all-invited American annual. Presumably the international art scene was not yet bright enough to warrant including European artists. Zoltan Sepeshy won the top prize of $1,500 for "Marine Still Life" and Joseph Hirsch carried off the $1,000 second prize for "The Iceman."

Chicago's Art institute made its 58th American annual into a theme show and limited it to two modern trends, abstraction and surrealism. The much-discussed $1,000 Campana purchase prize went to William Baziotes for "Cyclops" while Rico Lebrun was awarded the $500 Harris prize for "Vertical Composition."

Pepsi-Cola, sponsor of industry's largest annual, held its

ANNUAL GREENWICH VILLAGE outdoor art exhibit. Passersby are shown viewing 1947 entries by N.Y. city residents which lined the walls of buildings at Washington Square park early in June

fourth exhibition for American artists and awarded $35,960 in prizes. Top prize of $2,500 went to Henry Kallem, a scarcely known artist, for "Country Tenement" and the $2,000 second prize to Lamar Dodd for "The Breaker."

An unusual exhibition was held at the Philbrook Art Center in Tulsa, Okla., which sponsored its second annual open only to Indians of the U.S. and Alaska. Though many state fairs had held art exhibitions, nothing so impressive was ever assembled as the Old Northwest Territory exhibition held at the Illinois State fair in Springfield.

Prizes of $2,900 were distributed and the intention was expressed of making this an annual event.

Numerous one-man exhibitions dotted the year's calendar. The Museum of Fine Arts, Boston, and the Detroit Institute of Arts collaborated on a comprehensive exhibition of the work of the early 19th century American romanticist, Washington Allston (1779–1843). The Suffolk museum at Stone Brook, Long Island, assembled a remarkably interesting group of paintings by the three Mount brothers, famed in the mid-19th century both for portraits and genre work. Ben Shahn was given a retrospective exhibition at the Museum of Modern Art in New York where his social commentaries and symbolic themes showed to advantage. Gaston Lachaise, the French born U.S. sculptor who died in 1935, was given an impressive showing of both sculpture and drawings at the Knoedler gallery in New York.

The Whitney museum in New York departed from its usual policy of showing only American art and assembled an exhibition "Painting in France 1939–1946." This included 117 paintings by 67 artists. Georges Braque's "The Studio" was perhaps the most distinguished painting in the exhibition. Much of the work was not of the best and there appeared to be little stylistic development from French art before World War II.

An exhibition of the work of the three Le Nain brothers was assembled at the Toledo museum and centred around "The Family Dinner," a painting by Mathieu le Nain which the museum had acquired. These painters, who often combined on the same canvas, depicted with sensitivity and charm the daily life of humble people in 17th century France.

The Cleveland Museum of Art staged an imposing exhibition of paintings, pastels, drawings and sculpture by Edgar Degas, the great French painter of horse races and ballet girls. During the summer the Philadelphia museum showed an impressive array of top-flight pictures borrowed from local collectors. In the group were such famous items as Edouard Manet's "Le Bon Bock" (Carroll S. Tyson collection), Toulouse-Lautrec's "At the Moulin Rouge" (Henry P. McIlhenny collection), Henri Rousseau's "Storm in the Jungle" (Henry Clifford collection). Two other collectors, R. Sturgis Ingersoll and Rodolphe M. de Schauensee, also lent paintings.

More than 1,000 objects were included in the magnificent exhibition of Byzantine art held at the Walters gallery in Baltimore, Md. Ivories, manuscripts, textiles, sculpture and metalwork were combined in examples of superlative quality to form a rich and varied exhibition.

Mary Cassatt, the U.S. painter who went to France and became a member of the impressionists group, was given a full-scale showing at the Wildenstein galleries in New York.

Adolphe Monticelli, whose popularity had been somewhat dimmed in late years, was revived in a well-selected exhibition at the Vose gallery in Boston. Albert Pinkham Ryder, the 19th century U.S. romantic-mystic, was given an important exhibition at the Whitney museum.

New York's Museum of Non-Objective Paintings arranged a memorial exhibition of the work of Lazlo Moholy-Nagy, member of the German Bauhaus who was the head of the Institute of Design in Chicago. A more selective exhibition featuring work done in Chicago was subsequently shown at the Art institute.

Alfred Stieglitz, noted photographer, collector and pioneer dealer in modern art, was given a memorial exhibition at the Museum of Modern Art. This not only included a selection of his photographs but also items which he had collected such as African Negro sculpture, Toulouse-Lautrec lithographs and paintings by Arthur Dove, Marsden Hartley, John Marin and Georgia O'Keeffe. At the Cleveland Museum of Art a fabulous exhibition of gold objects was assembled. Jewellery, ritual vessels and previous objects of all sorts from all periods combined in a unique and impressive display.

Probably the most important exhibition of the year was the French tapestry exhibition sent to the Metropolitan museum in New York by the French government. This included 200 items ranging from the Angers tapestries of the late 14th century, the famous 15th century Cluny tapestries, a great set depicting the life of Louis XIV, a group of the Louis XV period designed by François Boucher, and finally a group of modern tapestries. This was the most important exhibition of the kind ever assembled. (*See* also Art Sales; Museums.)

(F. A. Sw.)

**Arthritis.** The incidence of infectious arthritis caused by identifiable or recoverable specific germs decreased notably, as the articular complications were largely prevented by such chemotherapeutic agents as penicillin and sulfonamides. Thus the incidence of gonorrhoeal arthritis in the United States during 1947 was only about 10% of what it was a few years before. Other forms of bacterial arthritis, such as those from staphylococci, haemolytic streptococci or pneumococci, formerly so destructive and crippling, were found to be curable promptly when treated adequately with penicillin. Reports indicated that suppurative arthritis from war wounds, which in previous wars often caused loss of limb or life, was largely prevented by the improved methods of treatment used in World War II. This new method of treatment consisted of early and adequate surgical treatment of the wound, closure of the synovial cavity and articular capsule and then adequate immobilization. When suppurative arthritis did occur, it was generally controlled by penicillin administered systematically and intra-articularly, with or without the supplementary use of secondary reparative surgery. The amount of permanent disability among soldiers of World War II prevented by these means was incalculable.

The newer antibiotic, streptomycin, had not yet found an established place in the treatment of arthritis, but a few patients with tuberculous arthritis who were treated thereby were notably improved, and the articular and other manifestations of Haverhill fever (epidemic arthritic erythema, one form of rat-bite fever) were thought to be amenable to therapy by streptomycin.

The cause of rheumatoid arthritis remained unknown. Further evidence was reported indicating that the disease is a systemic one and that many bodily tissues other than those of joints are affected. Although lesions in hearts were rarely detected during life, post-mortem studies on rheumatoid patients revealed the common presence of lesions in cardiac muscles or valves which were indistinguishable from those found in the hearts of patients dead of rheumatic fever. Inflammatory and degenerative lesions were often found also in the skeletal muscles of rheumatoid patients, and the cerebrospinal fluid also was sometimes altered in its content of cells and protein. These findings suggested that the noxious agent of rheumatoid arthritis is a blood-borne irritant which becomes widely disseminated.

Because the serum of patients with rheumatoid arthritis usually contains agglutinins against group A haemolytic streptococci and also precipitins against certain fractions of these bacteria, the latter bacteria had been considered by some investigators to be the probable cause of the disease. But a new hypothesis (based on the presence of hyaluronic acid in synovial fluid as well as in the capsule of group A haemolytic streptococci) was proposed which accounted for the presence of such antibodies without the intervention of bacteria.

The treatment of rheumatoid arthritis by injections of gold salts retained the favour of most rheumatologists. A new treatment was reported for the control of the toxic manifestations of gold salts, the use of BAL (British anti-lewisite, 2,3-dimercaptopropanol). Gold dermatitis, severe purpura and granulocytopenia following treatment with gold responded rapidly to such treatment. The French physician who originally brought treatment with gold salts into favour reported his belief that injections of an organic copper compound gave results superior to those from gold.

No direct indication was found for the use of any vitamin in rheumatoid arthritis, and further severe nonfatal and fatal toxic reactions to concentrated vitamin D compounds, including "ertron," were reported. Penicillin was valueless in rheumatoid arthritis; further results with prostigmine were disappointing.

World War II brought greater prominence to four forms of "rheumatism": rheumatoid spondylitis, psychogenic rheumatism, Reiter's syndrome and acute epidemic tropical polyarthritis. Rheumatoid spondylitis, being a disease chiefly of young men, was commonly encountered among military personnel. In this disease a tendency for an increased urinary excretion of 17-ketosteroids was reported. Many persons with diffuse or localized musculoskeletal aches and pains, suspected of having arthritis or "rheumatism" are merely suffering from tension states or psychoneurosis; so concluded medical officers who noted psychogenic rheumatism among 15% of rheumatic patients sent to army rheumatism centres.

So-called Reiter's syndrome (urethritis, conjunctivitis and arthritis) was studied further; its cause was reported as a dysentery bacillus, a pleuro-pneumonialike organism or a filtrable virus. Secret war reports on the acute epidemic tropical polyarthritis which affected U.S. and Australian troops in northern Australia, Bougainville and nearby islands were made public. Symptoms lasted generally one, occasionally three or four weeks, and disappeared without residues. No cause was discovered.

Further studies of the typical and atypical (including cerebral) manifestations of rheumatic fever were reported. Enthusiasm for the intravenous (rather than the oral) administration of salicylates waned, since no definite clinical superiority, but greater toxicity, was attached thereto. Long-term sulfonamide prophylaxis to prevent the recurrences and complications of rheumatic fever received further approval; patients protected thereby had only a sixth as many recurrences as did the controls. The first report on prophylaxis by the oral use of penicillin appeared: ten patients so treated for a year had only a fifth as many recurrences as did the controls.

Under investigation was the possible relationship of hyaluronidase and hyaluronic acid to the development of certain rheumatic diseases, especially rheumatic fever.

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(P. S. H.)

**Artificial Weather:** *see* METEOROLOGY.

**Artillery:** *see* MUNITIONS OF WAR.

## Art Sales.

As auction price totals are announced at the close of each season, the statistics indicated here cover the 1946–47 season rather than the 1947 calendar year. Parke-Bernet, the leading New York auction house, had a total of more than $6,000,000 for the fourth consecutive season. The total figure, $6,019,153, was actually around $650,000 less than the figure for the previous season which had been the all-time high for auction prices. The Plaza Art galleries totalled $1,411,426 for the season (a decline of only $30,000 from the previous year) and the Kende galleries at Gimbel Brothers in New York had a busy season but announced no figures.

Undoubtedly the most interesting item sold by Parke-Bernet was the *Bay Psalm Book* of 1640, the first book printed in America. This was bid in at $151,000 by Dr. A. S. W. Rosenbach from the Gertrude Vanderbilt Whitney trust and was the highest price ever paid for a printed book. The two collections which brought the highest totals were the Stotesbury estate, $294,480, and the Satterlee sale, $276,710, but 18 other sales netted more than $100,000 each. Madame Vigée-Lebrun's "Self-Portrait with Her Daughter" brought $21,000 at the Thompson sale, the highest price of the season for a painting. Antoine Watteau's "La Danse Paysanne" went for $14,000 at the Rosenfeld sale. Return to popularity of Joaquin Sorolla was indicated by the unusually high price of $13,500 paid for his "Playa de Valencia." There was also a revival of interest in realistic genre painting as indicated by the sale of Jean Vibert's "Vision of Monks Listening to Chamber Music" at $4,800.

Furniture and objects d'art featured frequently in the sales rooms, top items at Parke-Bernet being a pair of Hepplewhite chests at $10,000 and a Chippendale break-front bookcase at $9,500. Prints also were prominent on the sales lists and the top bid was $6,000 for the fourth plate of Blake's "America, a Prophecy."

In London the auction market continued to bring top prices. One of the most publicized sales was the property of the duke of Kent which totalled £92,341 at Christie's. High items in the sale were three Claude Lorrain landscapes sold at £6,930, a set of 20 Chippendale chairs at £2,310 and a pair of silver gilt tea caddies (1766–67) at £900.

Also at Christie's the effects of Viscount Rothermere brought £30,639, top single items being £13,125 for a Rembrandt "Self-Portrait." The earl of Lonsdale's silver fetched a total of £45,769 at Christie's, high item of which was a 34-piece toilet set (1708) at £7,800. At Sotheby's leading sales were a Velazquez "Portrait of Don Gaspar de Guzman" sold for Viscount Cowdray at £11,000 and a Gainsborough "View of the Mouth of the Thames" from the estate of Sir Reginald Proctor-Beauchamp which sold for £4,000. (F. A. Sw.)

**Aruba:** *see* CURAÇAO.

## Asbestos.

The asbestos output of the major producing countries was as follows during late years:

*World Production of Asbestos*

(Thousands of short tons)

| | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|---|---|
| Canada | 364.5 | 345.8 | 477.8 | 439.5 | 467.2 | 419.3 | 466.9 | 547.6 |
| Cyprus (exp.) | 11.4 | 10.7 | 5.4 | 3.4 | 1.3 | 2.2 | 3.3 | 6.6 |
| Italy | 7.5 | 9.1 | 11.9 | 12.9 | ? | ? | 5.3 | ? |
| South Africa | 22.1 | 27.4 | 28.3 | 34.6 | 35.6 | 34.6 | 28.2 | 18. |
| Southern Rhodesia | 58.3 | 57.9 | 54.2 | 62.3 | 56.4 | 58.3 | 56.3 | 55.9 |
| Swaziland | 8.0 | 20.8 | 21.1 | 25.6 | 18.9 | 32.7 | 23.4 | 32.1 |
| United States | 15.1 | 19.2 | 22.4 | 15.3 | 3.9 | 7.6 | 13.6 | 14.4 |

**United States.**—The domestic asbestos production increased from 13,590 short tons in 1945 to 14,426 tons in 1946, and sales rose from 12,226 tons to 14,075 tons. There was a sharp increase in demand, jumping imports from 374,199 tons in 1945 to 456,688 tons in 1946—a new record. Even with the high imports, the supply was short.

**Canada.**—The high demand in the United States caused asbestos production in Canada to rise to a level above that of the war years. The 1945 sales of 466,896 short tons rose in 1946 to 547,685 tons, and in the first half of 1947 to 314,107 tons.

Mines and mills were being expanded in 1947 to meet the higher demand.

**South Africa.**—After the 1943 peak, production dropped to 34,582 short tons in 1944, 28,216 tons in 1945, and 14,435 tons in the first three quarters of 1946. Exports in the same years were 28,174 tons, 22,005 tons and 13,186 tons.

**Southern Rhodesia.**—The postwar decline was less pronounced in Southern Rhodesia, with a production of 58,293 short tons in 1944, 56,348 tons in 1945, and 55,872 tons in 1946.

**Swaziland.**—Beginning as a new producer in 1939, Swaziland developed an output that in 1946 surpassed that of South Africa. (G. A. Ro.)

**ASCAP (American Society of Composers, Authors and Publishers):** *see* SOCIETIES AND ASSOCIATIONS.

**Ascension:** *see* BRITISH EMPIRE.

**Asia:** *see* AFGHANISTAN; CHINA; INDIA; etc.

## Asphalt.

Production and consumption of asphalt and related bitumens in the United States were as follows during late years, in thousands of short tons:

| | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|
| Petroleum asphalt: | | | | | |
| Production | 6,296.3 | 6,756.7 | 6,996.1 | 7,126.6 | 8,165.6 |
| Sales | 6,840.8 | 6,897.8 | 6,735.2 | 6,851.0 | 7,614.3 |
| Domestic oil | 6,337.7 | 6,597.4 | 6,023.0 | 5,770.2 | 6,064.1 |
| Foreign oil | 503.1 | 300.4 | 712.2 | 1,080.8 | 1,550.2 |
| Road oil (000 bbl): | | | | | |
| Production | | 2,295 | 1,556 | 2,686 | 6,175 |
| Sales | | 2,054 | 2,031 | 2,567 | 5,034 |
| Bituminous rock: | | | | | |
| Sales | 935.3 | 835.6 | 740.5 | 643.6 | 777.5 |
| Gilsonite: | | | | | |
| Sales | 40.0 | 50.4 | 49.1 | 61.3 | 68.4 |

Imports of natural asphalts are small, amounting to only 5,148 short tons of all types in 1945 and 4,449 tons in 1946, most of which was lake asphalt from Trinidad. Petroleum asphalt imports were 142,802 tons of solid and 4,029 tons of liquid in 1945 and 97,204 tons of solid and 25,629 tons of liquid in 1946. Imports of all types are more than offset by exports of petroleum asphalt. (G. A. Ro.)

## Assassinations.

The assassinations of 1947, actual or attempted, included the following:

Feb. 10. Pola, Italy. Brig. Gen. R. W. M. de Winten, commander of British 13th infantry brigade, was shot and killed by Italian woman who was enraged by award of Pola to Yugoslavia.

Feb. 26. Haifa, Palestine. A. E. Conquest, Haifa's deputy superintendent of police, was assassinated by Jewish underground gunmen who shot at him from cruising taxicab.

March 27. Sanok, Poland. Ukrainian underground members assassinated Col. Gen. Karl Swierczewski, Polish vice-minister for national defense, near there.

July 12. Washington, D.C. William L. Kaiser, former policeman, fired several shots at Sen. John W. Bricker in senate office building in abortive assassination attempt.

July 19. Rangoon, Burma. Premier U Aung San and five other members of Burma's interim government were assassinated and two others wounded by three assassins armed with machine guns.

July 19. Seoul, Korea. Lyuh Woon-heung, Korean anticommunist leader, was slain by assassin who crawled into back of his car.

July 18. Simla, India. Sir Shafa'at Ahmad Khan, former member of Moslem league, was slain by knife-wielding assassin a few hours after joining the Indian interim government.

Sept. 12. Haifa, Palestine. Sami Taha, Arab labour leader and political foe of Haj Amin el-Husseini, exiled grand mufti, was shot and killed on one of Haifa's main streets by unidentified assassins.

Oct. 10. Indo-China. Dr. Truong Dinh Tri, head of Hanoi municipal council, was mortally wounded by grenades thrown at him by terrorists. (He died on Oct. 11.)

Oct. 10. Cholon, Indo-China. Nguyen Van Sam, anticommunist leader, was shot by passenger travelling on bus with him two miles from Saigon.

Nov. 27. Bordeaux, France. Gen. Raoul Montrelay was wounded by man who, after capture by military police, was identified as Capt. Jean Muselier, son of Free French naval commander.

Dec. 25. Stockholm, Sweden. Alberto Bellardi Ricci, Italian minister to Sweden, was stabbed to death by insane countryman as he was giving farewell party to legation staff.

**Association for the Advancement of Science, American:** *see* SOCIETIES AND ASSOCIATIONS.

**Association of Research Libraries:** *see* SOCIETIES AND ASSOCIATIONS.

## Astronomy.

Probably the most important development of the year was the completion of the 200-in. telescope; the giant mirror was moved from the optical shop in Pasadena, Calif., to the observatory on Mount Palomar on Nov. 18–19. Of comparable importance was the near completion of the 48-in. Schmidt telescope of the same observatory. The two instruments would supplement each other; for light-gathering power and distance penetration the 200-in. would be supreme, while the 48-in. Schmidt would occupy a similar position for investigations connected with the structure of our galaxy and other problems which require photographing considerable areas of the sky on a single plate. (*See* also TELESCOPES.)

A remarkable wide-angle camera was designed by J. L. Greenstein and L. G. Henyey of the University of Chicago in connection with a contract with the U.S. navy. The telescope has a field of 140° in diameter and works at a speed of F:2; with it most of the sky visible at any one time can be photographed with a single exposure. The optical system consists of a mirror which forms an image and a lens which photographs this image. The camera should be exceedingly valuable for the photography of meteors, the zodiacal light and aurorae.

The introduction of the new photoelectric cells had a profound effect on astronomical research. The electron multiplier cell made it possible to observe stars of such faintness that photoelectric methods of determining stellar brightness and colour were superseding earlier photographic procedures. It appeared likely that the determination of brightness of stars intended to serve as standards would be done almost exclusively by the photoelectric method, because of its far greater accuracy; for extended programs the photographic method still possesses advantages in that large numbers of stars can be recorded on one plate. The lead-sulphide cell, which is sensitive to light in the far infra-red, was being used by G. P. Kuiper and by A. E. Whitford with great success for both planetary and stellar problems.

**Solar System.**—*The Sun.*—Several successful attempts were made to photograph the far ultra-violet spectrum of the sun with spectrographs mounted on V-2 rockets. The spectrum illustrated was obtained by the Applied Physics laboratory of Johns Hopkins university on a rocket flight at White Sands, N.M., on July 29, 1947; the photograph was obtained at an altitude of 84 mi. This height is above the ozone blanket which cuts off solar radiation at the earth's surface for wave lengths smaller than 2,900 Ångstrom units.

A giant group of sunspots was observed during March and April; in March this group contained the largest single sunspot ever observed; it was somewhat larger than that of Jan. 1946, which previously held the record for size.

*The Planets.*—The radiation of several of the planets was measured in the infra-red by means of a Cashman lead-sulphide cell by G. P. Kuiper at the McDonald observatory, Mount Locke, Tex. Many features were recorded in the range between 7,500 and 23,000 Ångstrom units. The heat radiation (as distinguished from reflected sunlight) from the planet Mercury was detected; because of this planetary radiation Mercury is the brightest of the planets at a wave length of 21,000 Ångstroms. In Oct. 1947, Kuiper announced the discovery of carbon dioxide in the atmosphere of Mars. This is of the greatest interest as indicating similarity in the Martian atmosphere to that of the earth—in particular in connection with the possi-

BATTERY OF TELESCOPIC CAMERAS set up at Bocaiuva, Brazil, where scientists of 20 nations observed a total solar eclipse on May 20, 1947. The camera at the right was designed to take star pictures as a check on the Einstein theory of relativity

bility of some form of life on Mars. The amount of carbon dioxide present in the Martian atmosphere is similar to that found for the earth.

*Comets.*—A very bright comet was discovered in December; it was a conspicuous object to the naked eye for observers in the southern hemisphere.

**The Stars.**—One of the most remarkable developments of the year in stellar astronomy was the discovery of magnetic fields in several stars by H. W. Babcock of the Mount Wilson observatory. Prior to Babcock's work, the only star known to have a magnetic field was the sun. The fields were discovered from measurements of minute shifts of certain lines in the spectra of a peculiar group of stars. The implications of this discovery were far reaching and the field promised to be one of the most active in astronomy in the future.

Among other results may be mentioned the search for the nucleus of our galactic system by Joel Stebbins and A. E. Whitford of the Washburn observatory with the use of a photoelectric cell sensitive in the region of 10,000 Ångstroms. A bright region in the infra-red was detected at a position which suggests that it is actually the nucleus of our system. The reason for working in the infra-red for problems of this kind is the greater transparency of the space between the stars for light of long wave length. A somewhat similar investigation making use of photographic plates sensitized for the infra-red was carried out by J. J. Nassau and G. B. van Albada of the Case Institute of Technology. Their photographs, which were made with the Schmidt telescope of the Warner and Swasey observatory, reveal myriads of distant red stars and open a new field for galactic studies. It was expected that more and more investigations would utilize the infra-red spectral region because of its greater space-penetrating power. (W. W. M.)

**Athletics:** *see* TRACK AND FIELD SPORTS; etc.

## Atomic Energy.

The subject of atomic energy during 1947 can be divided into four topics, namely, (1) international deliberations; (2) activities in the United States, including actions of the U.S. Atomic Energy commission, distribution and use of radioactive isotopes, studies of power production and military reports; (3) activities in other nations; and (4) advances in atomic physics.

**International Deliberations.**—While considerable progress was made during 1947 in developing the plan of international control acceptable to a majority of the members of the United Nations Atomic Energy commission, virtually no progress was made in reconciling the majority and minority viewpoints. To state the situation another way, no progress was made in reconciling the U.S. and soviet viewpoints. For the majority plan in essence was that proposed by the U.S., and every nation represented on the commission favoured it with the exception of the Soviet Union and Poland.

As the year progressed, the continued bitter charges of the soviet representatives attacking the good faith of the U.S. brought forth countercharges from the U.S. representatives that the Soviet Union had followed a policy designed to delay as long as possible any settlement of the problem.

It will be recalled that the United Nations Atomic Energy commission adopted its first report on Dec. 30, 1946, by a vote of ten to zero but with two of its members, the Soviet Union and Poland, abstaining from voting. This report was transmitted to the Security council on the last day of 1946.

**The First Report.**—The plan outlined in the commission's first report was essentially an elaboration of the plan proposed to the commission at its initial meeting on June 14, 1946, by the U.S. representative, Bernard M. Baruch. It was based on the Acheson-Lilienthal report made public by the U.S. department of state on March 28, 1946.

It provided for the establishment of an international control agency in the field of atomic energy charged with the duty of preventing the use of atomic energy for destructive purposes and ensuring its use for peaceful purposes. The agency was to be authorized to maintain a system of international inspection and to supervise or manage all activities whose nature made them dangerous to world peace.

In addition the plan called for prompt punishment of violators of the international agreement and provided further that the veto power in the Security council was not to apply to the agreed activities of the international control agency or the prompt punishment of violators.

**Resignation of Baruch.**—On Jan. 4, 1947, Bernard M. Baruch presented his resignation as the U.S. representative on the United Nations Atomic Energy commission. He explained that he and his associates had accomplished their task and that since practically every other nation was represented on the commission by its delegate to the Security council, it would be wise for the U.S. to follow the same plan. Accordingly, Pres. Harry S. Truman appointed Warren R. Austin, chief U.S. delegate to the Security council, to replace Baruch.

**The Security Council.**—No progress was made by the Security council in reconciling the U.S. and soviet points of view, although the situation looked momentarily brighter in February. On Feb. 14 Andrei A. Gromyko, the soviet representative in the Security council, stated that "in spite of serious defects of the report, the U.S.S.R. is prepared to consider it item by item and submit amendments." On Feb. 18 he submitted a list of 12 such amendments.

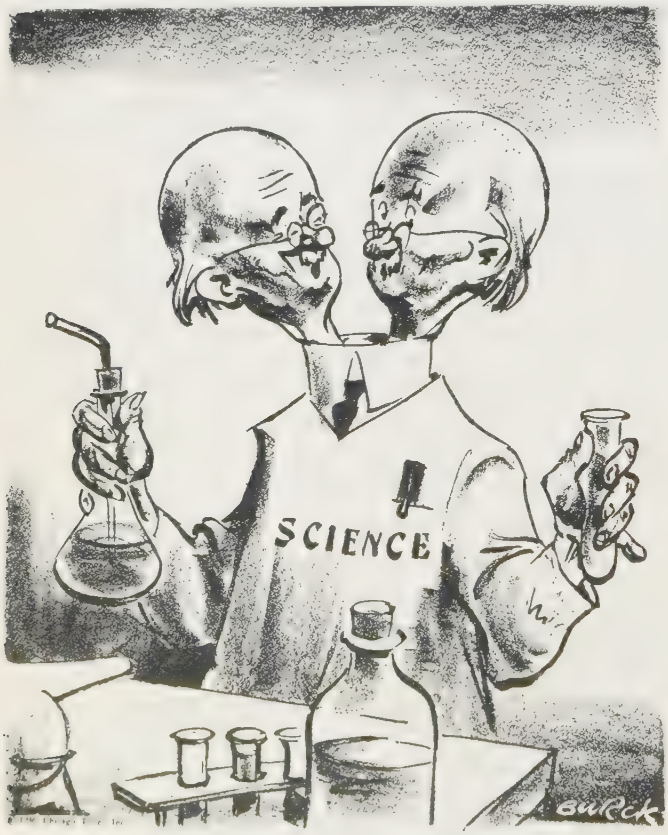
However, on March 5 he delivered an address that was so bitter an attack upon the U.S. as to make it apparent that no immediate solution of the problem was possible in the Security council. Accordingly on March 10 the Security council voted to return the problem to the Atomic Energy commission with instructions to return a second report before the next session of the general assembly which had been set for Sept. 25.

**The Commission Resumes.**—On March 19 the United Nations Atomic Energy commission began its second series of meetings.

Addressing a full session of the commission on June 11, Gromyko set forth more clearly the soviet plan for atomic control. He agreed that inspection should be carried out by international personnel and, reversing previous soviet policy, agreed that the international control agency should operate its own research laboratories. However, he reiterated the familiar soviet demand that atomic bombs be outlawed and the U.S. stockpile of bombs be destroyed before international control methods were discussed. Likewise, he again insisted on the maintenance of the veto power. On Aug. 13 the Canadian representative offered a resolution calling the soviet proposals inadequate. This was adopted two days later by ten votes, all but those of the Soviet Union and Poland. No negative votes or abstentions were recorded.

The commission's Control committee spent the summer studying a series of six "working papers" which had been prepared by small subcommittees whose members served as individual experts without committing their governments. These six papers constituted a detailed elaboration of the control scheme in the commission's original report. They dealt with the operational and developmental functions of the proposed international control agency, its research activities, and its functions in every phase of the production of atomic energy from the mining of ores to the distribution of nuclear fuels. During the discussion of these papers, the soviet representatives assumed the role of interested observers only. On Sept. 8 both the Control committee and the Working committee approved these six papers. Ten nations voted for the papers. The U.S.S.R. voted against all six. Poland voted against five and abstained from voting on one.

**The Commission's Second Report.**—The commission adopted its second report on Sept. 11 by a vote of 10 to 1. The negative vote was that of the Soviet Union. Poland abstained from voting.



THE UNIVERSAL QUERY which remained unanswered in 1947: "I've just discovered a new world shattering weapon—have you found a counter measure yet?" Cartoon by Burck in the *Chicago Times*

The report summarized the 1947 proceedings of the commission and incorporated the six working papers as Part II under the title of "Operational and Developmental Functions of the International Control Agency." The report recommended the establishment of production quotas based on principles and policies to be specified in the international treaty or convention; ownership by the international control agency of nuclear fuel and source material; ownership, management and operation by the agency of facilities dangerous to world security; licensing by the agency of nondangerous facilities to be operated by nations; and inspection by the agency to prevent or detect clandestine operations.

**In the United States.**—Control of atomic energy in the U.S. passed from the Manhattan Engineer district of the army to the U.S. Atomic Energy commission on Jan. 1, 1947.

President Truman had appointed the members of the commission on Oct. 28, 1946, but long debate in the U.S. senate delayed the confirmation of these appointments until April 9, 1947. Members of the commission were David E. Lilienthal, chairman, Robert Fox Bacher, Sumner T. Pike, Lewis L. Strauss, and William Wesley Waymack. Carroll L. Wilson was general manager.

In a report to congress on July 22, the commission summarized the first six months of its operation. The report stated that the commission "has pressed the production of fissionable materials and the improvement of atomic weapons as essential to the security of the country." The plants at Oak Ridge, Tenn., for the separation of uranium 235 from ordinary uranium, and at Hanford, Wash., for the manufacture of plutonium from uranium, had been operated steadily from the start of the year and improvements and economies effected in their operation. The atomic weapons program was being carried forward at the Los Alamos laboratory near Santa Fe, N.M. The report made it plain that the commission had no intention of relaxing these activities until congress "affirms that acceptable international agreements have been reached."

**Budget and Personnel.**—By June 30 the commission had obligated approximately $600,000,000 to cover contracts and other obligations from funds of the Manhattan project which President Truman had allocated to the commission. The president's budget for 1948 recommended congressional appropriations of $250,000,000 for expenditures in 1948 plus an authorization for the commission to enter into contracts during 1948 that would involve the expenditure of a similar amount in 1949.

The commission had 4,133 employees as of May 31. About half of these were at Oak Ridge. Fewer than 200 were in Washington, D.C.

**Plan of Operation.**—Headquarters of the Atomic Energy commission were in Washington. The commission was planning a decentralized organization with broad operational authority designated to five major centres of operation, each charged with the responsibility for a different part of the commission's total program.

The first of these centres, the Office of New York Directed Operations, was established on June 9. The Office of Santa Fe Directed Operations was established on July 2. The other three centres were to be at Oak Ridge, Hanford and Chicago.

None of the commission's major production or research programs was being carried on by direct commission operation. The commission had more than 100 contractors and these in turn had several hundred subcontractors. These contractors and subcontractors had about 37,000 employes.

**Pacific Proving Grounds.**—An important step taken by the commission during 1947 was the establishment of a proving grounds in the Pacific for routine experiments and tests of atomic weapons. The location was not disclosed until Dec. 1 when the commission announced that the site was Eniwetok Atoll in the Marshall Islands. The 145 natives on Eniwetok were to be moved to new homes.

**Principal Laboratories.**—The commission in 1947 operated five principal laboratories for research in the field of atomic energy. These were: The Los Alamos laboratory near Santa Fe, N.M.; the Argonne laboratory, just outside Chicago, Ill.; the Clinton laboratories at Oak Ridge, Tenn.; the Brookhaven National laboratory under construction at Patchogue, Long Island, N.Y.; and the Knolls Atomic Power laboratory under construction at Schenectady, N.Y. In addition, large laboratories were operated under contract with the commission at Berkeley, Calif.; Ames, Ia.; Dayton, O.; and Hanford, Wash.

In pursuance of its policy of obtaining the broadest possible participation of qualified institutions in its program, the commission arranged for the operation of the Argonne National laboratory by the University of Chicago with the participation of 29 midwestern universities and research institutions.

The Brookhaven National laboratory was being operated under contract by Associated Universities, Inc., a nonprofit organization of nine eastern universities.

The commission was assisting studies being made on behalf of the army air forces by the Fairchild Engine and Airplane corporation as to the possibility of applying nuclear energy to the propulsion of aircraft. It was also assisting the navy in connection with similar studies regarding the propulsion of ships.

**Medical Program.**—The commission was conducting a medical program to study the dangers created by fissionable materials and to extend knowledge of the effects of radioactivity on living organisms. A grant of $100,000 was made to Western Reserve university for an investigation of the effects of radioactive substances on living cells.

**Radioactive Isotopes.**—The first sale of radioactive isotopes, or radioisotopes, from the uranium pile at the Clinton laboratories at Oak Ridge, Tenn., took place on Aug. 2, 1946. On Aug. 3, 1947, the U.S. Atomic Energy commission issued a report summarizing the first year of such sales.

During the period, the laboratory made 1,092 shipments of radioisotopes to scientific and industrial research institutions in the continental U.S. and the territory of Hawaii. Approximately 100 varieties of isotopes made from 60 chemical elements were furnished to 170 institutions or research workers in 92 localities. They included, among others, isotopes of barium, calcium, carbon, chlorine, copper, gold, iron, mercury, nickel, phosphorus, platinum, silver, sodium, sulphur, tin, tungsten and zinc.

It is difficult to realize the difference which the uranium pile has made in the production of radioisotopes. For example, carbon 14 is being produced at a cost of $50 a millicurie. To manufacture that same amount with the aid of a cyclotron would cost $1,000,000.

There are two chief uses for radioisotopes at the present time. One is as a substitute for radium or X-rays for the treatment of disease, particularly cancer, goitre and leucaemia. The other is for so-called tracer experiments. Because of its radioactivity, a radioisotope can be traced through a complicated chemical reaction or an involved biological cycle.

Researches with radioisotopes covered a wide range in 1947. The University of Wisconsin, Madison, Wis., used them in investigation of the therapeutic action of drugs. At Vanderbilt university, Nashville, Tenn., Dr. Paul F. Hahn experimented with radiogold (the radioactive isotope of gold) as a treatment for chronic forms of leucaemia, lymphoma and Hodgkins' disease. Dr. George E. Burch at Tulane university, New Orleans, La., employed radiosodium in the study of congestive heart failure. At the Cedars of Lebanon hospital in Los Angeles, Dr. Myron Prinzmetal used radiophosphorus to compare the circulation of the normal heart with that in coronary occlusion. Dr. Edward H. Reinhard at Washington university, St. Louis, Mo., used radiophosphorus for the treatment of leucaemia. At the same institution, Dr. Carl V. Moore employed radioiron in the study of anaemia. Other institutions employed radioisotopes in numerous biological, chemical and metallurgical investigations. (*See* also X-RAY AND RADIOLOGY.)

RESEARCH IN RADIATION SICKNESS, using laboratory rats, was continued at Oak Ridge, Tenn., in 1947. Stunted growth in the rat on the left resulted from a dose of beta radiation which also left it half-blind and almost hairless

**World-Wide Distribution.**—On Sept. 3, 1947, President Truman sent a telegraphic message to the fourth annual meeting of the International Cancer Research congress in St. Louis stating that the U.S. was ready to furnish radioisotopes to scientists in foreign countries for biological and medical research. Subsequently the U.S. Atomic Energy commission issued a list of 30 radioisotopes for foreign distribution. These contained no chemical element beyond No. 83 (bismuth) in the periodic table of chemical elements.

**Stable Isotopes.**—On Dec. 1 the U.S. Atomic Energy commission announced the availability of more than 100 stable isotopes of 29 chemical elements for distribution to research laboratories in the U.S. These are produced at the Oak Ridge electromagnetic isotope separation plant. As the designation indicates, these isotopes are not radioactive but they are equally important for many types of researches.

**Power Production.**—Addressing the Economic club of Detroit on Oct. 6, Chairman Lilienthal of the U.S. Atomic Energy commission intimated that the first experimental power plant using atomic energy to operate a steam turbine-electric generator would be in operation in 1948 or 1949. However, he emphasized that many serious scientific and engineering problems would have to be solved before such power generation could be put on a commercial basis.

The production of power requires the development of a uranium pile capable of operating at high temperatures. A second important problem is the development of structural materials which will withstand both the high temperature and the intense radioactivity of the pile. Still another difficult problem is the removal of fission products from the uranium pile since these in time would absorb so many neutrons as to stop the chain reaction.

Lilienthal indicated that the probability was that a power plant would require an atomic pile enriched by the addition of purified materials, either uranium 235 or plutonium.

Also on Oct. 6, the U.S. Atomic Energy commission announced the appointment of a board of consultants to act as an industrial advisory group. Heading this board was James W. Parker, president of the Detroit Edison Co.

**The Plutonium Pile.**—Dr. Norris E. Bradbury, scientific director of the Los Alamos laboratory, announced in 1947 that a plutonium pile or fast reactor had been in operation at the laboratory from Nov. 1946. Unlike the uranium pile, which employs a moderator to slow down the neutrons which sustain the chain reaction, the plutonium pile requires no moderator and, like the atomic bomb, makes use of fast neutrons. In fact this reactor may be regarded as an atomic bomb brought under control and made to release its energy slowly instead of in a fraction of a second. Dr. Bradbury stated that the plutonium pile was another step toward finding the most efficient method of utilizing atomic energy.

It is presumed that the development of the plutonium pile cost the life of Dr. Louis Slotin, who died from an overdose of radiation as the result of an accident at Los Alamos in May 1946. Dr. Slotin is understood to have separated with his bare hands some pieces of plutonium which were beginning to glow with a blue light, apparently approaching the explosive point.

**Military Considerations.**—The U.S. army expressed its views on the atomic bomb in 1947 in a document submitted to congress under the title of "The Effects of the Atomic Bomb on National Security (An Expression of War Department Thinking)." This report states quite frankly, "The total destruction of a nation's resources which has evolved from the development of strategic bombing has been brought to culmination by the atomic bomb. The end of an atomic war may find both victor and vanquished in a state of almost complete ruin. It follows that winning the war may well not be preserving national security."

The army held that the atomic bomb is not an all-purpose weapon but that when used to attack major military targets it is "a decision in a package." While the long-range bomber is the principal means of delivering the bomb at present, the army anticipated the development of pilotless aircraft and guided missiles suitable for this purpose.

The army believed that the existence of the bomb makes it imperative for the U.S. to build up stronger defenses of radar detection stations, interceptor fighter planes, etc. It also saw the need of military allies and advanced bases.

The report concludes, "The bomb, and the potential range of aircraft and missiles, has made the defense of the nation more difficult, more expensive, and less certain of attainment. The need of eliminating war itself has never been so vitally necessary to the national security of the U.S. and to the survival of civilization throughout the world."

The views of senior officers of the U.S. navy were set forth in a report prepared by Dr. Bernard Brodie for the legislative reference service of the Library of Congress. The navy officers believed that it would be approximately 15 years before any other nation possessed atomic bombs in quantity and that the existing U.S. active and reserve fleets appeared suitable for the kind of hostilities likely to prevail should war break out in the next 10 years. The officers regarded the bomb as a "scarce and expensive" weapon which could be delivered successfully only from advanced bases by well-protected bombing planes.

In a subsequent "critique," Dr. Brodie took the navy officers to task for regarding the atomic bomb as scarce and expensive and said that in his view a nation could afford to lose 90% of the bomber planes bearing atomic bombs by reason of the immense damage the other 10% could do.

**Special Weapons Project.**—On July 24, 1947, the U.S. army and navy announced the formation of an Armed Forces Speci Weapons project as a joint organization to discharge all militar functions relating to atomic energy. The program include training of special personnel and "military participation in th development of atomic weapons of all types." The project wa commanded by Maj. Gen. Leslie R. Groves, wartime head o the Manhattan project.

**Radioactivity at Bikini.**—The Bikini Atoll, scene of the 194 atomic bomb tests, was still radioactive in the summer of 194 Dr. William H. Hamill and Dr. Russell R. Williams, Jr., of th University of Notre Dame, reported that coconuts growing o the island of Bikini were radioactive and that fish caught in th lagoon were also radioactive. The two scientists spent five week on the island with a navy expedition. They regarded the islan as safe for human beings for short periods.

**Plight of Bikini Natives.**—When Bikini Atoll was chosen fo the 1946 atomic bomb tests, "King" Juda and his 165 follower were moved to Rongerik Island, 130 mi. east of Bikini. A repor made to the navy in 1947 by Dr. Howard G. MacMillan state that the natives were "destitute and unable to support themselves on the island's agriculture or fisheries." On Oct. 2, th Pacific Trusteeship authority at Pearl Harbor announced tha the Bikini natives would be moved to Ujelang Island, 290 mi southwest of Bikini and 400 mi. west of Rongerik. Ujelang is larger island than Rongerik.

**In the United Kingdom.**—The British Atomic Energy act o 1946 was adopted by the house of commons on Nov. 6, 1946 It is comparable in many ways with the U.S. Atomic Energ act of 1946. However, instead of creating a commission, i lodges the control of atomic energy activities in the ministr of supply.

A uranium refining factory was located at Springfields, Lancashire, and 1,000 tons of uranium ore were imported from th Belgian Congo.

On May 19 the ministry of supply announced that "Possibl use of the former explosive factory at Drigg for a purpose i connection with atomic energy is under technical examination." British newspapers said that the site, which is in West Cumberland, 250 mi. northwest of London, was being considered fo the construction of a uranium pile.

**In France.**—The French government created an Atomic Energy commission (Commissariat à l'Energie Atomique) of which Dr. Frederick Joliot-Curie was the head. Dr. Joliot-Curie state that the commission intended to devote itself to the peacefu applications of atomic energy only.

He disclosed that the commission had made substantial progress in the construction of two atomic piles of medium power A survey to find uranium ores had been started. Factories t purify uranium salts were put into operation. Laboratories were established at Fort Chatillon on the outskirts of Paris. Construction work was started on a "Center of Nuclear Studies" on the Saclay plateau 15 mi. from Paris.

**In Canada.**—The story of Canada's part in the wartime atomic bomb researches was disclosed more fully during 1947. Experiments with uranium, using carbon as a moderator, were begun in the laboratories of the National Research council at Ottawa in March 1940.

In 1942 a laboratory was established at Montreal as a joint project of the Canadian and United Kingdom governments. In 1943, following discussions with U.S. and British authorities, it was decided to build a uranium pile using heavy water as a moderator on the south bank of the Ottawa river, near Chalk river and 130 mi. west of Ottawa. Operation of the Chalk River plant was taken over by the National Research council of Canada under the direction of Dr. David Keys.

On Aug. 31, 1946, Canada established an Atomic Energy Con-

Above: **DAVID LILIENTHAL** (standing left), addressing members of the United Nations Atomic Energy commission at Lake Success, N.Y., in June 1947

Below: **BROOKHAVEN NATIONAL LABORATORY**, a huge centre for peacetime atomic research set up at Brookhaven, N.Y., in 1947. The government-financed project was operated by nine eastern universities

Below: **BLOOD TESTS** in 1947 for members of the U.S. navy who took part in the Bikini tests of 1946. Remaining ships were still too radioactive to be manned in 1947, but all personnel were reported free of contamination

Below: **MEASURING VAPOUR PRESSURE** of fission products at the Argonne National laboratory, centre of nuclear studies at Chicago, Ill. Plans were under way in 1947 to unite the project's scattered facilities on government-purchased land 26 mi. outside of Chicago

trol board to control all activities connected with atomic energy. It has powers to control the operation of the uranium mines at Great Bear lake, N.W. Terr., and the refineries at Port Hope, Ont., as well as other activities.

**In the Soviet Union.**—Addressing the Moscow celebration of the 30th anniversary of soviet rule on Nov. 6, 1947, Foreign Minister Molotov stated that the secret of the atomic bomb "has long ceased to exist." This statement brought wild cheers from his auditors who apparently interpreted it to mean that the Soviet Union now had the atomic bomb.

Statesmen, scientists and military experts in other countries rejected this interpretation, agreeing in general that it would take the Soviet Union from 8 to 15 years to produce atomic bombs in quantity.

**Elementary Particle Physics.**—Laymen who have difficulty in keeping up with the developments in nuclear physics may be surprised to learn that many leaders of the world of physics are turning to a yet newer specialty known as subnuclear physics or elementary particle physics. This branch of physics is concerned with certain aspects of the behaviour of the elementary particles comprising the universe, namely, the electron, the positron, the proton, the neutron and the meson. In particular, it is concerned with transformations in which these elementary particles change their character or are created or destroyed.

At the present moment, these researches represent an attempt to arrive at a better understanding of nature. But it is difficult to predict what their ultimate effect might be. Dr. John A. Wheeler stated that one eventual possibility is a method of releasing atomic energy which would produce from the ordinary substances all around us greater amounts of energy than uranium fission. Such a development would make it possible to manufacture atomic bombs thousands of times more powerful than those now in existence. It would change the whole aspect of the international control of atomic energy which is predicated on the fact that at present it is only necessary to control uranium and thorium.

Researches in elementary particle physics require the use of extremely high energies. It is for this reason that an effort is being made to design more powerful cyclotrons and other machines. The subject has also given an impetus to the study of cosmic ray phenomena since such high energies are encountered in the cosmic rays.

**New Atom-Smashers.**—More than $10,000,000 was spent in the U.S. during 1947 on new "atom-smashers." These included the familiar Van de Graaff generators, cyclotrons, betatrons and three newer devices, namely synchrotrons, synchro-cyclotrons and linear accelerators. It was estimated that the bill for these new devices would eventually reach $100,000,000. So far, a great part of the financing had come from the army and navy.

**Atmospheric Radiocarbon.**—Researches conducted by the Institute for Nuclear Studies of the University of Chicago and the Houdry Process corporation, made public on May 30, disclosed the existence of carbon 14, a radioactive isotope, in the atmosphere. The carbon 14 is produced by the bombardment of atmospheric nitrogen by incoming cosmic rays. Dr. Willard F. Libby and Dr. A. V. Grosse, who headed the researches, also demonstrated that this radiocarbon is a constituent of all living matter. Less than one millionth of 1% of the carbon in the human body consists of carbon 14. Nevertheless this is enough to cause 150,000 nuclear disintegrations per minute. Dr. Grosse believed that other "cosmic ray elements" would eventually be found in the atmosphere.

**The Future.**—Scientists feel that civilization stands at the crossroads. One path leads to an international atomic armament race which they believe certain to end in World War III and the destruction of civilization. The other path leads to the peacetime development of atomic energy with vast possibilities for the advancement of health and happiness. (*See* also Chemistry; Metallurgy; Physics; Uranium.)

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**Atom Smashers:** *see* Atomic Energy.

**Attlee, Clement Richard** (1883– ), British prime minister, was born in London on Jan. 3. After leaving Oxford university he worked in the East End of London, and in 1913 became a lecturer at the London School of Economics. In World War I he served in Gallipoli, Mesopotamia and France. He was elected mayor of Stepney in 1919, member of parliament for Limehouse in 1922, and in the second Labour government was chancellor of the duchy of Lancaster, and later postmaster general. He held office in the wartime coalition government, and became prime minister when the Labour party achieved a majority in July 1945.

Attlee took special responsibility for the passage of the bills through parliament which led to the transfer of power from British hands in India and Burma. He also acted as chairman of the joint committee of ministers and officials which handled the fuel crisis in February.

In Jan. 1947, he received a visit from Léon Blum, prime minister of France, and during the year also received delegations from the supreme soviet of the U.S.S.R. led by V. V. Kuznetsov (January), the parliament of Czechoslovakia (May), the executive council of the governor of Burma (January), and in June a Burmese goodwill mission.

Attlee, at the Labour party conference in May, reviewed the achievements of his government and spoke of the long-term plan to which it was pledged.

The prime minister and Mrs. Attlee visited Walcheren, Netherlands, to take part in a tree-planting ceremony observing the restoration of the island which was flooded in 1944 when R.A.F. raids blew four breaches in the dykes. Following the wedding of Princess Elizabeth to the duke of Edinburgh on Nov. 20, Attlee held meetings with William Mackenzie King, premier of Canada, Field Marshal Jan Smuts, premier of South Africa, and other empire statesmen who were in London.

**Auriol, Vincent** (1884– ), French statesman, was born on Aug. 27 at Revel (Haute-Garonne *département*). After receiving his degree of doctor of laws at the faculty of law in Toulouse, he practised in that city. He was elected to the chamber of deputies as Socialist member for Muret in 1904, and was successively re-elected up to the collapse of France in June 1940. Auriol's first cabinet post was in Léon Blum's popular front government in 1936, when he was appointed minister of finance. He was minister of justice in the Camille Chautemps government (1937–38) and held a cabinet post in the second and short-lived Blum government in 1938. Auriol protested against the armistice of 1940 and against Marshal Henri Philippe Pétain's efforts to establish totalitarian rule, was imprisoned by Vichy authorities for several months but was later released. In Oct. 1943 he escaped to London where he joined Gen. Charles de Gaulle's movement. He became a member of the assembly set up in Paris after its liberation in Aug. 1944. In Nov. 1945 he was appointed minister of state without portfolio in the De Gaulle government. He was elected president of the French constituent assembly on Jan. 31, 1946. On Jan. 16, 1947, Auriol became the first president under the constitution of the Fourth Republic. In April 1947 he paid an official visit to French West Africa.

## Austin, Warren Robinson

(1877– ), U.S. statesman and politician, was born in Highgate, Vt., Nov. 12. He was graduated with a Ph.B. degree from the University of Vermont in 1899 and was admitted to the bar in 1902. He was elected to the U.S. senate on the Republican ticket in 1931 to fill out an unexpired term and was re-elected in 1934 and 1940.

Although a Republican, Austin sided with the Roosevelt administration on foreign policy. In June 1946, he was appointed U.S. representative to the U.N. security council by President Harry S. Truman. He formally succeeded to this post (vacated by Edward R. Stettinius, Jr.) in Jan. 1947 at which time he also became a member of the U.N. Atomic Energy commission. Shortly after assuming the latter post, Austin reaffirmed (Jan. 25) U.S. support of the Baruch plan for international atomic control.

On March 28, Austin told his security council colleagues that the Truman doctrine did not signify that the U.S. was forsaking the U.N. He urged the security council (June 27), to use "enforcement action" under the charter to prevent further support of Greek guerrillas by Yugoslavia, Bulgaria and Albania.

On Oct. 23, he demanded flat rejection of the Soviet resolution calling for punishment of "warmongers" and on Nov. 11, he scored abuse of the veto by the Russians and their failure to agree on atomic energy control.

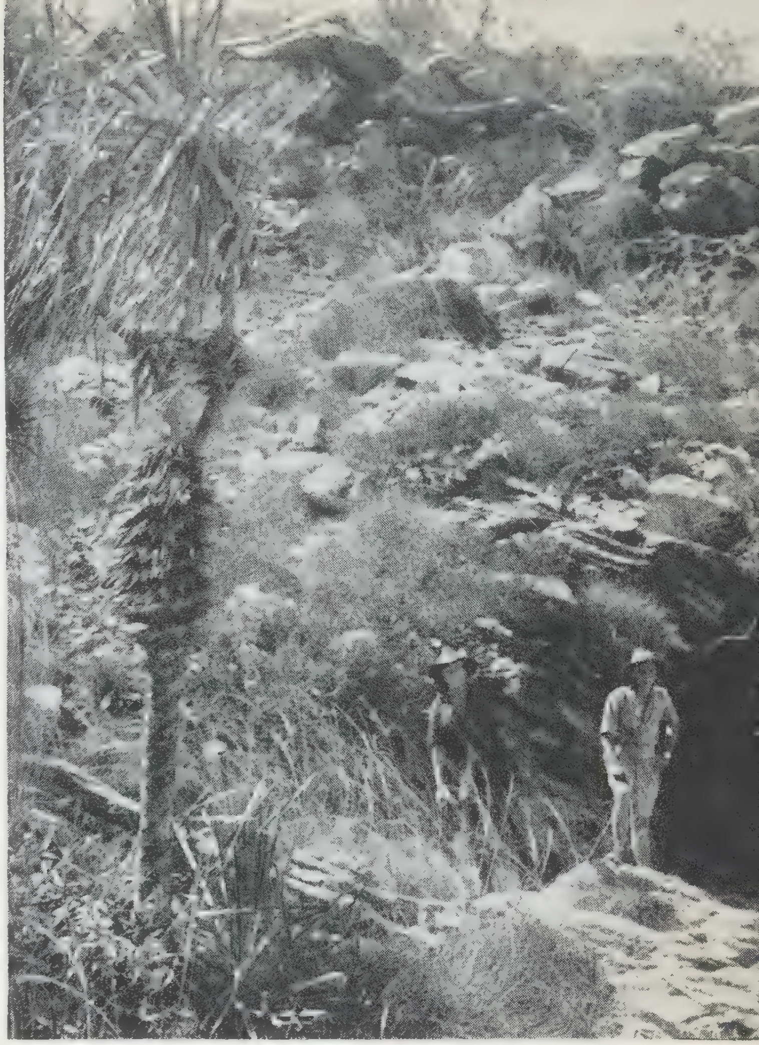
## Australia, Commonwealth of.

A self-governing member of the British commonwealth of nations, situated in the southern hemisphere. Area: 2,974,581 sq.mi.; pop. (census June 30, 1947) 7,580,820. Chief cities (pop. June 30, 1947): Canberra (capital, 15,156); Sydney (1,484,434); Melbourne (1,226,923); Adelaide (382,604); Brisbane (402,172); Perth (272,586); Hobart (76,567); Newcastle (127,188). Language, English. Religion, Christian (census 1933: Anglican 2,565,118; Roman Catholic 1,161,455; Presbyterian 713,229; Methodist 684,022; other Christians 603,914). Ruler, King George VI. Governor general in 1947, William John McKell. Prime minister, Joseph Benedict Chifley.

**History.**—On Jan. 31, 1947, approval of the appointment of W. J. McKell as governor general was announced from Buckingham palace. McKell, who had been premier of New South Wales from 1941 until the date of his appointment, was the second Australian to hold the office of governor general of the commonwealth.

Following its return to power after the general elections in Sept. 1946, the Chifley government had a strenuous term of office. It encountered some difficulties with its own supporters over the proposal to ratify the Bretton Woods agreements, but these were successfully overcome in March 1947 when a bill for acceptance of the agreements was finally passed.

The political sensation of 1947 was the government's announcement that it proposed to nationalize the private trading banks. In May it was decided, under the powers given by section 48 of the Banking act, 1945, to prevent private banks from conducting the banking business of state and local governing authorities as from Aug. 1. On Aug. 13, after challenge by the Melbourne city council, the high court declared section 48 invalid. Three days later the proposal to nationalize the banks was announced by Prime Minister Chifley, and a bill to give it effect was introduced into the house of representatives on Oct. 15. While the bill provided for protection of the interests of shareholders and bank staffs, the proposal to give the Commonwealth bank a practical monopoly of banking aroused the most intense controversy. It was anticipated that the almost certain passage of the bill would be the prelude to a long battle in the courts.



AUSTRALIA'S WILD COASTAL REGIONS to the west were being recharted in 1947 as part of a royal naval project to correct the sketchy coast-line map of the huge island continent. Surveyors are shown on field assignment

Extensive amendments, under which conciliation commissioners were given very much wider powers and increased considerably in numbers, were made to the Commonwealth Arbitration act in April. The new act came into operation with a full complement of commissioners later in 1947. An act to consolidate commonwealth social services was passed in June, and a bill was in preparation at the end of the year for the purpose of establishing a comprehensive national medical service.

A commonwealth census of population and dwellings was taken on June 30, 1947. It revealed that the population had increased from 6,629,839 at the census of June 1933 to 7,580,820, or by 14.3%, compared with an increase of 22% in the shorter interval between 1921 and 1933. The immigration program sponsored by the commonwealth government officially commenced in March, but was hampered in its early stages by the shipping shortage. European and American as well as British sources were being tapped.

*External Affairs.*—The year was marked by the holding of two important international conferences in Canberra. At the first, which opened on Jan. 28, the six participating governments (Australia, France, Netherlands, New Zealand, United Kingdom and United States) signed an agreement establishing a South Pacific commission within the ambit of the United Nations charter. The commission would be concerned with the economic and social interests of the Melanesian and Polynesian peoples of the South Pacific region, numbering nearly 2,000,000. The second gathering, which opened on Aug. 28, was a British Empire conference on the Japanese peace settlement. It was attended by representatives of the United Kingdom and all the dominions, including (for the first time) the new dominions of India and Pakistan, and a representative of Burma. No formal decisions were recorded, but a wide harmony of views was evident on the scope and character of the peace settlements.

An Australian delegation took a prominent part at the second session of the preparatory committee of the United Nations Conference on Trade and Employment at Geneva and at the full conference at Havana at the end of the year. The general agreement on tariffs and trade was provisionally accepted in November, and consequential adjustments in the Australian tariff were brought into operation at the same time.

*Defense.*—General demobilization ended in Feb. 1947. Australia's postwar defense plans were completed by the middle of 1947 and discussed with Field Marshal Viscount Montgomery of Alamein during his visit to Australia in July. The government approved a five-year program which would involve a total expenditure over the period of £A1,000,000.

Work commenced on the Guided Missiles range, which extends from Mt. Ebo in South Australia to the Indian ocean. The Guided Missiles project was vigorously advanced despite some early opposition from the Communist party.

*Public Finance and Economic Affairs.*—During 1947 employment rose to record levels. Seasonal conditions were greatly improved, and very high prices were received for exports, especially wool and wheat. By September the export price index was 71% above the level of June 1946 and 171% above the 1937–39 level. Industrial output made good but uneven gains, and there was a marked growth in new manufacturing activities. Fair progress was made with the housing program, but it was somewhat hampered by shortages of labour and materials.

After a protracted hearing the Commonwealth Arbitration court decided in September to reduce the standard working week under commonwealth awards from 44 to 40 hours as from Jan. 1, 1948. Major relaxations of the wage-pegging regulations were made in April and again in October, and industrial tribunals were then substantially free to vary wage rates at their own discretion.

Overseas trade for the year 1946–47 resulted in an export surplus of £A77,782,000. Exports of merchandise increased by 56% to £A306,685,000 while imports rose by 17.6% to £A228,903,000. As a result of the British sterling crisis Australia, as a member of the sterling pool, agreed to live within its overseas income in 1947–48. The astonishingly bountiful season, resulting in a record wheat crop and an excellent wool clip, together with the high prices then ruling for Australian exports, would make this easy, but the dollar position continued to cause anxiety. Heavy restrictions on imports from dollar sources were imposed in early September, and further drastic cuts were made later in the year.

In March 1947 taxation reductions were announced to operate as from July 1. Income tax and social service contribution rates were reduced and rebates for dependents increased, at an estimated cost of £A34,000,000 per annum. The only new changes made in the September budget for 1947–48 were the abolition of the wartime (company) tax, minor sales tax concessions and suspension of the gold tax.

Expenditure on defense and allied services in 1946–47 was £A129,000,000 and on postwar charges £A161,000,000. (Credits against both items reduced the net total to £A232,000,000.) The second item included a gift of £A25,000,000 to the United Kingdom as a contribution to war costs in the Pacific. Nonwar expenditure amounted to £A218,000,000. Total expenditure at £A450,000,000 exceeded total revenue by £A38,000,000, the deficit being financed wholly out of loans raised from the public. Expenditure in 1947–48 on defense and allied services was estimated at £A80,000,000, on postwar charges at £A120,000,000 (with credits of £A32,000,000), and on nonwar items at £A259,000,000 (including £A33,000,000 on civil works). The expected deficit of £A30,000,000 would be financed by public loans.

**Education.**—In 1945: state schools 8,447, average attendance 726,440, teachers employed 31,061; private schools 1,817, average attendance 249,024, teachers 11,799; technical schools 114, total enrolment 110,841, teachers 5,165; business colleges 109, average attendance 23,270, teachers 659; universities 7, total enrolment 15,586.

**Banking and Finance.**—Revenue (est. 1947–48) £A397,000,000; expenditure (est. 1947–48) £A427,000,000 (ordinary £A259,000,000; defense and postwar charges £A168,000,000). Revenue (actual 1946–47) £A412,437,000; (est. 1946–47) £A384,976,000; expenditure (actual 1946–47) ordinary £A217,734,000; defense £A232,597,000; estimated (1946–47) ordinary £A222,505,000; defense £A221,000,000. Public debt (June 30, 1947) £A2,891,032,000; notes issued (June 30, 1947) £A202,643,000; gold and sterling reserve (June 30, 1947) £A50,880,000; exchange rate £A1 = 321.8 U.S. cents.

**Trade and Communications.**—Overseas trade 1946–47 (merchandise): imports £A228,903,000; exports £A306,685,000. Communication and transport: roads (1944) total mileage *c.* 491,000 mi.; railways open to traffic (1947) 27,180 mi.; airways (1946–47), distance flown (internal) 24,485,000 mi., (external) 6,154,000 mi.; mails carried (internal) 941,301 lb., (external) 628,218 lb.; motor vehicle registrations (June 30, 1947): cars 550,409, commercial vehicles 376,320, cycles 86,636; wireless receiving set licences 1,771,247; telephones, number of lines, 647,846; instruments connected, 855,917.

**Agriculture, Manufacturing, Mineral Production.**—Production (in short tons): wool (1946–47) 491,895; wheat (1946–47) 3,517,860; oats (1946–47) 311,300; barley (1946–47) 289,925; maize (1946–47) 161,589; cane sugar (1946–47) 618,240; butter (1946–47) 160,508; cheese (1946–47) 47,150; gold (1946) 824,480 fine oz.; coal (1946) 15,551,000; pig iron (1946) 1,276,000; copper (1946) 25,378; lead (1946) 153,954; tin (1946) 2,492; zinc (1946) 85,474; silver (1946) 6,182,760 oz. Total value of production (1945–46): agricultural, pastoral and dairying £A251,679,000; mineral £A26,288,000; manufacturing £A354,479,000. Labour and employment: employment in factories (1937–39 = 1,000) (Aug. 1947) 1,533; number (Aug. 1947) 805,800; unemployment (trade union returns) (Aug. 1947) 1.1%. Total output of factories (1945–46) £A869,803,000.

(R. Wn.)

## Austria.

A republic of central Europe. Area: approx. 32,000 sq.mi.; pop. (1939) 6,650,000, of whom more than 90% were Roman Catholics. Chief cities (pop. 1939): Vienna (cap., 1,918,462); Graz (210,175); Linz (131,423); Salzburg (79,264); Innsbruck (80,084). President of the republic: Karl Renner; chancellor: Leopold Figl.

**History.**—In Jan. 1947 the Four Power talks began in London on the Austrian treaty. An Austrian delegation composed of Chancellor Figl, Foreign Minister Karl Gruber and the minister of economics, Dr. Peter Krauland, went to London to ask for full implementation of the Moscow decisions of Nov. 1943 concerning Austrian independence and the integrity of the 1938 Austrian frontiers. These talks did not lead to any definite results; the U.S.S.R. objected to the U.S. and British views on German assets in Austria, which it estimated much higher than did the western Allies. The U.S.S.R. also indicated that it would support Yugoslav territorial claims on the southern frontier districts of Carinthia, which the western powers strongly opposed. Subsequent Four Power talks took place in April in Moscow, and again in London in October, but on neither occasion was any agreement reached on any essential points. A new invitation for the next meeting in London on Nov. 25 was addressed to Dr. Gruber, who had then a new opportunity to reiterate his country's point of view, but again there was a deadlock over the question of German assets, and no solution was reached.

The lack of any essential agreement among the Four Powers largely determined internal developments. The hopes of the Austrian government of seeing an end, or at least a reduction, of the Allied occupation in Austria, which was economically a hard burden on the country and politically an obstacle to the achievement of full national independence, came no nearer to realization. The economic situation still suffered greatly from the division of the country into four zones, as well as from the obstacles put in the way of a regular trade with Austria's eastern neighbours Hungary and Yugoslavia. At the end of 1947, the daily individual food ration of Austrians amounted to 1,600 calories, and the efforts of the federal government were directed towards an increase to 1,800 calories. The federal government also applied to the Allied control commission for repeal of Allied military law over Austrian civilians. It argued that the Allied control agreement of June 28, 1946, foresaw the transfer of certain cases to the ordinary Austrian courts; yet in two notable instances in September, on the occasion of a demonstration in Ischl against Jewish displaced persons from Hungary and Rumania, whose presence gravely increased the local food difficulties, and in the case of two policemen in lower Austria who wounded a soviet soldier, allegedly drunk and disorderly, military courts gave verdicts which Dr. Figl judged too severe, if not entirely unjust.

On the other hand, a few friendly Allied gestures caused great satisfaction. The U.S. high commissioner, General Geoffrey Keyes, ordered the cessation of telephone and telegraph censorship in the U.S. zone as from Nov. 10. Great Britain restored the state of peace with Austria on Sept. 16, and Lord Pakenham, in the name of the British government, addressed a friendly telegram to Dr. Figl on this occasion. Among other improvements, Austrian prisoners of war detained in the U.S. and British zones in Germany were repatriated in great numbers, and the repatriation of Austrian prisoners of war in the U.S.S.R. or in soviet-occupied territories also began. On the coming into force of the Italian peace treaty, normal diplomatic relations were established with Italy, and on this occasion the importance of the Austro-Italian agreement of Sept. 5, 1946, concerning the minority rights of the population of South Tyrol (which was added as annex No. 4 to the peace treaty), was officially reiterated. In a speech at Innsbruck on Sept. 21, much commented on, President Renner emphasized that Austria would never renounce her rights in the South Tyrol and developed the idea of an east-west corridor in Europe, consisting of Switzerland and Austria, adding that such a neutral corridor could have prevented the formation of the Rome-Berlin axis before 1938 and could now be a "useful bridge between east and west Europe." This speech seemed to contain the essence and the constructive outline of Austrian diplomacy. Trade with western Europe was reopened, an Anglo-Austrian chamber of commerce was constituted, and the first postwar Vienna Fair was held in September with considerable success.

In internal politics the most significant crisis came to a head at the end of August. The director of the Vienna police, Dr. Klauser, who owed his position to the support of the soviet occupation authorities, was replaced by the federal government by the Social Democrat councillor, Yoseph Holaubeck, hitherto chief of the fire services of Vienna. Other appointments aiming at strengthening the federal authority over the administration and especially the police force took place, but some of them concerning the districts in the soviet zone could not be put into effect owing to the opposition of the occupying authority.

SOME OF VIENNA'S OLDEST TREES were being cut down for firewood in 1947 to alleviate a severe coal shortage during the winter months. Workmen are shown sawing a fallen log in the park before the *Rathaus*

The political situation was still characterized by the coalition of the Social Democrats and the Christian Democratic People's party represented respectively by President Renner and Dr. Figl. (*See* also OCCUPIED AREAS, ADMINISTRATION OF.) (B. ME.)

**Autobiography:** *see* AMERICAN LITERATURE; etc.
**Automobile:** *see* AUTOMOBILE INDUSTRY; MOTOR TRANSPORTATION.
**Automobile Accidents:** *see* ACCIDENTS; INSURANCE.

## Automobile Industry.

New records were established in the production of motor trucks, motor buses and automotive replacement parts in the U.S. in 1947, even though the output of passenger cars was surpassed by nine prewar years. Total employment and pay rolls of motor vehicle, parts and accessory manufacturing plants surpassed all previous high marks. The registrations of passenger cars, trucks and buses likewise chalked up a new high mark, as did the aggregate of vehicle miles driven and the total of special motor vehicle taxes. Motor truck production of 1,219,446 units in 1947 surpassed the preceding peak year, 1941 by 16% and 1946 by 31%.

Passenger car production, hampered by the shortage of sheet steel to a relatively greater degree than truck output, reached a total of 3,558,118 units, which was 5% lower than 1941 but 66% greater than 1946. The output of motor coaches, exclusive of school buses, equalled 18,835 units, a new high record.

Factory sales to the U.S. domestic market during 1947 were

3,297,247 passenger cars, 970,416 motor trucks and 16,383 motor coaches. Compared with factory sales to the domestic market in 1946, there occurred an increase of 64% in passenger cars, 30% in trucks and 76% in coaches.

Factory sales to foreign markets in 1947 likewise reflected gains over 1946. Passenger car exports of 260,871 gained 81%, motor truck exports of 249,030 increased 33% and motor coaches shipped abroad of 2,452 gained 201%. In the latter half of 1947 several countries imposed restrictions on importation of motor vehicles from the U.S., due to shortages in dollar balances for payments. However, the total volume of vehicle exports was not greatly affected because the world demand for motor transportation was so large that the curtailment or embargo by some countries was soon absorbed by other countries with adequate means of payment. As in the domestic market, the demand for vehicles was greater than the supply, so that the cessation of demand from certain markets was compensated by a corresponding increase in allocation of vehicles to other markets that stood ready to absorb them.

**Table I.**—*Motor Vehicle Factory Sales From Plants Located in United States, 1947*

| | Passenger Cars | Motor Trucks | Motor Coaches | Total |
|---|---|---|---|---|
| Jan. | 246,605 | 99,818 | 1,273 | 347,696 |
| Feb. | 267,015 | 105,042 | 1,303 | 373,360 |
| March | 301,525 | 118,234 | 1,421 | 421,180 |
| April | 314,765 | 106,984 | 1,650 | 423,399 |
| May | 284,357 | 96,430 | 1,853 | 382,640 |
| June | 307,124 | 91,620 | 1,628 | 400,372 |
| July | 279,631 | 97,755 | 1,806 | 379,192 |
| Aug. | 261,158 | 86,486 | 1,765 | 349,409 |
| Sept. | 307,942 | 110,720 | 1,608 | 420,270 |
| Oct. | 315,969 | 118,365 | 1,667 | 436,001 |
| Nov. | 305,148 | 87,611 | 1,417 | 394,176 |
| Dec. | 366,879 | 100,381 | 1,444 | 468,704 |
| | 3,558,118 | 1,219,446 | 18,835 | 4,796,399 |

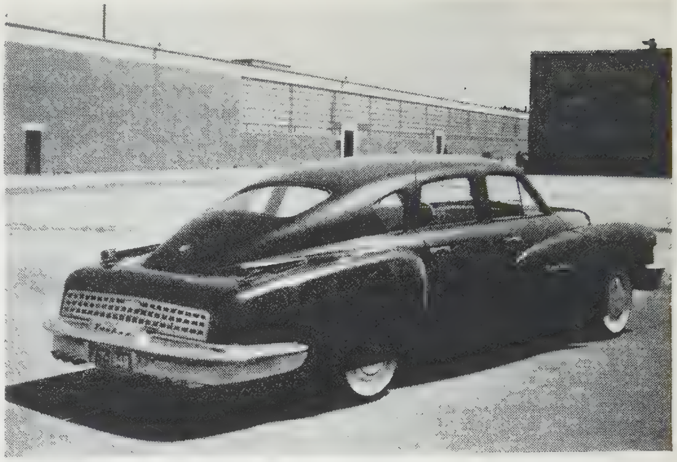
Source: Automobile Manufacturers Association.

**Table II.**—*Factory Sales to U.S. Domestic and Export Markets, 1947*

| | Passenger Cars | | Motor Trucks | | Motor Coaches | |
|---|---|---|---|---|---|---|
| | Domestic | Foreign | Domestic | Foreign | Domestic | Foreign |
| Jan. | 226,695 | 19,910 | 77,434 | 22,384 | 1,115 | 158 |
| Feb. | 245,081 | 21,934 | 83,276 | 21,766 | 1,090 | 213 |
| March | 280,018 | 21,507 | 92,082 | 26,152 | 1,272 | 149 |
| April | 291,953 | 22,812 | 83,515 | 23,469 | 1,465 | 185 |
| May | 261,240 | 23,117 | 75,696 | 20,734 | 1,599 | 254 |
| June | 284,576 | 22,548 | 73,613 | 18,007 | 1,409 | 219 |
| July | 257,881 | 21,750 | 78,444 | 19,311 | 1,694 | 112 |
| Aug. | 240,358 | 20,800 | 66,382 | 20,104 | 1,570 | 195 |
| Sept. | 285,590 | 22,352 | 89,724 | 20,996 | 1,413 | 195 |
| Oct. | 295,099 | 20,870 | 94,307 | 24,058 | 1,527 | 140 |
| Nov. | 284,730 | 20,418 | 71,161 | 16,450 | 1,142 | 275 |
| Dec. | 344,026 | 22,853 | 84,782 | 15,599 | 1,087 | 357 |
| | 3,297,247 | 260,871 | 970,416 | 249,030 | 16,383 | 2,452 |

Source: Automobile Manufacturers Association.

The trend in demand for heavier or larger trucks as measured by gross vehicle weight, is reflected in the figures for 1947 as compared with 1946, shown in Table III. In 1947 factory sales of trucks with a g.v.w. rating of 16,000 lb. and over comprised 9% of total compared with 6.7% in 1946. Although comparable classifications of truck factory sales were not available in prewar years because manufacturers then rated trucks on a carrying-capacity basis, truck factory sales in 1940 with a rated capacity of 2½ tons and over, roughly comparable with the present grouping above 16,000 lb. g.v.w., represented only 4.9% of total factory sales that year.


THE REAR-ENGINED TUCKER '48, which was previewed in Chicago, Ill., during the summer of 1947

The record demand for replacement parts continued throughout the year 1947, when an aggregate of $2,352,000,000 worth of parts was produced, surpassing the prior record year 1946 by 34% and the highest prewar year 1941 by 227%. When production of new cars, trucks and buses was either sharply curtailed or entirely discontinued at the beginning of 1942, owners of motor vehicles began the practice of maintaining their vehicles in better condition by replacing worn out or broken parts, with the result that the total volume of replacement parts produced kept on increasing throughout the war period. Since production of new civilian vehicles could not catch up with the tremendous accumulated demand accruing during the war period, owners of old cars continued the practice of repairing their vehicles until they could purchase new ones. The demand for new vehicles continued to surpass the supply by a very wide margin, so that the demand for replacement parts for the old vehicles in use continued unabated.

**Table III.**—*Motor Truck Factory Sales by Gross Vehicle Weight* From Plants Located in United States*

| | 1946 (1st 11 Mo.) | | 1947 (1st 11 Mo.) | |
|---|---|---|---|---|
| G. V. W. in Lb. | Units | Per Cent | Units | Per Cent |
| 5,000 and less | 299,804 | 36.4 | 341,641 | 30.5 |
| 5,001 to 10,000 | 74,846 | 9.1 | 165,170 | 14.7 |
| 10,001 to 14,000 | 232,399 | 28.3 | 249,324 | 22.3 |
| 14,001 to 16,000 | 160,665 | 19.5 | 262,196 | 23.5 |
| 16,001 to 19,500 | 21,254 | 2.6 | 37,277 | 3.3 |
| 19,501 to 26,000 | 21,998 | 2.6 | 39,109 | 3.5 |
| 26,001 and over | 12,178 | 1.5 | 24,348 | 2.2 |
| Total | 823,144 | 100.0 | 1,119,065 | 100.0 |

*Gross vehicle weight includes weight of the truck and the maximum load.

Due to the hundreds of thousands of different kinds of parts used in the production of the various annual models for the previous 15 years and other complications, there were no figures available on the physical number of units produced but it was possible to obtain approximate figures on the aggregate dollar volume of replacement parts and accessories sold at wholesale prices in the industry by months, as well as annual totals:

**Table IV.**—*Wholesale Value of Automotive Replacement Parts and Accessories Sales to U.S. Domestic Market*

(In thousands of dollars)

| | 1941 | 1946 | 1947 |
|---|---|---|---|
| Jan. | $51,337 | $127,252 | $181,119 |
| Feb. | 51,548 | 131,824 | 201,061 |
| March | 52,104 | 141,749 | 194,672 |
| April | 43,061 | 108,620 | 178,324 |
| May | 54,603 | 146,115 | 212,623 |
| June | 67,171 | 130,411 | 175,731 |
| July | 56,704 | 118,871 | 184,101 |
| Aug. | 72,249 | 175,003 | 256,836 |
| Sept. | 74,019 | 145,877 | 198,352 |
| Oct. | 72,960 | 195,722 | |
| Nov. | 70,519 | 150,221 | 570,000* |
| Dec. | 51,937 | 181,252 | |
| Total | $718,212 | $1,752,917 | $2,352,819 |

Source: Automobile Manufacturers Association.
*Includes October, November and December.

Employment in the production of motor vehicles and parts and other products produced by motor vehicle and parts factories during 1947 was 19% higher than the average for 1946 and 37% higher than the average for 1941. The average number of production workers in the year 1947 was 786,000, as compared with 661,000 in 1946 and 570,000 in 1941. When salaried workers are added to the total production workers, average employment in 1947 was approximately 965,000 as compared with 819,000 in 1946 and 654,000 in 1941.

Table V.—*Employment in Motor Vehicle and Parts Manufacturing Industry*
(Number of Production Workers—in thousands)

| | 1941 | 1946 | 1947 |
|---|---|---|---|
| Jan. | 559 | 431 | 755 |
| Feb. | 569 | 430 | 791 |
| March | 579 | 464 | 798 |
| April | 586 | 646 | 807 |
| May | 597 | 675 | 751 |
| June | 604 | 693 | 789 |
| July | 570 | 725 | 785 |
| Aug. | 497 | 755 | 772 |
| Sept. | 560 | 788 | 798 |
| Oct. | 583 | 774 | 795 |
| Nov. | 592 | 778 | 796* |
| Dec. | 544 | 774 | 796* |
| Average | 570 | 661 | 786 |

*Estimated by A.M.A.
Source: Bureau of labour statistics.

Average weekly pay rolls of production workers in the industry during 1947 varied from a low of $40,000,000 in January to $47,682,000 in Oct. 1947, the latest figures available. The October average weekly pay roll was more than double the average pay roll in 1941 and 45% higher than the average weekly pay roll in 1946. The aggregate pay roll for production workers in the motor vehicle and parts industry in 1947 was approximately $2,300,000,000, as compared with $1,713,000,000 in 1946 and $1,346,000,000 in 1941.

**Registrations.**—According to preliminary figures issued by the U.S. Public Roads administration, the total registrations of passenger cars at the end of 1947 were 30,545,000, as compared with 28,100,188 at the end of 1946 and 29,418,313 at the end of 1941, which was the peak year prior to 1947. The number of cars in use increased 9% over 1946 and 3.5% over 1941.

Motor truck registrations at the end of 1947 were estimated at 6,492,000, compared with 5,725,692 at the end of 1946 and 4,876,054 at the end of 1941. The 1947 figures reflected an increase of 13% over 1946 and 34% over 1941. The total number of buses registered was estimated at 127,405, as against 119,937 in 1946 and 88,800 in 1941. This showed an increase of 6% over 1946 and 44% over 1941.

Total registrations of motor vehicles in the U.S. as compiled by the U.S. Public Roads administration are shown in Table VI.

Table VI.—*Registrations of Motor Vehicles in the United States*

| | Passenger Cars* | Trucks | Total |
|---|---|---|---|
| 1941 | 29,507,113 | 4,876,054 | 34,383,167 |
| 1942 | 27,974,156 | 4,608,086 | 32,582,242 |
| 1943 | 26,019,432 | 4,480,176 | 30,499,608 |
| 1944 | 25,572,849 | 4,513,340 | 30,086,189 |
| 1945 | 25,803,687 | 4,834,742 | 30,638,429 |
| 1946 | 28,220,125 | 5,725,692 | 33,945,817 |
| 1947† | 30,672,405 | 6,492,000 | 37,164,405 |

*Includes buses. †Estimated.

Motor vehicle owners paid out more taxes in 1947 for the purchase of new vehicles and the operation of their vehicles than in any previous year in the history of the industry. They paid a total of $2,914,000,000, consisting of $602,000,000 in state registration fees, $1,178,000,000 in state gasoline taxes, $1,039,000,000 in federal excise taxes on purchases of new vehicles and parts and gasoline and lubricating oil, and $95,000,000 in tolls and local taxes. During 1946, which was the highest previous total for motor vehicle owners' special taxes, an aggregate of $2,507,000,000 was paid by the highway users. In 1941, $2,147,000,000 in special motor vehicle taxes was paid by highway users.

The increase in tax collections from motor vehicle users in 1947 was due to two factors, (a) the increased registration of motor vehicles, and (b) an increase in the aggregate vehicle miles travelled, which set a new high mark of 370,000,000,000 vehicle miles, as compared with 333,400,000,000 vehicle miles in 1941.

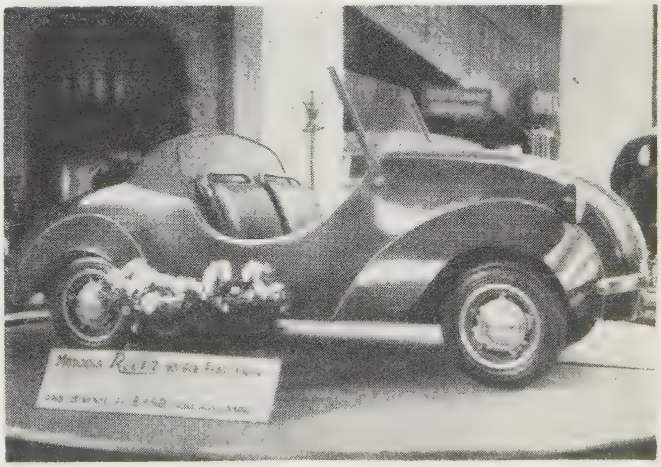
Instalment credit outstanding at the end of Oct. 1947 amounted to $1,050,000,000, as compared with $544,000,000 at the end of 1946, $227,000,000 at the end of 1945, $200,000,000 at the end of 1944, $175,000,000 at the end of 1943, $482,000,000 at the end of 1942, and $1,942,000,000 at the end of 1941, which was the peak reached in prewar years. It will be noted that the total automobile instalment credit outstanding at the end of Oct. 1947, the latest available figure, was only 54% of the 1941 total.

Due to the pressures of higher manufacturing costs, wholesale prices of new passenger cars and new trucks continued to increase in 1947. Higher wage rates granted because of increased cost of living, not only for workers in the motor vehicle factories but also for workers in plants supplying raw materials and finished and semifinished parts, caused prices of materials, parts and services purchased by motor vehicle factories to increase at approximately the same rate as in the products produced by motor vehicle plants. According to the price indexes compiled by the U.S. bureau of labour statistics on a monthly basis, the prices of new passenger cars sold in October were 12% higher than in Oct. 1946, and 43% higher than in Dec. 1941. Prices of new trucks sold in October were 12% higher than in Oct. 1946 and 42% higher than in Dec. 1941.

A survey issued by R. L. Polk and Company at the beginning of 1947 giving data as of July 1, 1946, showed the average age of passenger cars in use on July 1, 1946, to be nine years. This compares with an average age of 7.3 years as of July 1, 1944, and 5.5 years of age on July 1, 1941. Data for prior years indicate that the weighted average age of all vehicles in use maintained itself around 5.5 years of age.

A survey completed by the Automobile Manufacturers association in 1947 indicated that 8,200,000 persons were directly or indirectly employed in highway transportation industries. Of these, 1,741,000 were employed in the manufacture of motor vehicles, parts and accessories, tires, batteries and raw materials used in their manufacture, approximately 1,310,000 were employed in the sales and servicing of motor vehicles and parts, 4,753,000 individuals were employed as truck drivers or in the operation of trucking concerns, 203,400 were employed as bus drivers or in the operation of bus transportation companies, while 191,300 were employed in construction and maintenance of federal and state highways, not including construction and maintenance of local roads and streets. This figure of 8,200,000 represents one out of each seven persons gainfully employed in the U.S.

**Canada.**—Production of passenger cars in Canada during 1947 totalled 164,822 units, as compared with 91,871 in 1946. 1947 was exceeded only by the years 1929 when 203,307 passen-



ROVIN flat-twin car, a French model exhibited at the 1947 automobile show in Geneva, Switzerland

Table VII.—*Factory Shipments from Plants Located in Canada*

Passenger Cars

| 1947 | Domestic Market | Export | Total |
|---|---|---|---|
| Jan.* | 8,073 | 3,343 | 11,416 |
| Feb.* | 9,012 | 4,538 | 13,550 |
| March* | 9,176 | 4,751 | 13,927 |
| April* | 9,684 | 3,567 | 13,251 |
| May | 10,062 | 2,838 | 12,900 |
| June | 11,445 | 3,020 | 14,465 |
| July | 11,352 | 2,745 | 14,097 |
| Aug. | 8,755 | 1,534 | 10,289 |
| Sept. | 12,522 | 3,099 | 15,621 |
| Oct. | 12,652 | 3,510 | 16,162 |
| Nov. | 12,932 | 3,212 | 16,144 |
| Dec.† | 10,400 | 2,600 | 13,000 |
| Year 1947 | 126,065 | 38,757 | 164,822 |

*Production. †Estimated by A.M.A.

Motor Trucks

| 1947 | Domestic Market | Export | Total |
|---|---|---|---|
| Jan.* | 4,519 | 3,048 | 7,567 |
| Feb.* | 4,531 | 2,666 | 7,197 |
| March* | 5,225 | 2,602 | 7,827 |
| April* | 5,938 | 3,166 | 9,104 |
| May | 5,246 | 3,460 | 8,706 |
| June | 4,439 | 2,160 | 6,599 |
| July | 5,377 | 2,366 | 7,743 |
| Aug. | 4,246 | 1,051 | 5,297 |
| Sept. | 6,123 | 2,381 | 8,504 |
| Oct. | 6,918 | 2,326 | 9,244 |
| Nov. | 4,418 | 2,593 | 7,011 |
| Dec.† | 3,700 | 2,000 | 5,700 |
| Year 1947 | 60,680 | 29,819 | 90,499 |

*Production. †Estimated by A.M.A.

Note: The above table excludes motor coaches or buses from both the passenger car and motor truck sections. In addition to the motor trucks and passenger cars produced and exported as shown above, Canadian plants produced an estimated 863 buses for the Canadian domestic market and 33 units for export, or a combined total of 896 buses.

ger cars were produced, 1928 with 197,848, and 1926 when 166,887 units were turned out.

Of the 164,822 units produced in 1947, 38,757 were produced for export. Nearly 23% of the units produced were produced for export.

More motor trucks were produced in Canada in 1947, with 90,499 units, than in any peacetime year in the history of the industry. Of this total, 29,819 were produced for shipment to other countries. This was 33% of the production. During the war a greater number of military trucks were produced than the 90,499 turned out in 1947.

Monthly production for Canadian domestic market and for exports are shown for passenger cars and trucks separately in Table VII.

No estimates were available on total registrations in Canada at the end of 1947, but the total registrations of passenger cars at the end of 1946 were 1,234,006 and motor trucks 371,294, or a combined total of 1,605,300.

**Great Britain.**—Production of motor vehicles for the full calendar year 1947 was not available on an estimated basis, and hence figures for the first ten months of the year are shown in Table VIII.

Table VIII.—*Motor Vehicle Production and Exports in Great Britain*

| Production | Passenger Cars | Commercial Vehicles | Total |
|---|---|---|---|
| First 10 mo. 1947 | 238,365 | 124,801 | 363,166 |
| First 10 mo. 1946 | 166,311 | 113,310 | 279,621 |
| Exports | | | |
| First 10 mo. 1947 | 124,341 | 39,354 | 163,695 |
| First 10 mo. 1946 | 76,221 | 39,598 | 115,819 |
| Per Cent Exported | | | |
| First 10 mo. 1947 | 52.1 | 31.5 | 45.0 |
| First 10 mo. 1946 | 45.9 | 35.0 | 41.5 |

Production of passenger cars in Great Britain during the first ten months of 1947 increased 44% over the corresponding period of 1946, while exports of passenger cars gained 63% during the same period. Motor truck production in the first ten months of 1947 gained only 10% over the previous year, while exports of trucks actually showed a slight decline.

The proportion of passenger cars exported in 1947 was 52.1% of total production, as compared with 45.9% in 1946. The 31.5% of truck production exported represented a decrease from 35.0% trucks exported in 1946. (*See* also BUSINESS REVIEW.)

(O. P. P.)

**Automobile Insurance:** *see* INSURANCE.

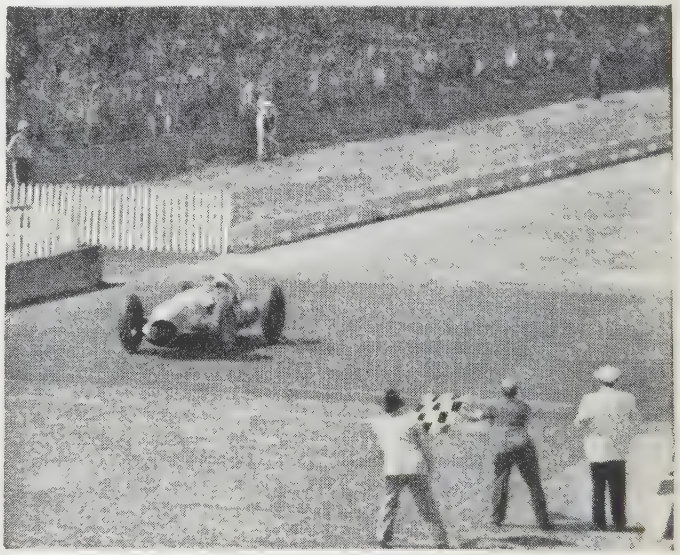
## Automobile Racing.

Mauri Rose, veteran speed-race auto driver from Chicago, Ill., won the annual 500-mi. Indianapolis speedway classic, driving a Blue Crown Sparkplug Special, in 4 hr. 17 min. 52.17 sec. Bill Holland, of Bridgeport, Conn., in the same racing equipment, was second in 4 hr. 18 min. 24.29 sec. Rose averaged 116.338 m.p.h. while Holland's speed was 116.097 m.p.h. Third place was captured by Ted Horn of Paterson, N.J., driving a Bennett Brothers Special.

The classic also resulted in the death of Shorty Cantlon of Indianapolis, Ind., who crashed into a wall.

Rose made a spectacular triumph, drawing up from 14th place to battle for more than 100 mi. with Holland; 50 mi. of this nip-and-tuck struggle kept the decision constantly in the balance.

A crowd of 168,000 persons saw the Indianapolis classic.



MAURI ROSE, winner of the 1947 Memorial day classic at Indianapolis, Ind., is shown at the finish line after covering the 500-mi. run in 4 hr. 17 min. 52.17 sec.

The Atlantic states ten-mile championship at Kingsbridge armory in New York city was won by Ed Schaeffer of Floral Park, L.I. Charles Miller of Linden, N.J., was second in this midget event. Jeep Colkitt of Paterson, N.J., was third.

The American Automobile Association George Robson memorial 100-mi. auto race was won for the second straight year by Tony Bettenhausen of Tinley Park, Ill. He drove a Belanger Special powered by a four-cylinder Offenhauser engine. His time was 1 hr. 14 min. 56.54 sec. He bettered his own 1946 time by three minutes. Ted Horn was second, half a lap off the pace. Charles Van Acker of South Bend, Ind., was third.

(T. J. D.)

## Aviation, Civil.

**Scheduled Air Transport.**—International carriers, with approximately 500,000 employees and 2,000 aircraft, were operating about 500,000 mi. of routes during 1947. For the year ending June 30, 934,799 passengers entered U.S. territory by air and approximately one-third of all visitors to Britain during 1947 arrived by aircraft. Between January and June, 80,108 persons moved on the 3,361 flights linking New York and Europe. Sleeper planes appeared on Atlantic routes for the first time after World War II, and additional all-cargo flights indicated the growing importance of cargo.

At the close of its first year of operation on July 31, British European Airways' routes covered some 17,035 mi. During that period, B.E.A. in all services operated 35,933 flights 7,399,206 aeroplane miles, carried 269,678 passengers 73,689,920 passenger miles, 2,670,800 lb. of freight and 2,239,600 lb. of mail. In addition, B.E.A. participated in air transportation through partial ownership of air lines in Cyprus, Gibraltar, Greece, Eire and Italy. Plans for a separate air cargo division were abandoned, but all-cargo planes were put into operation and exclusive mail-freight flights were begun to the continent. Remaining priorities were abolished on nearly all routes.

British South American Airways inaugurated service to the west coast of South America and awaited U.S. approval of a Miami-Jamaica route. In its first year of operation ending June 30, B.S.A.A. carried 8,865 passengers, and flew 687,684 mail ton miles and 1,338,202 freight ton miles.

British Overseas Airways corporation supplemented its Atlantic services with its first commercial operation between England and Canada and began the first commercial service to Ceylon from the west. B.O.A.C.'s latest report, covering the year ending March 31, showed total traffic of 129,928 passengers, 276,000,000 passenger miles, and 3,598,384 freight ton miles.

Of the three British air lines, only B.S.A.A. claimed profitable operations; B.E.A. and B.O.A.C. reported heavy losses. Government financial restrictions on pleasure travel outside the British Isles imposed Oct. 1 were a further blow to B.E.A.

U.S. international air routes increased from 175,488 mi. to 178,768 mi. Service was inaugurated over many routes previously authorized and increased on routes already operating. Pan American Airways inaugurated service on its around-the-world route and to South Africa; Northwest Airlines began operations between the U.S. and Asia; Trans World extended its Atlantic route to Bombay; and United Air Lines started California-Hawaii service.

International U.S. air lines carried an estimated 1,500,000 passengers, an increase of 44% over 1946. Freight and express ton miles increased from 15,092,127 to approximately 39,312,300, and revenue passenger miles rose some 70% to nearly 1,900,000,000. The international air fleet grew from 150 to 168 planes. Passenger fatalities per 100,000,000 passenger miles dropped from 3.5 to 1.1.

Comparable growth was registered by other international carriers. The routes of Air France became the most extensive in the world except for those of Pan American. New services linked France with the French West Indies and Shanghai, China, and joined French possessions in the Indian ocean with Africa. S.A.B.E.N.A. (Société Anonyme Belge d'Exploitation de la Navigation Aérienne), the Belgian company, began North Atlantic service, bringing the total number of operators linking Europe and the Americas to 13.

Swissair and China National Aviation corporation received authority to operate from their respective countries to the U.S. and planned early inauguration of service. Australian National Airways, as contractor for the government-controlled British Commonwealth Pacific Airlines, began scheduled service connecting Australia and New Zealand with the U.S. Iberia, the Spanish air line, joined operators across the South Atlantic; Philippine Air Lines extended its service to the U.S. and China; Peruvian International Airways spread from New York to Chile. Countries in the Russian orbit also expanded their international services, a few extending to western Europe. Czechoslovakian Airlines (Ceskoslovenske Aerolinie) reached London and Finnish Air Lines (Aero O/Y) began service to Stockholm.

In internal operations, B.E.A. began domestic service, nearly completing nationalization of scheduled British services. Elsewhere in Europe, services were increased. Russia claimed the largest network of internal routes in the world, but lack of reliable information made appraisal of Russian operations impossible.

Australian internal services had their biggest year, with cargo showing the greatest increase. Although Trans-Australia Airlines, the government air line, displayed rapid growth, it still was receiving a smaller share of traffic, both on the basis of total operations and of services over competitive routes, than its largest privately-owned competitor. In Australia, as in the U.S. and Canada, passenger fares were increased, but fares in the three countries remained among the lowest in the world.

Table I.—*Selected Statistics for Australian Air Carriers**
(Twelve months ending Sept. 30)

| | 1947 | 1946 |
|---|---|---|
| Miles flown | 25,704,023 | 17,542,425 |
| Passengers carried | 951,275 | 556,707 |
| Passenger miles flown | 408,946,193 | 242,883,852 |
| Mail (ton miles) | 623,023 | 862,701 |
| Freight (ton miles) | 7,388,594 | 2,982,810 |
| Passenger load factor (%) | 65.5 | 78.1 |

Source: Australian Department of Civil Aviation.
*Includes all regular internal air transport services.

Growth was likewise registered by Canada's internal operators. Trans-Canada Air Lines added more than 1,200 mi. of routes and shortened its transcontinental operation with a cutoff across the U.S. T.C.A. in domestic services carried an estimated 440,000 passengers, 2,500,000 lb. of mail, and 1,500,000 lb. of cargo. Despite increased revenues, greater expenses resulted in financial losses for the year. Canadian Pacific Air Lines began withdrawing from "bush" operations in line with government policy favouring reservation of such services for small operators. However, its regular feeder operations showed traffic gains and new services were begun.

Table II.—*Selected Statistics for Canadian Air Carriers**
(Eight months ending Aug. 31)

| | 1947 | 1946 |
|---|---|---|
| Passengers carried | 490,597 | 409,480 |
| Passenger miles flown | 159,752,678 | 131,375,688 |
| Mail (ton miles) | 983,860 | 982,012 |
| Goods (ton miles) | 2,317,074 | 1,457,821 |

Source: Dominion Bureau of Statistics; Air Transport Board.
*Includes all operations of scheduled and nonscheduled carriers.

Additional authorizations, consisting primarily of service to smaller localities and new competitive routes between points already served, raised total U.S. domestic route mileage from 84,358 to more than 110,000. Feeder authorizations increased from about 11,500 mi. to nearly 21,000 mi. Approximately half of the feeder carriers had begun operations. An entirely new type of service was authorized with Civil Aeronautics board certification of Air Commuting, Inc., to operate a commuter's service between outlying communities and seaplane bases on the East river near lower Manhattan in New York city.

Revenue passengers carried by U.S. domestic lines rose approximately 7.7% to more than 13,000,000 and revenue passenger miles totalled an estimated 6,284,759,000, a gain of 5.6%. Feeder operators were judged to have accounted for about 246,000 revenue passengers and 49,000,000 revenue passenger miles of the total. Mail dropped a little less than 1% to approximately 32,750,000 ton miles. Aircraft utilized in domestic services grew from 659 to 793, and available seat miles were up 28% to nearly 10,000,000,000. The revenue passenger load factor decreased from 78% to an estimated 64%.

The most outstanding growth in certificated air-line traffic was in cargo transportation. Air express increased 26% to about 30,000,000 ton miles. Air freight showed an even more startling growth. Sharp reductions in rates, additional all-cargo planes, and greater emphasis on cargo development raised air freight to

THE "REYNOLDS BOMBSHELL," piloted by Capt. William P. Odom, as it landed at La Guardia field, N.Y., on April 16, 1947, after setting an unofficial round-the-world speed record of 78 hr. 55 min. 58 sec.

Table III.—*Selected Traffic Statistics for U.S. Domestic Scheduled Air Carriers**

(Twelve months ending Sept. 30)

| | 1947 | 1946 |
|---|---|---|
| Revenue miles flown | 314,298,492 | 282,800,657 |
| Revenue passenger miles | 6,102,407,000 | 5,324,278,000 |
| Mail (ton miles) | 32,318,245 | 38,903,942 |
| Express (ton miles) | 28,834,639 | 19,313,528 |
| Freight (ton miles) | 27,360,128 | 8,403,807 |
| Revenue passenger load factor (%) | 67.72 | 83.45 |

Source: U.S. Civil Aeronautics board.

*Includes the 16 domestic trunk line carriers but does not include scheduled feeder carriers.

nearly 41,000,000 ton miles, a growth of 111% over 1946.

The certificated carriers joined in activating Air Cargo, Inc., as their co-operative ground-service organization for freight, published a consolidated tariff showing rates for all lines, set up a consolidated air freight terminal at Detroit, Mich., and began working out arrangements with motor carriers to tap traffic at off-air-line points.

Table IV.—*Selected Revenue Statistics for U.S. Domestic Scheduled Air Carriers**

(Twelve months ending Sept. 30)

| | 1947 | 1946 |
|---|---|---|
| Operating Revenue: | | |
| Passenger | $297,243,726 | $247,695,565 |
| Mail | 23,232,944 | 21,462,840 |
| Express | 11,270,148 | 7,594,955 |
| Freight | 7,011,333 | 2,523,234 |
| All other | 7,431,509 | 4,446,964 |
| Total | $346,189,660 | $283,723,558 |
| Operating expenses | 366,417,334 | 278,351,760 |
| Net operating income | 20,227,674† | 5,371,798 |

Source: U.S. Civil Aeronautics Board.

*Includes the 16 domestic trunk line carriers but does not include scheduled feeder carriers.

†Denotes deficit.

Notwithstanding the heaviest traffic and greatest gross revenues ever experienced, conditions such as lower load factors, expensive financing of large new equipment, and generally increased costs resulted in net operating losses for the first 11 months of approximately $15,000,000. While only five fatal crashes occurred on certificated routes, the greater number of passengers killed raised the passenger fatality rate, according to CAA estimates, from 1.2 to 3.4 per 100,000,000 passenger miles flown.

**Noncertificated and Charter Services.**—CAB action establishing two classes of noncertificated carriers clarified the status of the U.S. operators commonly known as nonscheduled carriers. The first class, designated as noncertificated air cargo carriers, was authorized to engage in scheduled, common-carrier transportation of property only. The second, termed irregular air carriers, was permitted to transport persons and property in services not involving regularity of routes or schedules. However, foreign air transportation of passengers by the latter class was prohibited. Indicating the scope of noncertificated operations was a Civil Aeronautics administration report that on Oct. 1 approximately 2,000 noncertificated firms operating 4,439 planes and employing 8,488 pilots had received approval required by the safety regulations and that about 200 new applications were being received each month.

Despite intensified development of cargo services by the certificated lines, noncertificated operators retained their position as the largest carriers of freight. Like the certificated air lines, noncertificated carriers registered substantial gains; 6 of the largest among the 14 companies in this class reported 35,514,000 ton miles for the first 10 months of 1947 as against 26,321,000 ton miles for all of 1946. Rates of these carriers dropped as low as 12 cents a ton mile, and the number of aircraft owned in the large transport category exceeded 50.

British charter operators also had their biggest year. By summer, the British Air Charter association, at the close of its first year, had some 40 members. To maintain high standards of service, the association promulgated its own safety requirements, with which all members were required to comply.

Skyways, Ltd., reported to be the largest charter operator in Europe, with an organization of about 1,600 employees and a large fleet of transport planes, during a single week in October operated 59 flights approximately 71,000 aeroplane miles. The charter division of Airwork, Ltd., another large operator, in September flew 55,320 aircraft miles and 1,075,555 passenger miles. London Aero Motor Services, Ltd., reportedly the largest European freight carrier, and Sky Taxi's of South Africa jointly created a charter concern with operating companies in England, Africa and Australia.

Nonscheduled carriers were equally active throughout the remainder of the world. In Canada, during the first eight months, nonscheduled operators carried 72,945 passengers, flew 6,139,273 passenger miles and 527,931 freight ton miles. Revenues for the same period rose from $885,588 in 1946 to $2,680,181 in 1947.

**Private and Industrial Flying.**—British private flying suffered a setback when foreign pleasure flying became impossible and later when gasoline rations were withdrawn from pleasure flying and reduced for private flying in connection with business. The government-appointed Special Advisory Committee on Private Flying, one of several groups which studied the existing problems during the year, called for financial grants to aero clubs, interest-free loans to finance plane production, and for the government to make airfields available to the clubs. Australia and South Africa continued aero club subsidies; New Zealand presented aircraft to its clubs, approved plans for club training of Air Training corps (ATC) cadets, and authorized the clubs to engage in commercial activities as subcontractors to the national air line.

Under the impetus of the G.I. training program, the number of licensed pilots in the U.S. continued to grow. Approximately 200,000 student pilot permits were issued and certificated pilots rose from 400,000 to some 455,000. Aircraft certificated increased from 81,002 to approximately 95,000. Government-sponsored training was a major source of income for aviation training schools, and most private flying was still instructional in nature. However, the use of planes by farmers and business men in their work became an increasingly important type of private flying. Indicating the unflagging efforts to increase the utility of the private plane was the designation by the CAA of Skyway Number One, a route between Los Angeles, Calif., and Washington, D.C., to be marked by cities and states along the way.

In industrial flying there was an extension of activities similar to those of the preceding year. An incomplete CAA survey revealed that in the U.S. there were 188 firms in crop dusting, 84 in seeding from the air, 58 in towing gliders, 37 in towing signs, 19 in making aerial photographs, 51 in patrolling power lines, 34 in patrolling pipe lines, 155 in shooting coyotes, and 12 in spraying for mosquito control. The use of aircraft in pest control showed particular promise because of the plane's ability to reach inaccessible places and to cover large areas quickly.

**Government and International Co-operation.**—Following ratification of the permanent Chicago convention by 26 nations, the permanent International Civil Aviation organization (I.C.A.O.) came into being and held its first general assembly meeting. The transition from a provisional organization (P.I.C.A.O.) to I.C.A.O., however, was marked by little visible change. To qualify for affiliation with the United Nations organization, I.C.A.O. expelled Spain. Renewed attempts to reach accord on a multilateral agreement governing reciprocal aviation rights among nations failed in disagreement over the question of "fifth freedom" traffic. However, many new bilateral agreements were negotiated.

The International Air Transport association, comprised of about 70 international air carriers, held its third general meeting in Brazil. Action included approval of an air travel plan for international transportation on credit, agreement to maintain international fares at existing levels for the time being, establishment of a uniform rate structure for international services, and further standardization of traffic procedures.

Britain enacted a new Air Navigation bill ratifying the Chicago convention and giving broad powers to the ministry of civil aviation. An Air Transport Advisory council was established to consider public complaints and representations respecting the three government-owned air lines. The British post office announced substantial reductions in air mail postage rates to all countries outside Europe, and by agreement between the European postal authorities and air carriers, surcharge was removed from all European air mail.

In Canada, delegates of nine British commonwealth nations met at the second Commonwealth Air Transport council. The battle between the government and private operators in Australia, begun the preceding year when the government-owned Trans-Australia Airlines initiated operations in competition with private companies, increased in intensity. Major issues were competitive fares, charges for government-owned airways and airport facilities, and methods of allocating gasoline under rationing. A new law authorizing T.A.A. to operate intrastate services caused further disagreement. New Zealand completed nationalization of its scheduled services, and South Africa, with trunk lines already government-operated, authorized operations by privately owned feeder companies.

A series of serious accidents in the U.S. focused attention on safety matters. Congress conducted safety investigations and the president appointed a Special Board of Inquiry on Air Safety. Subsequently, the president established an Air Policy commission to study and make recommendations on broad questions of aviation policy. A congressional Aviation Policy

TESTING FROST-COATED AIRCRAFT ENGINE for effects of "icing" conditions in a research project conducted atop Mt. Washington, N.H., in Feb. 1947 board was also created to study the needs of the aircraft manufacturing industry.

Much work of the CAA was directed to pressing the national airport program and continuing efforts to improve navigational facilities and traffic control. Several projects such as studies in methods of air-line pilot selection, and development of cross-wind landing gears and noiseless planes were in progress under CAA sponsorship. The CAB began an investigation into the reasonableness of air-line cargo rates and had under consideration a proposed regulation authorizing the operation of air-freight forwarders. For the second time in its existence, the CAB approved the sale of an air-line route with the transfer of Western Air Lines' Denver-Los Angeles route to United Air Lines. Among the safety activities were new regulations imposing higher standards of fire prevention and detection, and providing for temperature accountability in determining maximum take-off weights under varying atmospheric conditions.

**Helicopters.**—Following post office department experiments, the CAB issued Los Angeles Airways a temporary certificate for scheduled helicopter cargo and mail service primarily to test distribution of air mail from the Los Angeles airport to approximately 30 nearby communities. Using Sikorsky S-51's, operation over a major portion of the routes was begun by the end of the year.

For a time, the Skyway corporation conducted helicopter passenger and cargo shuttle service between downtown Boston and the airport, but discontinued service, reportedly because of unprofitable payloads and management difficulties. The first CAB authorization of scheduled helicopter passenger service came with issuance of a temporary certificate to the Yellow Cab company of Cleveland, O., for passenger and cargo operations between the airport and downtown Cleveland, and between the airport and Euclid, O., with a stop in a residential suburb.

Several charter companies were reported and the helicopter was put to a variety of uses in industrial flying. Reflecting the growing importance of helicopters was CAB issuance of revised air traffic rules with specific provisions for helicopter operation. In England, B.E.A. established a helicopter unit and began experimental operations with Sikorsky S-51 and Bell 47 machines.

**Aids to Navigation.**—After the winter of 1946–47, the flying public became alarmed over the number of accidents and exasperated by schedule cancellations, en route groundings and late departures and arrivals. These same conditions contributed substantially to air-line financial losses.

Adequate air traffic control, meteorological services and radio or radar navigation systems were conceded to be essential to efficient and safe operation of modern air transportation. Necessary navigation aids were classified as approach and landing, short-distance and long-distance aids. Selection of the most suitable systems for postwar civil flying was difficult. Wartime military systems, adapted to specific objectives and theatres, had been added to a diverse collection of prewar developments. The choice was limited by the cost of installation and maintenance, and the amount of equipment which could be economically carried by an aeroplane and efficiently operated by its aircrew.

Two of the most prominent instrument landing systems were instrument landing system (ILS) and ground controlled approach (GCA). ILS was a radio system in which the information necessary for making a blind approach was given on an indicator in the aircraft. In GCA, ground personnel followed the planes on radar scopes and relayed continuous instructions for landing to the pilot by radio. In 1946, ILS was chosen by P.I.C.A.O. as the standard for international airports.

Most major British and continental European airports, being international in character, planned to install ILS. In 1947, however, no such ideal standardization existed. SBA (standard beam approach), based on a prewar European system, was adopted for interim use in some places. London, in addition to GCA, ILS, and SBA had BABS (Beam Approach Beacon System), another wartime radar landing system. Use of the ILS system in the U.S. began in midsummer. By the end of the year the CAA had authorized 12 air lines to use 42 of the 52 ILS systems installed.

Because no instrument landing system permitted completely blind landings, fog dispersal or high intensity lights or both to improve visibility near the ground were considered necessary adjuncts. Research on Fido (Fog, Intensive, Dispersal of), a British war-developed system of fog dispersal, continued at Arcata Landing Aids Experiment station in California. Although high fuel consumption caused abandonment of Fido at London during the fuel shortage, CAA permission for its first U.S. commercial use was granted a scheduled feeder line. In view of the limitations of each landing system, a pattern widely held to be desirable for airports was ILS accompanied by GCA, in case of ILS failure and for aircraft not equipped for ILS, plus fog dispersal or high intensity lights or both.

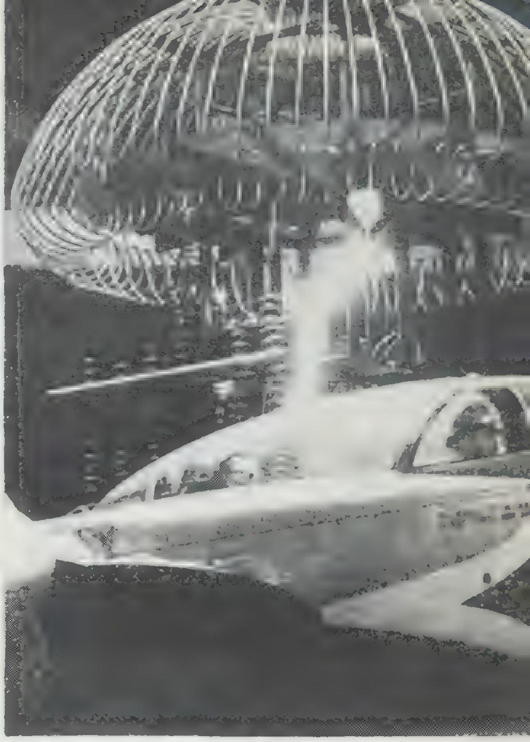
Wartime Gee radar and omnidirectional ranges were favoured as short-range navigation aids. In parts of Britain and Europe, Gee, installed during the war, was in use and plans were made for completing coverage of the United Kingdom and extending it in European countries. In the U.S., despite reduced funds, progress was made in CAA installation of very high frequency (VHF) omnidirectional ranges to cover the country. There was considerable disagreement on the relative merits of this type in comparison with radar beacon navigation, the latter being highly regarded by the military for its purposes. The first transcontinental radar airway was established as a joint navy-A.A.F.-coast guard project.

U.S. Loran and British Consul, wartime developments, were well-known long-distance navigation aids. Low-frequency Loran employing the same principles as standard Loran, was being studied. The LF Loran was expected to cover 1,500–2,000 mi., day or night, over land or sea, whereas standard Loran's maximum range over sea was 850 mi. by day and 1,600 by night, with performance over land poor.

Air-borne radar to detect high ground, turbulent clouds and other planes received its share of attention. A CAB order required that by early 1948 all scheduled transport aircraft be equipped with an absolute terrain proximity indicator. Radio altimeters and radar terrain clearance indicators were approved types.

In Britain, since the small size of the country made uniformity imperative, a unified control service, staffed by the royal air force, royal navy and civilian controllers was planned; and a system of area control was adopted. Approach and airport control was to be established at all permanent civil airfields. In the U.S., although a system of airways traffic control had been continuously augmented after its establishment in 1936, heavier aircraft movements necessitated further expansion and improvement, especially at congested airports. Ground radar surveillance sets were being studied by the CAA as traffic control aids and GCA was being explored for its potentialities in traffic control as well as in instrument landings.

Again in the interest of uniformity and high standards, I.C.A.O. approved a set of codes for supplying weather data for international services. Six of the 13 Atlantic weather ships, called for by a P.I.C.A.O. agreement in 1946, had been placed in operation by the end of the year. (*See* also AIRPORTS AND FLYING FIELDS; AIRCRAFT MANUFACTURE; AVIATION, MILITARY; CIVIL AERONAUTICS ADMINISTRATION; DISASTERS; PETROLEUM; POST OFFICE.) (G. M. M.)



Above, left: NENE LANCASTRIAN, British jet airliner, and the first of its kind in the world, was first flown in 1946 and still being tested in 1947. It was powered by two piston engines and two turbo-jet engines

Above, right: NATURAL LIGHTNING simulated by a high-voltage generator as part of U.S. army-navy investigations of lightning hazards to aircraft. Research on this problem was being carried out in Dayton, Ohio, during 1947

Right: THE SPEEDPAK, external cargo carrier introduced in 1947, which added a 4-ton baggage capacity to Lockheed Constellation transports. It could be raised and locked to the underside of the plane in 2 min. and released in the same time, thus speeding the handling of baggage during intermediate stops

Below: CEREMONIES inaugurating the first round-the-world passenger plane service, being held at La Guardia field on June 30, 1947. The Constellation "Clipper America" is shown after completing its 22,219 mi. global circuit

## Aviation, Military.

**United States Air Force.**—The U.S. air force (succeeding the army air forces) was established Sept. 18, 1947, as an autonomous armed service. Thus, under provisions of the National Security act of July 26, 1947, United States military aviation now enjoys a status co-equal and co-ordinate with that of the army and the navy in the national military establishment, and the increasingly important role of air power in United States national defense is given legal recognition.

The department of the air force was designed as a streamline organization, to bring the methods of business efficiency to the administration of the modern air force that must provide an instantly ready instrument of national air security. In the reorganized air force headquarters the old style military general staff was replaced by staff sections for (1) personnel and administration, (2) operations, and (3) matériel. Regrouping of functions placed intelligence as well as training and requirements and plans and operations under the deputy chief of staff for operations. The designation of an additional deputy chief of staff as (4) air comptroller to administer the principles of cost control and management control indicated the increased emphasis placed on economy and on budget and fiscal matters.

The division of the air force in the United States into three combat commands and five supporting commands was retained from the army air forces organization, as was the tactical structure of the combat groups. The group, however, and not the squadron is the lowest unit to perform both tactical and administrative functions, and a wing, organized as a mobile, self-supporting organization, was introduced at the next higher echelon.

The U.S. air force security program, which called for 70 regular air force groups plus air national guard units and air reserve groups as civilian components, was temporarily modified in accordance with budget considerations to 55 combat groups and 17 specialized squadrons on Jan. 1, 1948.

Of the 401,000 regular personnel and 15,000 aircraft required for the fullest realization of the 70-group program, the U.S. air force had, on Jan. 1, 1948, approximately 335,000 personnel and less than 10,000 aircraft, more than half of which were in storage. An aviation career program for high school graduates and a reopened aviation cadet program were inaugurated to supplement normal recruitment.

The completion, during 1947, of the surplus property disposal program left the air force with few surplus planes. The continuing modernization of the U.S. air force requires, however, replacement of obsolescent planes with planes of new types, at a rate of approximately 25% annually. The extensive research and development sponsored or developed by the air force was designed to provide it with the best aircraft and weapons. Research in guided missiles, trans-sonic speed and jet and rocket propulsion was being pursued. An air industrial preparedness program was inaugurated to ensure the procurement of new aircraft required and also to maintain the aviation industry as a healthy nucleus, readily and rapidly expansible in time of emergency.

Aircraft introduced in 1947 were the B-47, the latest jet bomber, which, because of its sweptback wings and the placement of its six engines, represented the most radical departure in design of any air force bomber to date; the B-48, the first six-engine jet bomber flown; the B-49, an eight-engine jet version of the B-35 flying wing heavy bomber of 1946; the B-50, a new and greatly improved version of the wartime B-29, which it exceeds in range, speed and load; and the B-45 and B-46, four-engine jet bombers. The first four are medium bombers; the last two are light.

The single-engine, single-seat, sweptback P-86 and the four-engine P-87 were new jet fighter aircraft. The XC-97, a cargo version of the wartime B-29 (now classified as a medium bomber); the XC-99, a cargo version of the heavy bomber B-36, and the world's largest land-based plane; the XF-11, a photo reconnaissance plane; and the XR-10 and XR-12, helicopters, were other new aircraft first flown or announced in 1947.

One of the most important announcements made by the air force in 1947 concerned the climatic hangar at Eglin field (near Valparaiso, Fla.) designed to test aircraft and equipment under all types and extremes of weather conditions, at a central testing site. Also important were announcements of flights by Alaska-based squadrons which determined that there are three north magnetic poles instead of one as previously believed, and which also showed that the U.S. air force could operate aircraft and equipment efficiently in the polar regions, during any season of the year. The outstanding aviation event of 1947 was the flight, Sept. 21–22, of an air force C-54 with preset, push-button control (not to be confused with radio control) from Stephensville, Newfoundland, to Brize Norton, near London, England, in 10 hr. and 15 min. Although a full crew was aboard, they served as observers only, and all details of the flight were accomplished by the automatic radio-guided control of a "mechanical brain."

(C. Sz.)

**United States Navy.**—Naval aviation moved ahead in a year marked by rapid development in naval aircraft, particularly in the field of jet propulsion. The resulting speeds established new marks in the world's record book.

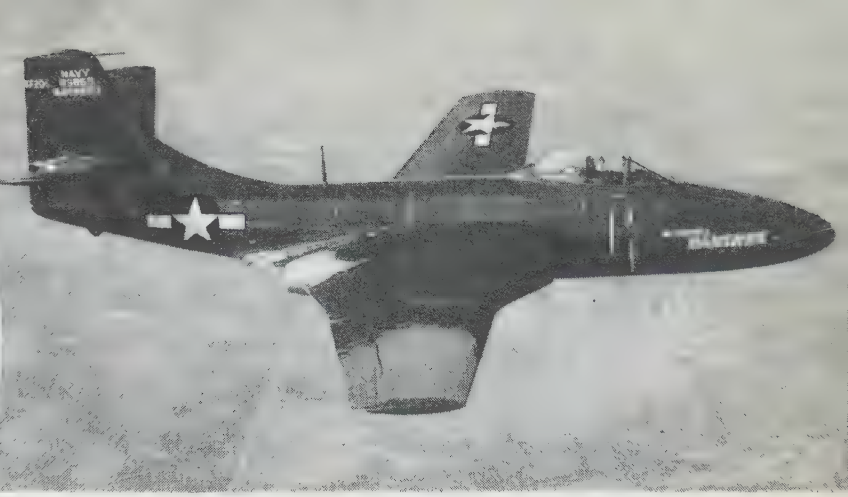
Highlights in the record-breaking flights of the navy included those of Commander Turner F. Caldwell, Jr., U.S.N., and Major Marion E. Carl, U.S.M.C. Piloting the Douglas Skystreak at 640.7 m.p.h., Commander Caldwell broke the world's speed record on Aug. 20, 1947, at Muroc Dry lake, Calif. Five days later, flying the same Skystreak over the course, Major Carl broke the record again at 650.6 m.p.h.

Operational employment of jet propelled aircraft kept pace with its technical development with the organization of the navy's first jet fighter squadrons. During 1947 two navy and one marine jet squadrons were formed and equipped with Phantoms and North American FJ-1s. New planes that spelled increased power for naval aviation were of many types. Aircraft driven by a combination of two power plants were the XF2R-1, the Ryan-built "Dark Shark Fireball," and the XFR-4. The shark-nosed XF2R-1, first turbo-prop aircraft in the navy, set what was believed to be an altitude record for that type when it topped 39,000 ft. It climbed to 10,000 ft. in less than 2 min.

The newest addition to the navy's line-up of all-jet fighters was the Grumman XF9F-1 Panther. With a speed well over the 600 m.p.h. mark, this new fighter seemed destined to be one of the navy's outstanding carrier-based fighters. In addition to the XF9F-1 Panther, navy all-jet fighters included FH-1 Phantom, F2H-1 Banshee, the FJ-1 and the F6U Pirate. The F2H-1, built by McDonnell, was powered by two turbo-jet engines installed in the wing roots which gave it a speed of more than 600 m.p.h. In contrast to the Banshee, the FJ-1, developed by North American and the F6U-1, built by Chance Vought, are powered by single turbo-jet engines.

In attack planes the AM-1 Mauler, a carrier-based torpedo plane built by Glenn Martin, and the AD-1 Skyraider built by Douglas, both powered by conventional engines, were rapidly replacing the TBF Avenger and the SB2C Helldiver in the fleet. Several squadrons were using the AD-1. Still other new planes were the XP4M-1 Mercator, Martin's long range patrol plane, powered with two jet and two conventional engines, and the PBM-5A, the world's largest amphibian.

Helicopters were rapidly gaining favour, and the navy was using such craft aboard carriers for various purposes, particularly transportation between vessels and air-sea rescue. The



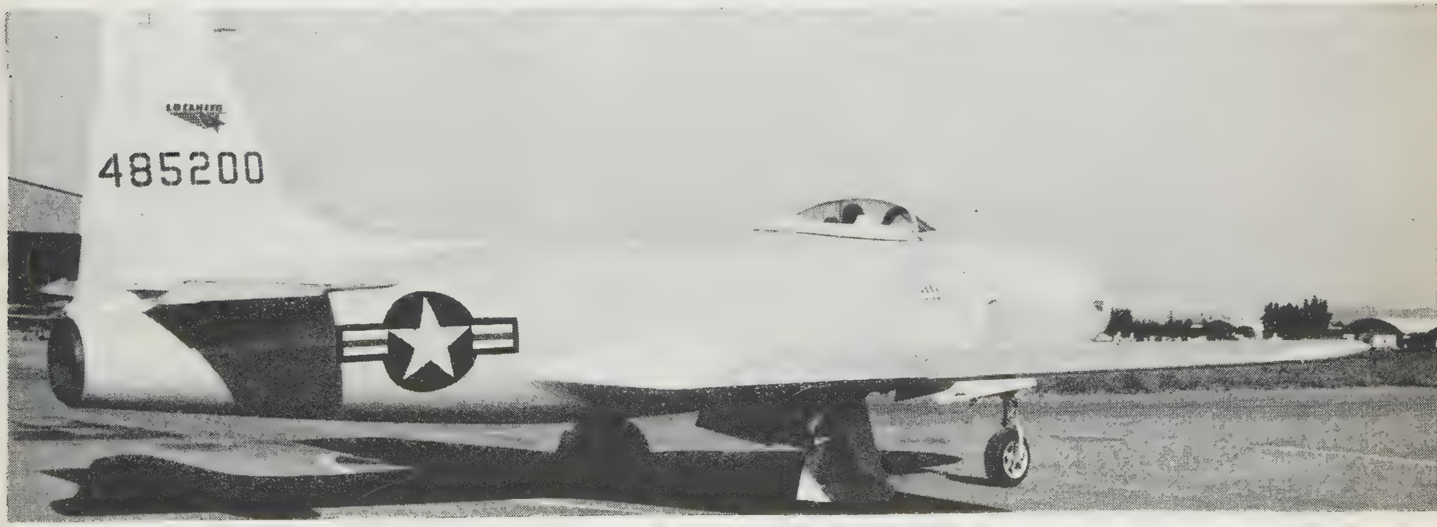
Above, left: AUTOMATIC CONTROL PANEL of the U.S.A.F. C-54 Skymaster which completed the first pilotless transatlantic flight in aviation history on Sept. 22, 1947, when it transported 14 men from Newfoundland to England in 10 hr. 15 min.

Above, right: McDONNELL BANSHEE, U.S. navy, carrier-based jet fighter plane test flown in May 1947

Right: MARTIN XP4M-1 Mercator, U.S. navy four-engine patrol bomber with a maximum range of more than 3,000 mi., which was first flown in 1947

Below: LOCKHEED P-80R Shooting Star, U.S. army jet plane which returned the world speed record to the U.S. after 24 years, flying at 623.8 m.p.h. on June 19, 1947

Bottom: DOUGLAS D-558 Skystreak, U.S. navy jet-powered research plane designed to hold a pilot and 500 lb. of recording instruments, which broke all world speed records on Aug. 25, 1947, flying at 650.6 m.p.h.



Sikorsky HO3S-1 was used in Operation "Highjump" in the antarctic in the winter of 1946–47. Two new helicopters made their debut in 1947, the XHJS and the XHRP. Known as the Flying Banana, the XHRP features a counter-rotating rotor on both ends. The first marine helicopter squadron was formed during 1947 and was equipped with Flying Bananas.

Foreshadowing things to come was the experimental firing of the V-2 rocket from the carrier "Midway," demonstrating the versatility of the flattops and opening a wide field of new effort in naval warfare of the future.

The navy in 1947 had 8,000 planes in operation, including fleet, training and reserve. To support these operating aircraft, approximately 7,000 planes were in storage, pool and overhaul activities. During the year, the navy trained 1,800 pilots and 15,000 technicians. Supporting the regular forces of the naval aeronautical organization was the air reserve, which more than doubled in size after Oct. 1946. There were at the end of 1947 45,000 officers and men in the navy and marine corps air reserve, of which 20,000 were participating in regular hours of navy-based activity. The goal for 1948 was 40,000 in the organized program. (*See* also NAVIES OF THE WORLD.) (D. B. D.)

**Air Forces—The World.**—For the air forces of the world, 1947 was definitely a transition year. After the end of active warfare in 1945 and the shrinkages and readjustments of 1946, a certain amount of technological progress was to be noted in most countries in 1947. In practically all countries which retained any of their military establishments (with the possible exception of the U.S.S.R.) production of new military aircraft reached the lowest levels since the mid-1930s, but research and development projects were extremely active. Factories everywhere were busy turning out the prototypes of the new and faster fighters and bombers which were displacing the machines that were in use at the end of World War II.

The most active development centred around new types of power plants. Jets, turbo-jets, turbo-propellers and rocket engines of many shapes and sizes were tested both on the ground and in the air. There is little doubt but that most of the high performance military aircraft of the future, under whatever flag, will be powered with one or another of such engines.

THE "BETTY JO," U.S. army P-82, which made a record nonstop flight from Hawaii to New York city in 14 hr. 33 min. Lt. Col. R. E. Thacker, pilot, and Lt. J. M. Ard, co-pilot, are shown on their return to New York, Feb. 28, 1947

Not that the reciprocating engine-driven propeller combination which was the conventional power plant throughout World War II, was due to disappear entirely. Because of the high fuel consumption of the turbine types it was probable that the older forms of power plants would remain in use for some years for long-range bombardment, transport and reconnaissance aircraft. This condition would probably exist until some form of atomic-energy propulsion was developed, but that was something for the next 10 to 25 years. In the latter connection one can only repeat a remark that was made at the close of 1946: "It would be dangerous to predict that aircraft of the future will *not* be atomic-powered. For the present, however, the practical military application of atom-splitting remains in the field of the weapon and not the carrier."

**Guided Missiles.**—Although little information was published on progress during 1947 in guided-missiles design and development in various parts of the world, it can be asserted with assurance that intensive work was in process in every country that supports any military program. The greatest question resolved around Russian activity in this field. It was well-known that the U.S.S.R. had been exploiting to the full the technical information and the scientific personnel that came out of the Russian-occupied zone of Germany. Rumours of great activity persisted, but what was actually going on in the way of research and development and in the testing of actual missiles deep in the Siberian steppes was entirely unknown. With the international political situation as delicately balanced as it was at the close of 1947, it is safe to say that any announcements that were made during the year of new developments in the guided-missile field related to equipment that had long been outmoded. (*See* also MUNITIONS OF WAR.)

**Piloted Aircraft.**—The complexion of all air forces in the world changed radically in 1947 as more and more service squadrons were equipped with postwar designs. In actual numbers, the older forms still predominated, but it was obvious that the experimental and test stage was well behind for many jet fighters and jet bombers. The trend which was noted in 1946 of reclassifying wartime, combat types as "trainers" continued in 1947. The standard 400-m.p.h. fighters of 1945 had become the transitional trainers for the 600-m.p.h. jet fighters of 1947–48.

In the paragraphs following, a brief survey is set out of the new aircraft and engines which appeared in countries outside the U.S. for which information was available. From a study of these newer types in comparison with those which appeared in 1946, some indication is to be had of the trends of the world's military aircraft as disclosed in 1947.

**Great Britain.**—Immediately following the close of World War II the British air ministry announced that further development of military types for reciprocal engines would be abandoned. During the following years the British actively pursued their announced policy. Throughout 1945 and 1946 a number of jet-propelled prototypes were flown and, in fact, a number of jet-fighter squadrons were activated, but 1947 saw the disclosure of a great many new types which had been started under the new program. A number of these are described below.

*New British Jet Aircraft.*—The Hawker N.7/46 fighter is a low-wing type without sweepback, powered by a Rolls-Royce Nene II turbo-jet. Top speed was expected to be more than 600 m.p.h. The engine was reported to be barely audible at 300 knots from within the cockpit.

The Saunders-Roe S.R./A1, first flying boat fighter, is powered by two Metropolitan Vickers Beryl axial-flow turbo-jets, each developing 3,850-lb. jet thrust at 7,750 r.p.m. Top speed was "probably more than 500 m.p.h."

Developed both as a land-based and carrier-based fighter, the Vickers-Armstrongs (Supermarine) Attacker (E10/44), was in small-scale production. Maximum speed at sea level was 590 m.p.h. It is powered by a Rolls-Royce Nene II turbo-jet.

Extensive flight tests during 1947 with the A.W.52G all-wing glider provided aerodynamic data for the Armstrong-Whitworth A.W.52 flying wing powered by two Rolls-Royce Nene II turbo-jets. Design features include sweptback laminar flow wings of 90-ft. span, boundary layer suction control, thermal de-icing and a pressurized cabin.

The De Havilland tailless D.H. 108, of composite construction, is powered by the new De Havilland MR.III turbo-jet. Problems of sweptback wing design were to be investigated with it, and data obtained from tests were to be applied to the projected D.H. 106, a 75,000-lb. transatlantic air liner.

First flown with a Bristol Mercury engine, the Balliol MR.I advanced trainer of Boulton-Paul Aircraft, Ltd., was to be powered eventually by an Armstrong-Siddeley Mamba or Rolls-Royce Dart turbo-prop.

*Miscellaneous Types.*—The Westland Wyvern T.F.1 torpedo attack bomber and fighter was described as "a real slugger." It weighed 22,000 lb. and had a maximum speed of 455 m.p.h., powered by the new Rolls-Royce Eagle 24-cylinder, 3,500-h.p. sleeve-valve engine, driving Rotol counter-rotating propellers. Typical armament included four 20-mm. guns, one 20-in. torpedo and one 2,000-lb. bomb or eight 60-lb. rocket projectiles.

The Blackburn S.28/43 Firecrest had a more powerful engine than its predecessor, the Firebrand, and differed widely in other respects. It is a smaller aeroplane in general with a slightly higher wing loading. Its Bristol Centaurus 59 engine produces 2,825 h.p. at take-off, using methanol-water injection. The S.28/43 has a "gull wing" look caused by the dihedral of the outer two-thirds of its wings. Its wings fold in three sections.

The Avro Shackleton was ordered in quantity for the coastal command. It was reported heavier than the Avro Lincoln, and powered by four Rolls-Royce Griffon engines driving counter-rotating propellers.

The Fairey Operational Trainer was developed from the Firefly I, long-range naval reconnaissance fighter.

Two new observation and liaison aircraft appeared during the year. The Heston Aircraft Co., Ltd., A.2/45 has twin booms, a pusher propeller, and is powered by one De Havilland Gipsy Queen 33 engine. It carries a crew of two. The Scottish Aviation observation and liaison aircraft derives from the civil Prestwick Pioneer of that company.

*British Jet Engines.*—The greatest development during the year in the gas turbine field was in turbo-props (gas turbines driving propellers). The Napier Naiad was a newcomer in the field in the 1,600-h.p. range.

The Bristol Phoebus was reported to be an experimental type expected to be used in the development of the Proteus turbo-prop for the Bristol 167 (Brabazon I) and the Saunders Roe S.R.45 transports.

Roy Fedden, Ltd., developed a turbo-prop of about 1,400 h.p. for use in short- and medium-range two- or four-engine transports, but work on this engine was discontinued in the summer of 1947.

The Rolls-Royce Dart of 1,000 h.p. was mentioned as a possible power plant for several advanced trainers, usually as an alternate of the Armstrong-Siddeley Mamba I. The experimental Rolls-Royce Trent, flown many hours in the Gloster Meteor, is an adaptation of the Derwent turbo-jet redesigned to drive a propeller.

Two other new gas turbine power plants, the De Havilland H.3 and the Power Jets 250, were reported but no details were available. The De Havilland Goblin III was developed for installation in the third version of the D.H. 108, supersonic research aeroplane.

Fido (Fog, Intensive, Dispersal Of), a joint army-navy-CAA research project in progress at Arcata, Calif., in 1947. Fido was expected to supplement automatic landing aids guiding pilots to a field by clearing the runway itself to allow the pilot to complete his landing in safety

Research with gas turbines included flight testing of such large four-engine aeroplanes as the Lancastrian with turbo-jets in the two outboard nacelles. This "flying test-bed" was used for the Armstrong-Siddeley ASX, the Rolls-Royce Nene and, in 1947, the De Havilland Ghost, first flown on July 31.

Bristol Theseus turbo-props were flown in the two outboard nacelles of the Lincoln. The Armstrong-Siddeley Mamba turbo-prop and also the Napier Naiad were being installed in a Lincoln for testing. An Armstrong Siddeley Python-powered Lancaster was reported flying. In these installations, turbo-props were reported installed in the outboard positions only. In the case of the Python Lancaster, each Python drives two four-blade counter-rotating propellers.

The first public appearance of the Gloster Meteor powered by the experimental Rolls-Royce Trent turbo-prop was made at the Derby International Air rally, June 21, 1947.

| Turbo-jets | | Jet thrust (lb.) | R.p.m. | Dry weight (lb.) |
|---|---|---|---|---|
| Armstrong-Siddeley ASX | | 2,600 | 8,000 | 1,900 |
| De Havilland Ghost II | | 5,000 | 10,000 | 2,011 |
| De Havilland Goblin II | | 3,000 | 10,200 | 1,573 |
| De Havilland Goblin III | | 3,300 | 10,750 | 1,573 |
| Metropolitan-Vickers F.2/4A Beryl | | 3,850 | 7,750 | 1,550 |
| Metropolitan-Vickers F.3 (duct fan) | | 4,600 | 7,390 | 2,200 |
| Metropolitan-Vickers F.5 (open fan) | | 4,710 | 7,700 | 2,200 |
| Rolls-Royce Derwent I | | 2,000 | 16,600 | 920 |
| Rolls-Royce Derwent V | | 3,600 | 14,700 | 1,280 |
| Rolls-Royce Nene I | | 4,500 | 12,000 | 1,640 |
| Rolls-Royce Nene II | | 5,000 | 12,300 | 1,640 |
| Turbo-props | Shaft H.p. | | | |
| Armstrong-Siddeley Mamba I | 1,010 | 320 | 14,500 | 750 |
| Armstrong-Siddeley Mamba II | (under development) | | | |
| Armstrong-Siddeley Python I | 3,670 | 1,150 | 8,000 | 3,150 |
| Armstrong-Siddeley Python II | (under development) | | | |
| Bristol Phoebus | (under development) | | | |
| Bristol Theseus II | 2,180 | 600 | 8,200 | 1,860 |
| Bristol Theseus 21 | 1,950 | 500 | 8,200 | 2,310 |
| Bristol Proteus I | 3,500 | 1,100 | ... | ... |
| Fedden | 1,305 | 312 | ... | 750 |
| Napier Naiad | 1,590 | 241 | 18,250 | 1,095 |
| Rolls-Royce Clyde I | 3,600 | 1,200 | 6,000 | 2,500 |
| Rolls-Royce Dart | 1,000 | 325 | ... | ... |
| Rolls-Royce Trent (Experimental) | 750 | 992 | ... | ... |

Sources: *Flight* (England); *Jane's All the World's Aircraft; Wilkinson's Aircraft Engines of the World.*

The published characteristics of British turbo-jet and turbo-prop engines of 1947 are given in the table.

**France.**—During 1945 and 1946 French aviation groped its way out of the period of wartime occupation and disruption.

By the end of 1947, however, a considerable degree of substantial progress was in evidence. Not only were the manufacturing plants beginning to turn out production types, but more important, French research establishments were being reactivated and, in spite of severely strained economic conditions, some new ones were being built. The large wind tunnel installations at Chalais-Meudon were again in operation. These tunnels are all in a low-speed category, but are still useful for testing aircraft in the subsonic ranges. A new installation of supersonic wind tunnels was reported to be located deep in the French Alps where electric power is cheap and abundant. Also, in Toulouse, a new aeronautic research establishment was opened at which new wind tunnels and a towing basin were being installed. There also, extensive laboratories were already in service for type-testing of aircraft components and for basic research on aircraft materials.

The postwar French aircraft industry has been re-established along substantially the same lines as the prewar industry. It was nationalized in 1937–38 and operates under four overriding government-owned and -controlled corporations generally abbreviated as S.N.C.A. (Société Nationale de Constructions Aeronautiques) du Nord, S.N.C.A. du Centre, S.N.C.A. du Sud-Est and S.N.C.A. du Sud-Ouest.

In 1946 it was possible to report that the French were experimenting with the design and development of jet engines of their own, meanwhile building a few experimental aircraft around German-built turbo-jet engines. Although in 1947 some German-built (and even some British-built) turbo-jets were still reported as installed in French-designed aircraft, several French-designed power plants of the newer type appeared to be nearing production stages.

*French Turbo-jets and Turbo-props.*—The Ateliers Aeronautique Richenbach ATAR 101 turbo-jet was being developed by Voisin, and built by S.N.E.C.M.A. (Société Nationale d'Etude et de Construction de Moteurs d'Aviation), the nationalized French engine factory. It was derived from the German BMW turbo-jet. Fifty were ordered to start, and 15 per month was the production goal.

The Rateau A-65 (SRA-1) turbo-jet was reported running successfully on test-bed for several months. This unit was planned for use in the S.N.C.A de Sud-Ouest S.O. 6000 experimental jet plane.

The Compagnie Electro-Mécanique of Lyons produced the TGA-1 bis turbo-prop, planned for test flying in an S.N.C.A. de Sud-Ouest S.O. 161 Languedoc, probably in the two outboard nacelles.

*French Service Types.*—Projected military designs included the S.N.C.A. de Sud-Est S.E. 580 single-seat fighter, powered by a 2,500-h.p. Hispano-Suiza 24-cylinder liquid-cooled engine; the S.N.C.A. de Sud-Ouest S.O. 177, reconnaissance version of the S.O. 175 (Bloch) reconnaissance bomber, powered by two Hispano-Suiza 12-cylinder engines; and the S.N.C.A. de Sud-Ouest S.O. 8000, a long-range fighter. S.N.C.A. de Sud-Est had also the S.E. 2000, a 4-engine 50-passenger monoplane under development.

A new name in the French aircraft industry is the Société Générale de Mécanique, Aviation (Société Matra), developing an interesting fighter, the Matra R-75. It is a twin-boom monoplane, with two Mathis engines driving a single-pusher propeller. It has no ailerons and obtains lateral control by differential control of the elevators. Flaps are fitted on the entire trailing edge of the wings.

The Arsenal V.B. 10C-1 went into production in 1947. It is adaptable as a day or night fighter at medium and high altitudes, a fighter-bomber and a photo-reconnaissance aircraft. Its two Hispano-Suiza 12Z liquid-cooled engines are mounted in tandem in the fuselage and coupled through a Vernisse-type drive to two Ratier, three-blade counter-rotating, coaxial propellers. Its armament consists of four 20-mm. cannon and six 0.50-in. machine guns in the wing. In addition, two 1,100-lb. bombs may be carried in wing racks, or eight 60-lb. rocket projectiles. The VB-10 has been called the most complicated aircraft in the world in its experimental version.

The first prototype of the S.N.C.A. du Centre NC 1070 carrier-based torpedo dive bomber was flown late in 1947. It has folding wings, and is a double tail plane. Two Gnôme and Rhône 14R radial engines, of 1,600 h.p. each, supply power for a maximum speed of 359 m.p.h. at 22,637 ft.

The S.N.C.A. du Nord 1500 Noréclair, a torpedo bomber, was first flown in Aug. 1947. It is powered by two Gnôme and Rhône 14R 25 radials.

The Dessault D. 315 (previously Bloch) two-engine ambulance aeroplane is a version of the feeder-liner Dessault D.303, powered by 580-h.p., S.N.E.C.M.A. Renault 12 S.00 in-line engines.

The S.N.C.A. du Nord 1400 Noroit reconnaissance flying boat was scheduled for production late in 1947. Twenty-six were to be produced for the French navy at Sartrouville. Two Gnôme and Rhône 14R 25 radials of 1,675 h.p. each furnish power for a maximum speed of 216 m.p.h. It carries a crew of seven.

*French Jet Projects.*—One of the most interesting and original projects is the Bréguet Leduc 0.10. It is an all-metal, midwing monoplane with tricycle landing gear, using a pulse jet unit similar to that in the V-1 flying bomb. As this engine gives little power at low speeds, the Leduc 0.10 is mounted on pylons on a S.N.C.A. de Sud-Est S.E. 161 Languedoc 4-engine aircraft from which it is released at about 16,000 ft. Maximum speed was expected to be in the 600-mi. range.

*Other Research Types.*—The NC 3021 Belphagor of the S.N.C.A. du Centre, is a low-wing monoplane intended for research at high altitudes. It can be fitted for meteorological, aerodynamic, electrical and cosmic ray research. A Daimler-Benz DB610A liquid-cooled 24-cylinder engine of 2,950 h.p. is installed. It was developed from the Farman 1000 of 1932, and the NC 3020 version flown in 1946.

The Bréguet 482, powered by two Hispano-Suiza 12Z liquid-cooled engines in underslung nacelles, is a research monoplane which made its first flight late in 1947.

The Voisin M.P. 1000 canard ("tail-first") type was planned for an estimated maximum speed of 646 m.p.h. A Voisin 2,000-h.p. liquid-cooled 42-cylinder 6-row radial engine drives 2 large diameter 5-blade tractor propellers.

*Passenger and Freight Aircraft.*—Largest of the projected French transports was the 140-ton S.N.C.A. Sud-Est S.F. 1200 eight-engined flying boat. A flying model was under construction, to be powered by four Renault 6 Q engines of 240 h.p. each. Span of the model is 72 ft., and the gross weight is 14,100 lb.

The Bréguet 761 transport, adaptable to a wide variety of military and commercial uses, progressed to its final stages of assembly. Four Gnôme and Rhône 14R engines were installed. Its gross weight was 92,593 lb.

The first prototype of the Bréguet 731 four-engine flying boat was flown at Biscarosse Sept. 2, 1947. It is the commercial development of the Bréguet 730 military reconnaissance flying boat of 1939.

The French Armament Ministry placed a large order for the S.N.C.A. du Nord Castel Mauboussin CM 10 high-wing freight gliders. Disposable load of the glider is 8,820 lb., and the freight capacity is 1,130 cu.ft.

The S.N.C.A. du Sud-Est S.E. 2010, a transatlantic 72-ton liner, was being assembled at Toulouse, 25 having been ordered by Air France. Four Pratt & Whitney R4360 Wasp Majors were installed but possibly French engines would be used later.

*French Helicopters.*—The French have long been pioneers in the helicopter field. In 1947 further progress was reported.

S.N.C.A. du Sud-Est reported successful test flights of the S.E. 3000 helicopter, a twin rotating five-blade type patterned after the German Focke-Wulf. A later model, the S.E. 3100, was also under active development. This is a much larger machine with an all-up weight of more than 14,000 lb. Professor Henrich Focke (Germany) was reported as assisting in these designs.

The S.N.C.A. du Sud-Ouest jet-driven helicopter S.O. 1100 (Ariel) was said to have flown in mid-1947. It was a novelty in that the rotor was driven by small jets at the blade tips and the whole machine was propelled forward by an orthodox pusher propeller.

**Russia.**—Very little was known on aviation activities in the U.S.S.R. —at least outside of military intelligence files. It was thought that several B-29s of the 20th air force made forced landings on Russian territory during the operations against Japan. It was generally assumed (and sometimes stated positively) that the Russians had built and flown replicas of the U.S. Superfortress.

It was known that Russian designers had been active in turbo-jet engine development. They not only secured many examples of German jet engines but they also captured a number of well-known German designers of such engines. Russian jet-powered fighters and bombers had been observed in flight. Published reports stated that at least six new types of jet aircraft were observed in a demonstration over Moscow in Aug. 1947.

A British source described a twin-jet Russian aircraft designed by S. Lavochkin. This machine, a midwing monoplane with cockpit well forward, was said to be powered by two German-built BMW 003A turbo-jet units mounted underneath the fuselage.

Another report from the same source indicated that an improved version of the German Messerschmitt Me 262 twin-jet fighter was in production in considerable numbers in the U.S.S.R.

Probably the most reliable information regarding soviet aviation activities concerns transport types. Photographs and some descriptions were published of the IL-12 and the IL-18, similar in design to the U.S.-built DC-3 and DC-4, respectively. The civil version of IL-12 is powered with two 1,600-h.p. engines. Its payload is reported at 6,600 lb., cruising speed of 197.5 m.p.h. and a range of 1,250 mi. is claimed. The aeroplane differs from the DC-3 in that it has a tricycle landing gear.

The IL-18, of general DC-4 configuration, differs from it in many details. The nose section, for example, is more nearly like the Boeing C-97. The fuselage appears to have a greater fineness ratio than the DC-4 and the tail surfaces are more highly tapered. Its four engines are M-89s, 14-cylinder radials, which stem back to the French Gnôme and Rhône 14-cylinder designs. These engines are reported as equipped with direct fuel injection and are rated at 1,300 h.p. each for take-off and 1,140 h.p. at 19,700 ft. The machine would be considered as under-powered by U.S. standards.

There were various estimates as to the strength of the Russian military air establishment. It was publicly stated by a high ranking U.S. air force officer that the Russian air forces possessed in 1947 at least 40,000 usable aircraft. The U.S.S.R. production rates in that year were estimated to be of the order of 20,000 aircraft a year. Exact figures, however, were lacking.

**Other Countries.**—Although most of the aeronautical activity of the world is in the hands of the few countries discussed above, a revival of aerial activity throughout some of the smaller nations was noted in 1947. Below, without any claim for exhaustive treatment, is a scatter of aeronautical notes from various sources.

*Argentina* reported a first test flight in Aug. 1947 of a single-seat jet fighter, the Cordoba Pulque Arrow, powered with Rolls-Royce Derwent R5. It was developed by the Aero institute at Cordoba. The Argentine air force also converted six Bristol-type 170 transports for troop carrier purposes.

*Belgium* ordered 20 Stampe et Vertongen SV-4B biplanes to replace the British De Havilland Tigermoths as standard air force trainers.

*Brazil* was starting its aviation industry by developing a series of low-powered trainer, ambulance and liaison aircraft built by the Compania Aeronautica Paulista of São Paulo.

*Canada* was developing a new trainer, the De Havilland (Canada) Chipmunk. Avro of Canada had under development an axial-flow turbo-jet power unit for military and civil use and also a design for a long-range fighter for the royal Canadian air force.

*Italy,* one of the most active countries in aeronautics before World War II, was slowly reviving its aircraft industry. Savoia-Marchetti was said to have a 20-passenger transport design, powered by two 12-cylinder in-line Isotta Fraschini Delta RC41 III engines. This aeroplane was also intended as a freight transport. Caproni reported an all-metal midwing monoplane for five passengers with two pusher propellers. Breda-Zappata was developing a 55-passenger transport, the BZ-308, powered with four British Bristol Centaurus engines. Fiat, long in the reciprocating engine field, was reported to have active research and development underway in gas turbines and turbo-jet categories.

*Netherlands.*—The Fokker company was stated to have been revived and to have begun construction of two- and three-place bombing and navigational trainers.

*Spain* was reported to be producing 100 two-seat trainers and 70 target-towing aircraft.

*Sweden* was modernizing its air force by the addition of jet fighters. The air force purchased a number of British-built Vampires and British-built turbo-jet units, chiefly the De Havilland Goblin II. Svenska Aeroplan A.B. of Linköping had developed the J21R fighter around the Goblin engine. This machine was in production during 1947 for the Swedish Air Forces. The SAAB factories, it may be noted, were completely underground. (*See* also Aircraft Manufacture; Airports and Flying Fields; Aviation, Civil; Civil Aeronautics Administration; Gliding; Munitions of War; World War II.) (S. P. J.)

**Avocados:** *see* Fruit.

**Azores, The:** *see* Portugal.

## Bacon.

The decline in U.S. hog slaughter in 1947 was reflected in proportionately reduced output of bacon. Sliced bacon produced under federal inspection in 1947 amounted to about 500,000,000 lb. compared with 522,918,000 lb. in 1946 and 549,857,000 lb. in the record year of 1944. The inspected bacon represented only about half the total, however, and about 19% of the total dressed weight of hogs is usually classed as bacon. By this method of estimating, the total output of 1947 was about 1,500,000,000 lb., compared with 2,100,000,000 lb. in 1946. The retail price of bacon continued high throughout the year, ranging from 70 cents to 95 cents per pound. The supply in retail markets was more evenly distributed than in former years, but larger exports helped to hold retail prices at high levels. (*See* also Hogs; Meat.) (J. C. Ms.)

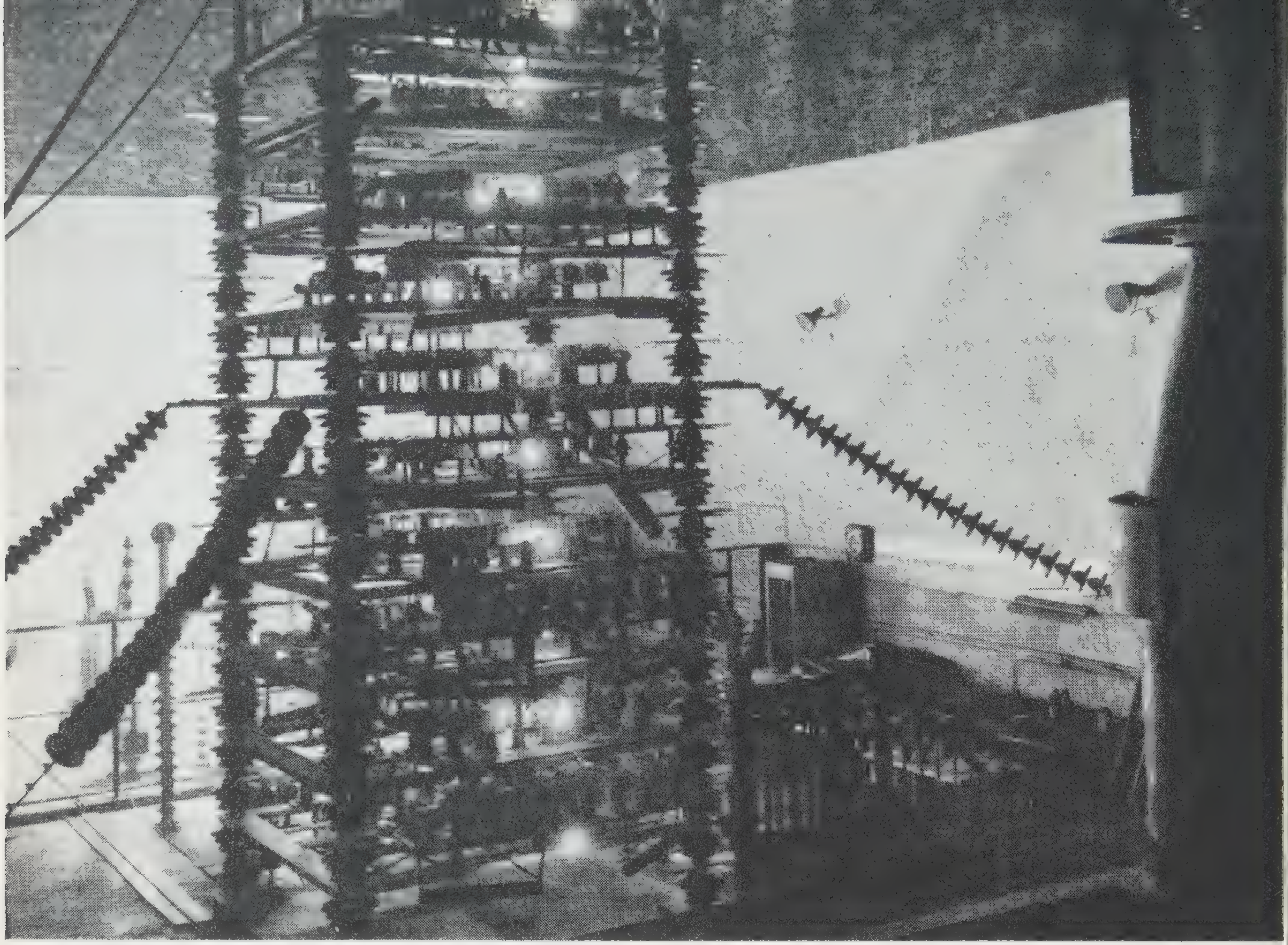
## Bacteriology.

During July 1947 the first postwar assembly of the International Congress for Microbiology was held in Copenhagen, Denmark. There, for the first time since the third congress in New York in 1939, microbiologists of all countries renewed acquaintances and exchanged news and scientific data. The register of contributors included about 320 names. The fields of microbiology covered were general, antibiotics, medical and veterinary, viruses, soil, water, dairy, food, serology, variation and mutation, plant diseases and industrial.

M. Frobisher and E. I. Parsons of Baltimore, Md., discussed immunization of rabbits with the endotoxins of avirulent diphtheria bacilli which resulted in complete resistance to doses of live virulent strains always fatal in normal rabbits. J. W. McLeod of Leeds, England, described increases of incidence of diphtheria and concurrent spread of gravis-type infections, especially in immunized persons, in various countries of Europe and in England. An important contribution to knowledge of spread of brucellosis was made by H. C. Bendixen and E. Blom of Copenhagen, who showed that artificial insemination of cows could transmit the disease from infected bulls, the organisms being demonstrated in semen. Encouraging data on vaccination of animals against brucellosis were presented by G. Schmidt of Berne, Switzerland, and by A. W. Stableforth of Weybridge, England.

Further work was reported in 1947 by R. J. Dubos and associates on the use of liquid media containing a wetting agent ("Tween-80") and a serum albumin fraction (V) for the cultivation of tubercle bacilli. The albumin acts mainly to detoxify oleic acid present as an impurity in "Tween-80." Other data in this field were presented at a national Sigma Xi lecture at the Johns Hopkins university. It was shown that mice could be used effectively in the study of tuberculous infection if the bacilli grown in the fluid medium were injected intravenously or intracerebrally or fed to the mice. A method of diagnosis with sputum was indicated. The bacilli were found to grow in the chick-embryo yolk sac. Such material, or a mixture of sterile yolk and bacilli, produced rapid and extensive disease in mice. Pigmented strains of mice were generally found more susceptible than albino mice. Concomitant inoculations with subinfective doses of pneumotropic viruses and small doses of tubercle bacilli, even when weeks apart, were found to produce rapid and extensive development of tuberculosis in the mice.

In the field of public health, work on the communicable disease centre, a new division of the U.S. public health service, organized primarily for service and aid to laboratories doing public health work, and with headquarters in Atlanta, Ga., progressed rapidly. The construction of provisional bacteriological and serological laboratories, in addition to the already-functioning parasitological laboratories, was brought nearly to completion at Lawson General hospital, Atlanta, Ga. Plans for a new mycology branch were completed, and the well-developed laboratories for virus studies located at Montgomery, Ala., carried out several important projects. A laboratory of the tuberculosis



THE CAPACITRON, 5,000,000-volt atom-smasher successfully used in 1947 for preserving fresh foods. Bacteria and enzymes in substances placed under its electron beam were killed and spoilage prevented

control division of the public health service also began to function regularly at Lawson hospital in connection with the communicable disease centre.

New publications on the flagella of bacteria were of particular interest since it was stated that bacteria move only because they are helicoidal in structure and that flagella, long regarded as the organs of bacterial locomotion, are merely filaments of capsular or slime layer which wriggle passively because of the motion of the bacteria. If confirmed, this was a revolutionary finding. (*See* also EPIDEMICS.)

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**Badminton.** After a four-year lapse because of war emergencies, badminton returned to national competition in 1947. The nationals, held at Los Angeles, Calif., and the first national junior championships, held at Baltimore, Md., established the 1947 national rankings as follows:

*Men's singles:* David G. Freeman, Pasadena, Calif.; Carl Loveday, Montclair, N.J.; Marten Mendez, San Diego, Calif.; Barney McCay, Alhambra, Calif.

*Men's doubles:* David G. Freeman and Web Kimball, Pasadena, Calif.; Robert Williams, Buffalo, N.Y., and Clinton Stephens, Baltimore, Md.; Carl Loveday, Montclair, N.J., and Richard Yeager, New Rochelle, N.Y.; Leroy Erickson, Pasadena, and Barney McCay, Alhambra, Calif.

*Women's singles:* Ethel Marshall, Buffalo, N.Y.; Janet Wright, San Francisco, Calif.; Thelma Scovil, San Francisco; Patricia Stephens, Baltimore, Md.

*Women's doubles:* Janet Wright and Thelma Scovil, San Francisco; Elizabeth Anselm and Shirley Blanchet, San Francisco; Helen Ough, Oakland, Calif., and Zoe Yeager, New Rochelle, N.Y.; Patricia Stephens, Baltimore, Md., and Helen Gibson, Buffalo, N.Y.

*Mixed doubles:* Wynn Rogers, Glendale, Calif., and Virginia Hill, Burbank, Calif.; Mr. and Mrs. Clinton Stephens, Baltimore, Md.; David Freeman and Helen Tibbetts, Pasadena; Leroy Erikson and Loma Smith, Pasadena.

*Veterans' doubles:* Hulet Smith and Lewis Rulison, Pasadena; Chips Aurand and Ray Wihelm, Los Angeles; Gene Elms and Earl Pound, Los Angeles; Everett Oliver and E. F. Tackaberry, Los Angeles.

*Boys' singles:* Ted Moehlmann, Jr., University City, Mo.; Wilbur W. Bullen, Jr., Waban, Mass.; Allen Hardin, Atlanta, Ga.; William K. Kellogg III, Glencoe, Ill.

*Girls' singles:* Barbara J. Scarlett, Baltimore, Md.; Jean Harvey, Baltimore; Clarke Lowndes, Baltimore; Susan Devlin, Baltimore.

Carl Loveday of Montclair, N.J., beaten by Freeman in the national final, 15–8, 15–8, dominated lesser tournaments in the east. He won the New Jersey state and Buffalo Invitational and dominated the Middle Atlantic doubles.

In the most important sectional tournament of the season—

the California state—Freeman warmed up to his U.S. title reign with victories in the men's singles and doubles and mixed doubles. John Samis of Vancouver, B.C., won the Canadian championship, while Stanley Cutts of Toronto, Ont., again proved his superiority over Doug Grant of Montreal, Que., with a 15–11, 15–12 conquest in their annual challenge match for the professional title. (M. P. W.)

**Bahamas.** An archipelago of islands, cays and rocks outside the Gulf of Mexico, lying between 21° and 27° north latitude and 72° and 81° west longitude. Administered as a British colony from 1787. Capital: Nassau (on the island of New Providence). Area: 4,400 sq.mi.; pop. (1943 census): 68,846, of which the island of New Providence accounted for 29,391. Language: English; religion: predominantly Christian. The constitution provides for a governor appointed by the British crown and advised by an executive council of 9 members, as well as for a legislative council of 9 (nominated by the crown) and for a house of representatives composed of 29 members elected from 15 districts. Governor (appointed in 1945): Sir William Lindsay Murphy.

**History.**—There was an important constitutional development in the Bahamas during the year 1947. The General Assembly Elections act, passed by the local legislature in Aug. 1946, came into force in 1947. It provided that voting at elections for the house of representatives should thereafter be by secret ballot, not only in the island of New Providence (where the practice already existed) but also in all the out islands of the colony. Another important measure taken during the year was the setting-up of a labour advisory board. There were also developments in the local mining industry. The arrangement, inaugurated in the later stages of World War II, for employing a contingent of Bahaman labour in the United States remained in operation during the year. The Bahamas did not participate in the conference held in Jamaica in Sept. 1947 to consider the question of the closer association of West Indian territories. The colony, like Bermuda, lies outside the province of the comptroller for development and welfare in the West Indies and his organization.

**Finance and Trade.**—The legal tender is British sterling currency, though United States currency is also generally used in the colony. Revenue (1946) £591,000; expenditure £868,000. Imports (1946) £2,841,000; exports £399,000. Public debt (1945) £245,000. The Bahamas are almost the only territory in the British colonial empire where agricultural products are of less importance than marine products in the economic life of the community. Fish are abundant and are caught in large quantities for local consumption, but sponges are the only marine product that is exported to any considerable extent. Lumber and tomatoes are other articles of export. (J. E. Sh.)

**Bahrein Islands:** *see* British Empire.
**Ballet:** *see* Dance.
**Ballroom Dancing:** *see* Dance.
**Baltic States:** *see* Estonia; Latvia; Lithuania.

**Baltimore.** The metropolis of Maryland, and the seventh largest city in the United States according to the federal census of 1940, had a population of 859,100, of whom 692,705 were white and 166,395 (19.4%) were nonwhite, mainly Negro. As of April 1947, the bureau of the census estimated the civilian population at 940,000 for the city and at 1,306,000 for the Baltimore metropolitan district. Land area of the city, 78.72 sq.mi.; inland water area, 6.9 sq.mi. Thomas D'Alesandro, Jr., Democrat, was elected mayor in May 1947, for a four-year term, succeeding Theodore R. McKeldin, Republican. Budget appropriations for 1948 totalled $83,451,250, an increase of 16.9% over the 1947 budget. The city tax rate for 1948 was $2.85 per $100 of assessed valuation (state rate, additional 10 cents). The gross funded debt as of Nov. 30, 1947, was $181,860,000; the net debt was $140,603,264 (not including income accrued to sinking funds). Percentage of net debt to taxable basis (excluding self-supporting debt) was 4.61%; taxable basis, $1,963,729,194.

There were 77,638 white students and 37,167 Negro students, ranging from prekindergarten through teachers' college, enrolled during the school year 1946–47; total, 114,805. The actual enrolment on Sept. 30, 1947, was 72,495 white students and 35,336 Negro students; total 107,831. Dr. William H. Lemmel was superintendent of public instruction in 1947. The department of education is administered as a unit apart from the school system of the rest of the state.

Exports for the first eight months of 1947 totalled 9,668,000 long tons, an increase of 54.5% over the similar 1946 period; imports were 5,054,000 long tons, an increase of 61%. Total vessel entrances in the eight months were 1,368 ships of 5,511,000 net registered tons, an increase of 44.6% in number and 52% in tonnage over 1946.

Production was at a relatively high level in such leading local industries as iron and steel, apparel, chemicals and fertilizers, automobile assembly, meat packing, electrical goods (including radios) and can manufacturing. But a five-month strike at the shipyards reduced shipbuilding activity and an adjustment to postwar demands curtailed aircraft output. Employment in the Baltimore metropolitan area was estimated by the Employment Security board at 498,700 in the latter part of 1947, an increase of 12,500 over 1946 and a new postwar peak. On June 30, 1947, resources of Baltimore's banks totalled $1,446,475,265, representing approximately 70% of the bank resources of all Maryland. (J. S. A.)

**Bananas:** *see* Fruit.
**Bankers Association, American:** *see* Societies and Associations.

**Bank for International Settlements.** The final act of the United Nations Monetary and Financial conference, held at Bretton Woods, N.H., July 1944, recommended the earliest possible liquidation of the Bank for International Settlements of Basle, Switzerland, founded in 1930 to handle German reparations payments under the Hague agreements of 1930. In 1947 it became clear that this recommendation would not be followed. The 17th annual report of the bank, published in June 1947, recorded that by letters exchanged in April 1947 co-operation between the bank and the International Bank for Reconstruction and Development, Washington, D.C., had been established in Europe.

According to this same report, the bank's assets, as of March 31, 1947, amounted to 499,138,672 Swiss (gold) francs (against 451,357,502 Swiss francs on March 31, 1946). Of this total, 16.6% was held in gold bars and coins. Cash and sight funds at interest amounted to 9,640,187 Swiss francs (1.9% of assets); bills and acceptances, time funds at interest and sundry bills and investments to 115,153,562 Swiss francs (23.1%). But the largest part of the assets, 291,160,279 Swiss francs (58.3%) still consisted of "funds invested in Germany in application of the provisions of the Hague agreements." In the absence of a final settlement of German affairs the real value of these claims and their recoverability from the debtors (the German treasury, railway administration, postal administration, etc.) were problematic. Against these assets, the liabilities included long-term deposits received in application of the provisions of the Hague agreements amounting to 228,909,375 Swiss francs, of which 76,303,125 Swiss francs represented the deposit of the German government and 152,606,250 Swiss francs the deposits of the creditor governments. The liabilities side also included a general reserve of 19,870,280 Swiss francs and a contingency reserve of 97,619,239 Swiss francs; short-term and sight deposits, 27,739,777 Swiss francs (of which 18,100,000 were in gold) and the paid-up capital of 125,000,000 Swiss francs (one-quarter of the authorized capital).

The net profit in 1946–47 amounted to 692,787 Swiss francs (against a loss of 616,581 Swiss francs in 1945–46), which was transferred to a special suspense account. The report stated that there had been a progressive revival of activity and an increase in volume of business during the financial year 1946–47.

After the resignation of Camille Gutt in 1946, the chairmanship of the bank passed to Maurice Frère, governor of the National Bank of Belgium, with Sir Otto Niemeyer, a director of the Bank of England, as vice-chairman. Roger Auboin (French) continued as general manager. (R. P. S.)

**Banking.** Loan expansion, retirement of marketable public debt from a treasury surplus and firming of interest rates featured banking developments in the United States during 1947.

From Dec. 31, 1946, through the end of Nov. 1947, total loans of all commercial banks rose by about $6,600,000,000. Holdings of government securities declined $4,700,000,000, and holdings of other securities rose $800,000,000. Total loans and investments declined in the first half of the year but rose in the second half to show an increase for the first 11 months of 1947 of $2,700,000,000.

By the end of Nov. 1947 total loans of all commercial banks amounted to $37,700,000,000, exceeding the previous record high in 1929. Moreover, by the end of the year total loans comprised one-third of total loans and investments of all commercial banks, as compared with slightly more than one-fifth at the end of 1945.

Loan expansion at commercial banks centred in the fields of commercial and industrial loans, real estate loans and consumer loans. During the first half of the year, total loans at all insured commercial banks rose to $2,520,000,000. There were increases of $750,000,000 in commercial and industrial loans, $1,100,000,000 in real estate loans and $860,000,000 in consumer loans. Loan expansion proceeded at an accelerated rate during the second half of the year. The increase in commercial and industrial loans at weekly reporting member banks in leading cities of the United States was $3,300,000,000 during the entire year.

The total money supply—demand deposits adjusted, United States government deposits, time deposits and currency outside banks—declined from $167,100,000,000 at the end of Dec. 1946 to $165,000,000,000 at the end of May, but rose to $169,700,000,000 by the end of October.

The volume of bank debits rose to a high level in 1947, and the rate of turnover of demand deposits continued the increase which began in 1946 after a decline that extended from 1929.

During the year the total gross public debt was reduced by $2,200,000,000 to $256,900,000,000 on Dec. 31, 1947. Total marketable obligations were reduced by $10,900,000,000, the major portion of which was in certificates of indebtedness. Nonmarketable public issues outstanding rose $3,000,000,000, reflecting sales of U.S. savings bonds in excess of redemptions and the sale of the nonmarketable $2\frac{1}{2}\%$ investment issue of treasury bonds in September. Special issues increased $4,400,000,000. Special notes payable to the International Bank for Reconstruction and Development and the International Monetary fund, on which no interest is paid, increased $1,300,000,000. While the retirement of marketable securities in 1947 was substantially less than in 1946, the 1947 retirement was chiefly from a surplus of tax receipts over cash expenditures and cash sales of nonmarketable securities. This was in contrast to the previous year when retirement of marketable securities was made possible chiefly by drawing down large accumulated war-loan deposits in commercial banks.

Corporate security issues for new capital reached the high figure during 1947 of about $4,500,000,000, reflecting needs for funds to finance record business expenditures on plant and equipment. The 1947 total compares with the 1946 figure of $3,500,000,000, the peak in the 1930s of $1,225,000,000 in 1937 and the record high of $8,000,000,000 in 1929, which included, however, large offerings of securities by holding companies and investment trusts. Bond issues constituted about three-fourths of corporate flotations for new capital during the year, and stocks about one-fourth. Flotations of preferred stocks declined reflecting pronounced weakness in the market for these issues as interest rates firmed. Unsettled capital market conditions in the fourth quarter of the year lowered the amount of refunding issues but had little apparent effect on the amount of corporate issues for new capital. It is estimated that in the fourth quarter of the year about one-third of the securities offered were sold directly to the issuers' security holders, and another third were sold privately to life-insurance companies and other large investors. More than half of new capital issues were for public utility and petroleum companies. Corporate security issues for refunding came to about $1,400,000,000 during 1947, less than in any of the three preceding years.

Security issues of state and local governments during 1947 amounted to $2,200,000,000, a new all-time high record. Almost all of these issues were for new capital rather than for refunding. The 1947 total exceeded by more than 50% the previous record high of $1,510,000,000 in 1927. The large amount of financing by state and local governments during the year reflected state bonuses to veterans and a large volume of state and local construction projects, and was achieved notwithstanding a sharp curtailment of new offerings in the final quarter of the year because of unsettled capital market conditions.

Total consumer credit outstanding rose to more than $12,000,000,000 by the end of Oct. 1947, surpassing the previous record high of more than $10,000,000,000 late in 1941. Large increases appeared in the amount outstanding of instalment sale credit, instalment loans and single-payment loans. At the same time, however, automobile sale credit, which amounted to about $1,000,000,000 at the end of Oct. 1947, was far less than previous peak levels.

Firming of interest rates during the second half of the year was a notable development in banking. Several factors together brought about this development. The cumulative effect of treasury and federal reserve actions lessened the margin between short-term and long-term yields on government securities and removed much buying pressure from the longer-term part of the market. These actions included retirement of bank-held debt, particularly that held by the federal reserve banks, from the current treasury surplus of cash receipts over expenditures, the increase in the treasury bill rate from .375% to about .95%, and the increase in the rate on one-year certificates from .875% to 1.125%. Between April and September the treasury investment accounts made net market sales of $1,800,000,000 of marketable treasury bonds, and in September the public sale of $870,000,000 of the nonmarketable investment series bonds added further to the available supply of treasury bonds. Of basic importance, however, in bringing about a decline in bond prices and higher yields were the huge private demands for funds—from business enterprises through both loans and security issues, from state and local governments, from consumers and from those buying or building homes.

By the end of December the yield to call on the longest bank-restricted treasury bond was 2.48%, as compared with a low during the year of 2.26%. Corporate bond yields increased more sharply than government bond yields, and municipal bond yields increased even more during the year than did corporate bond yields. The yield on high-grade municipal bonds at the end of the year exceeded the yield on long-term bank-restricted treasury bonds. (*See* also BUSINESS REVIEW; CONSUMER CREDIT; LAW; PRICE ADMINISTRATION, OFFICE OF.) (J. K. L.)

**Mutual Savings Banks.**—The total number of mutual savings banks in the United States increased to 533 in 1947 through the conversion of 2 building and loan associations into savings banks. The opening of 19 new branch offices during the year brought the total number of branches in operation to 170.

Deposits grew from $16,224,970,861 on July 1, 1946, to $17,415,253,222 on July 1, 1947, a net gain of $1,190,282,361 or 7.3%. In the year ended July 1, 1946, the net gain in deposits was $1,846,557,661 or 12.8%. Assets increased from $18,028,676,696 on July 1, 1946, to $19,363,391,557 on July 1, 1947, a net gain of $1,334,714,861 or 7.4%. In the previous year the net gain was $2,075,343,084 or 13.0%. Surplus increased $121,189,094 to a total of $1,861,962,163 or 10.7% of deposits. The total number of open accounts on July 1, 1947, was 18,177,018, a net gain of 740,844 accounts. The net gain for the previous year was 710,441 accounts. In the 10-year period 1936–46 the gain in deposits was $6,799,929,847 or 67.9%, and the gain in accounts 3,361,736 or 23.3%.

A new type of U.S. government bond, similar to the Series G savings bond, bearing interest at 2½% and designated Investment Series A-1965, was made available in Sept. 1947 to institutional investors holding savings, insurance, pension and similar funds. Savings banks bought at issue $125,260,000 of these bonds.

The first issue of bonds of the International Bank for Reconstruction and Development came on the market in July 1947. These were legal for purchase by savings banks in nine states.

Many banks invested in new corporate issues, which were offered in substantial volume for the first time after 1941. They also actively sought mortgage loans but the supply of corporate bond and mortgage investments was not sufficient to absorb available funds. However, new mortgage loans made during the year, including Federal Housing administration insured loans, Veterans' administration insured loans and conventional loans, increased the total mortgage portfolios of all mutual savings banks to $4,600,000,000. This amount was in excess of the total amount held after the end of 1942 when the great expansion of government bond holdings in savings bank portfolios began. A growing volume of partial payments on principal as a result of the general adoption of the amortized mortgage and of voluntary pay-offs of entire mortgages added to the difficulty of increasing the total mortgage-loan investments.

High construction costs prevented the savings banks in New York state from carrying out all the commitments for the building of savings bank-owned moderate-priced rental housing which were in contemplation at the end of 1946. Parkway Village in Queens county, a garden-type apartment project accommodating 687 families, on which construction was started in 1946, was opened for occupancy in July 1947. This development, costing $11,700,000, was financed by 20 savings banks as a joint venture. Construction of University Park, a development in Rochester, N.Y., to house 184 families at an estimated cost of $1,660,000, was begun in 1947.

Only one other state, Massachusetts, had given savings banks the right to build housing projects, and to undertake improvement of urban blighted areas through redevelopment. Participation in these undertakings was made subject to such regulations as the commissioner of banks deemed desirable.

**Savings Bank Life Insurance.**—There were 243 mutual savings banks selling life insurance at the end of Oct. 1947, an increase of 9 banks during the year. These included three new agency banks in Connecticut, two new agency banks in Massachusetts, two new issuing and two new agency banks in New York. At the close of business on Oct. 31, 1947, there were $9,309,762 of insurance in force in Connecticut representing 9,714 policies; $320,836,136 of insurance in force in Massachusetts representing 350,884 policies and $109,037,817 of insurance in force in New York representing 87,389 policies, or a grand total of $439,183,715 and 447,987 policies. Legislation resulting from the Guertin study was passed in New York and Massachusetts in 1947. The Guertin study was initiated by the National Association of Insurance Commissioners in 1939 under the chairmanship of Alfred N. Guertin, actuary of the New Jersey insurance department, to study the need for a new mortality table and related topics. The law in New York made it mandatory for savings banks in that state to use the new Commissioners Standard Ordinary Mortality table, compiled in 1941 by a group of state insurance supervisory officials, as a base for determining insurance premium rates after Jan. 1, 1948. The law in Massachusetts made it mandatory for old-line life-insurance companies but optional with savings banks. The Commissioners Standard Ordinary Mortality table was made permissive for use by Connecticut savings banks on and after Jan. 1, 1945, but had not been officially adopted at the close of 1947.

PICKETING IN THE RAIN, members of the C.I.O. Financial Employees guild are shown outside the main branch of the Brooklyn Trust Co. in New York city. Employees of the bank and its 24 branches struck in July 1947, demanding a 30% wage increase

**Trustee Savings Banks in Great Britain.**—The total funds of the trustee savings banks in Great Britain increased £80,168,898 in the year ended Nov. 20, 1946. The financial position on that date, as compared with the previous year, was as follows:

| | 1945<br>£ | 1946<br>£ |
|---|---|---|
| Cash balances due to depositors: | | |
| Ordinary department . . . . . . . . . . | 488,526,684 | 557,695,768 |
| Special investment department . . . . . . | 114,553,313 | 112,621,758 |
| Government stock held for depositors . . . . . | 71,736,297 | 83,058,049 |
| Total balances . . . . . . . . . . . . . | 674,816,294 | 753,375,575 |
| Combined surplus funds . . . . . . . . . . . | 15,744,335 | 17,353,952 |
| | 690,560,629 | 770,729,527 |

Deposits continued to increase during 1947 though at a slower rate than in the year 1946.

In the ordinary department there were 4,061,520 active accounts on Nov. 20, 1946, an increase of 201,061 in the year ended that date; in the special investment department there were 329,592 accounts, a decrease of 8,811 in the preceding year, and in the government stock department the number of stockholders increased by 13,588 to 252,906.

On Nov. 20, 1946, there were 87 trustee savings banks with 811 offices, an increase of 41 in the number of offices during 1946.

Possibilities for the extension of the system were improved by the provisions of an act passed in Feb. 1947, which empowered trustee savings banks to make advances for the extension or formation of other such banks. (*See* also BANK FOR INTERNATIONAL SETTLEMENTS; BANK OF ENGLAND.) (HE. BR.)

## Bank of England.

Following the coming into force of the provisions of the Anglo-American loan agreement, the Bank of England as agent of the United Kingdom government took part in negotiations during the first half of the year 1947 for carrying out the terms of clause 10 of the agreement, dealing with the accumulated sterling balances. These involved long and intricate discussions with the governments and central banks who were holders of large sterling balances which had accrued during World War II. Agreement was reached with most of the countries concerned—some of the settlements being necessarily of a temporary nature—and the ground was thus prepared for carrying out one of the most discussed conditions of the loan agreement, which required the United Kingdom, within one year of the signing of the agreement, *i.e.*, by July 15, 1947, to make sterling accruing from current transactions freely available for current payments in any currency area. In order to facilitate these payments, the Bank of England announced in February the introduction of a system of "transferable accounts" and by July 15 "convertibility" arrangements with most countries were in force. The large drawings on the U.S. loan, particularly during July and early August, which Great Britain was forced to make in order to carry out its obligations under these arrangements, however, made it obvious that the loan would be exhausted within three months, and on Aug. 20 the chancellor of the exchequer announced that the United Kingdom was suspending "convertibility" so far as the dollar area was concerned. Consequently, it became necessary to resume negotiations in the light of these changed conditions with the various countries outside the sterling area.

*Bank of England, 1947*

(£ million)

| | Jan. 8 | April 9 | July 9 | Oct. 8 | Dec. 10 |
|---|---|---|---|---|---|
| Issue Department: | | | | | |
| Notes in circulation . . . . . . . | 1,402 | 1,403 | 1,404 | 1,374 | 1,353 |
| Fiduciary issue . . . . . . . . . | 1,450 | 1,450 | 1,450 | 1,450 | 1,450 |
| Banking Department: | | | | | |
| Public deposits . . . . . . . | 14 | 9 | 9 | 12 | 19 |
| Bankers' deposits . . . . . . | 314 | 290 | 293 | 288 | 294 |
| Other deposits . . . . . . . | 60 | 102 | 96 | 92 | 93 |
| Government securities . . . . | 321 | 336 | 328 | 303 | 291 |
| Discounts and advances . . . | 18 | 18 | 22 | 10 | 16 |
| Other securities . . . . . . . | 18 | 17 | 18 | 19 | 19 |
| Reserve . . . . . . . . . . | 49 | 48 | 49 | 78 | 98 |

The figures in the table are the principal changes shown by the bank return during the first nine months of the year.

It will be noted that, because of the stability of the note circulation throughout the period, no change in the fiduciary issue was necessitated, the last increase having taken place in Dec. 1946.

An outcome of the transfer of the Bank of England to public ownership in March 1946 was the publication by the bank in April 1947 of an annual report—the first in the 253 years of its existence. (H. CY.)

**Bankruptcy:** *see* SECURITIES AND EXCHANGE COMMISSION.
**Banks:** *see* BANKING.

## Baptist Church.

The Baptist World alliance, comprising Baptists of all lands, met in its seventh congress in Copenhagen, Denmark, July 29 to Aug. 3, 1947. Purely advisory and with no authority over the churches, this meeting, like its predecessors, was held for inspirational purposes and to discuss themes of common concern to Baptists of all lands. Five thousand delegates attended. Former enemy nations were represented; racial antipathies, had there ever been such, were forgotten, and recognition of common human conditions and needs prevailed which alone, these people believed, could make for peace.

According to reports of the congress, many Baptists were still living in the displaced persons camps of the continent. Some 600 Estonian Baptists were refugees in Sweden and another 100 were in Germany. Yet, with religious freedom prevailing in those nations, Baptist work was successfully carried on. Estonian Baptists in Sweden baptized 38 new members.

In Denmark, there were 34 Baptist churches with 6,427 members. In Finland, the Swedish-speaking Baptists had 29 churches in 1947 with a total membership of about 2,000; the Finnish-speaking Baptists had 16 churches with a membership of 1,000. Each had established a publishing house, young people's organizations, Sunday schools and missionary societies.

In Norway there were 62 churches with a membership of 7,446, and Sunday schools with 4,162 children and 345 teachers. Sweden reported 607 churches with a membership of more than 49,000; Great Britain 385,933 members in 3,247 churches. From other European countries, some with less democratic heritage, came representatives from Yugoslavia, Rumania, Portugal, Spain, Italy, U.S.S.R. and Lithuania. In fact, according to congress records, Baptists were to be found in every nation of the continent. From Asia came delegates of Burma, India, China and the Philippines. Though distance made attendance difficult, Africa and Australia had their spokesmen. Rev. C. J. Tinsley from the latter country was the congress moderator.

The Southern Baptists of the United States, with a total membership of 6,709,305, and more than 26,000 churches, had the largest representation. The Northern Baptists reported a membership of 1,468,043 and 7,603 churches. The two National Baptist conventions (Negro) had 24,600 churches and a membership of 4,073,252. Canada reported 1,214 churches with 139,405 members.

Dr. C. O. Johnson, pastor of the Third Baptist church, St. Louis, Mo., was elected president of the Baptist World congress, to serve until the meeting of the next congress, invitations for which were received from China, Canada, United States and South America. The headquarters of the alliance were moved in 1947 from London, its seat since 1905, to Washington, D.C. Baptists of the world numbered well over 14,500,000 church members in 1947. (*See* also CHURCH MEMBERSHIP.) (R. E. E. H.)

**Bar Association, American:** *see* SOCIETIES AND ASSOCIATIONS.

## Barbados.

The most easterly of the Caribbean islands. British colony; in continuous British occupation from early in the 17th century. One of the most densely populated areas in the world. Area: 166 sq.mi.; pop. (1946 census) 192,841, mainly of African descent. Capital and chief port: Bridgetown (pop. 13,345). Language: English; religion: Christian (about 70% Anglican; the number of Roman Catholics is comparatively small). Executive authority is vested in a governor (appointed by the British crown) assisted by an executive council and, in certain matters, by an executive committee. The legislature consists of the governor, a legislative council of 10 members appointed by the crown and a house of assembly of 24 members (2 for each parish in the colony and 5 for the capital) elected for a period of two years. Governor: Sir Hilary Blood.

**History.**—A ten-year development plan drawn by the Barbados government was under consideration in London during the year 1947. The plan contemplated a total expenditure of £3,400,000, toward which it was estimated that the colony itself would be in a position to make a substantial contribution both from surplus balances and from revenue. Surplus balances stood at £1,087,000 in June 1947. The plan aimed at an all-round improvement of social services and in particular at the reorganization of the education and health services of the colony. Housing was another problem calling for urgent attention. On the agricultural side, the program aimed at developing an intensive system of mixed farming on the basis of animal husbandry and with special reference to peasant holdings. By these means it was hoped to lessen the dependence of the colony on sugar and to stimulate an increase in animal (including dairy) products which was badly needed for improving the nutrition of the people. The Barbados plan was submitted to the secretary of state in April 1947. It received his general approval after examination by the colonial economic and development council.

**Finance and Trade.**—The monetary unit is the pound sterling, tied to the pound in the United Kingdom. Government accounts are kept in sterling, commercial accounts in West Indian dollars bearing a fixed relation to the British pound. Revenue (1946) £1,289,000; expenditure £1,086,000. Imports £4,992,000; exports £3,142,000. The agricultural practice of Barbados is entirely based on the sugar cane, the products of which represented, before World War II, no less than 97% of the domestic exports of the island. Almost the whole island is dependent, directly or indirectly, upon sugar. (J. E. SH.)

## Barium Minerals.

The major producers of barium minerals are the United States, Great Britain and Germany, with small amounts coming from Canada, India, France and Korea.

**United States.**—Data on the production of barite in the United States are shown in the table below.

*U.S. Production of Barite, 1940-46*

(In thousands of short tons)

| | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|---|
| Production, crude . | 390.5 | 483.4 | 449.9 | 429.3 | 515.1 | 692.3 | 725.2 |
| Sales, crude . . . | 409.4 | 503.2 | 429.5 | 420.3 | 518.6 | 696.1 | 724.4 |
| Imports . . . . . . | 7.4 | 0.5 | 4.7 | — | 67.9 | 56.9 | 44.7 |
| Consumption . . . | 404.3 | 490.8 | 449.4 | 453.7 | 595.6 | 720.9 | 722.1 |
| Used for | | | | | | | |
| Chemicals . . . | 66.6 | 93.0 | 104.2 | 99.1 | 100.9 | 99.2 | 102.4 |
| Lithopone . . . | 136.9 | 154.0 | 144.8 | 129.5 | 134.6 | 139.3 | 154.2 |
| Ground barite . | 200.9 | 243.8 | 200.4 | 225.2 | 360.0 | 482.4 | 465.5 |
| Well drilling . | 138.1 | 154.8 | 117.4 | 144.5 | 277.8 | 407.9 | 372.6 |

Instead of declining, the production of barite increased after the close of World War II, partly to cover increased consumption and partly to offset decreased imports.

In addition to the imports of barite shown, there are small imports of witherite and even larger amounts of lithopone and barium chemicals.

**Canada.**—There was a marked increase in Canadian production during the past few years, much of which was exported to Trinidad and South America for use in oil-well drilling. Production increased from 114,387 short tons in 1944 to 139,589 tons in 1945, but declined to 120,419 tons in 1946. Production in 1947 was 133,099 tons. (G. A. Ro.)

## Barley.

The U.S. barley crop was estimated at 279,182,000 bu. in 1947 compared with 262,258,000 bu. harvested in 1946 and an average of 287,360,000 bu. during 1936–45. Acreage was increased about 6% to 11,082,000, compared with 10,411,000 in 1946 and a 1936–45 average of 12,407,000. The yield was 25.5 bu. per acre, slightly higher than in 1946.

*U.S. Barley Production by Leading States,**
*1947, 1946 and 10-year Average, 1936–45*

(In thousands of bushels)

| State | 1947 | 1946 | 10-yr. Average | State | 1947 | 1946 | 10-yr. Average |
|---|---|---|---|---|---|---|---|
| North Dakota | 50,358 | 45,680 | 38,287 | Michigan . . . | 3,450 | 5,037 | 5,023 |
| California . . | 43,260 | 46,066 | 34,436 | Maryland . . | 2,618 | 2,174 | 1,748 |
| South Dakota | 31,504 | 30,294 | 29,752 | Texas . . . . | 2,520 | 2,610 | 3,913 |
| Minnesota . . | 25,838 | 21,257 | 38,915 | Virginia . . . | 2,478 | 2,272 | 1,726 |
| Montana . . | 17,940 | 17,550 | 8,485 | New York . . | 2,184 | 3,648 | 3,084 |
| Colorado . . | 16,940 | 13,936 | 13,474 | Oklahoma . . | 2,160 | 1,820 | 5,682 |
| Idaho. . . . | 11,625 | 9,345 | 9,139 | Tennessee. . . | 1,617 | 1,640 | 1,404 |
| Oregon . . . | 11,147 | 9,452 | 6,574 | Missouri . . . | 1,449 | 1,260 | 2,677 |
| Nebraska . . | 10,274 | 11,529 | 20,768 | Kentucky . . . | 1,325 | 1,250 | 1,531 |
| Kansas . . . | 6,380 | 5,022 | 12,051 | North Carolina | 980 | 825 | 598 |
| Wisconsin . . | 5,962 | 4,650 | 16,032 | Iowa . . . . | 799 | 410 | 6,988 |
| Utah . . . . | 5,076 | 4,860 | 4,625 | Nevada . . . | 740 | 680 | 590 |
| Wyoming . . | 4,712 | 4,500 | 2,683 | Arizona . . . | 702 | 600 | 489 |
| Pennsylvania. | 4,059 | 3,942 | 3,140 | Illinois . . . . | 656 | 624 | 2,862 |
| Arizona . . . | 3,842 | 2,975 | 1,533 | South Carolina | 624 | 546 | 325 |
| Washington . | 3,640 | 3,375 | 5,731 | Indiana . . . | 520 | 600 | 1,164 |

*All other states less than 500,000 bu. in 1947.

The price of barley at the beginning of 1947 averaged $1.36 per bushel to growers and then advanced steadily with other grains to $1.61 in August and $2.00 in December. Demand for barley as livestock feed left only a small carry-over of 56,000,000 bu. on July 1, 1947.

World production of barley in 1947 was estimated at 2,220,000,000 bu., slightly higher than in 1946 and approaching the prewar (1935–39) average of 2,363,000,000 bu. The total for Europe was also above that of 1946 but below the prewar level. Good crops were reported in Denmark, Finland and Spain. The United Kingdom crop was twice that of prewar years but less than in 1945 or 1946. China was approaching a prewar level with 317,000,000 bu. (J. C. Ms.)

**Basalt:** *see* STONE.

## Baseball.

On the morning of Wednesday, April 9, 1947, Albert B. (Happy) Chandler, commissioner of baseball, announced that he had suspended Leo Ernest (The Lip) Durocher, manager of the Brooklyn Dodgers of the National league, from "participating in professional baseball for the 1947 season." This drastic action was unprecedented in the major leagues.

The commissioner's statement on the suspension was specific only in stating the punishment had been meted out as a result of the accumulation of unpleasant incidents which he considered detrimental to baseball, and concluded by imposing an edict of silence on all parties to the controversy.

Durocher's "sentence" was the highlight of a baseball year that saw the spectacular departure of Col. Leland Stanford (Larry) MacPhail from the presidency and part ownership of the New York Yankees on the very day his team won the world's championship by beating the Dodgers; the fining and suspension by Chandler of Leslie O'Connor, general manager of the Chicago White Sox, for signing a high school ball player, then defying the commissioner; the sale of the St. Louis Cardinals' empire by Samuel Breadon to former Postmaster General Robert E. Hannegan; the signing of Jackie Roosevelt Robinson, first Negro ever accepted openly in organized baseball, by the Brooklyn club—and finally, the reappointment of Durocher as the Dodger manager by President Branch Rickey, announced on Saturday, Dec. 6.

It was MacPhail who set in motion the chain of events that led to Durocher's banishment. On March 8 and 9 the Dodgers and Yankees played exhibition games in Havana, Cuba, and Rickey and Durocher allegedly charged that two gamblers occupied the MacPhail box in Grand stadium as the Yankee president's guests, with Rickey quoted as saying "apparently there are rules for Durocher and other rules for the rest of baseball."

On March 15 MacPhail wrote to the commissioner asking investigation and redress for these statements, as well as others appearing in a column signed by Durocher in the *Brooklyn Daily Eagle,* which was "ghost-written" by Harold Parrott, the Dodgers' road secretary.

Out of two hearings called by the commissioner, at Sarasota, Fla., March 24, and at St. Petersburg, Fla., March 28, came the Durocher suspension, fines of $2,000 each against the Yankee and Dodger baseball clubs, a 30-day suspension for Charles (Chuck) Dressen, coach who had quit the Dodgers to work for MacPhail, and a $500 fine against Parrott, along with an order to cease writing the Durocher column.

Rickey, stunned by the loss of his 1947 manager only six days in advance of the season's opening, first offered the vacant post to Joseph V. McCarthy, former Yankee manager. McCarthy refused, the season opened with the Dodgers in temporary charge of Clyde Sukeforth, coach, and two days later Rickey's old friend, Burton Edward Shotton, hurriedly summoned from his Bartow, Fla., home, became the Brooklyn pilot.

Shotton led the Dodgers to a pennant and to the limit in the world series before losing it, thereby stirring vast conjecture as to whether he would be reappointed or Durocher returned to his job.

The conjecture ended with Rickey's Dec. 6 announcement, Shotton accepting a post as overseer of all minor league managers in the Brooklyn farm system.

MacPhail, who had been tremendously successful with the Yankees after taking over in 1945, made a highly dramatic announcement of his resignation, choosing the big moment in the Yankee clubhouse when the final putout of the seventh game made the Yankees world champions.

"That's it!" he shouted. "I quit right now!"

Dan Topping and Del Webb, MacPhail's partners, announced that they had purchased MacPhail's stock and that Topping would become president of the club. On Oct. 17 MacPhail came back to the city and issued a long statement, the chief points of which were that he had received $2,000,000 for his stock and that the deal for its purchase had been agreed upon by his two partners and himself on Sept. 18. MacPhail's contract as a high-salaried executive, which had three years to run, was abrogated by mutual agreement.

Leslie O'Connor, general manager of the Chicago White Sox and for 24 years the right-hand man of K. M. Landis when the judge was baseball's tsar, had signed a young player from a high school not affiliated with the National Federation of State High Schools. The commissioner previously had issued a bulletin that, despite the rule specifying only federation youths, he would interpret it as applying to any and all high school players.

With the idea of making it a test case and claiming the commissioner could not alter baseball rules thus, O'Connor signed the player. When Chandler find him $500, then suspended O'Connor and his club because the fine wasn't paid, O'Connor threatened to go into the civil courts.

The big bombshell failed to explode, however, when O'Connor's employers failed to back him and agreed to pay the fine. O'Connor subsided and offered his resignation, which was not accepted, and he returned to his post, later also being re-elected as a member of baseball's executive council which is headed by the commissioner.

Breadon's sale of the Cardinals to a syndicate headed by Hannegan for a reported price of $3,500,000 for the St. Louis club and all its minor-league holdings was announced in St. Louis on Nov. 25. The physical property included ball parks and teams in Columbus, O., American association; Rochester, N.Y., International league, and Houston, Texas, league. The organization also owned 14 other clubs in the lower minor classifications.

Hannegan, with a controlling interest, became president, with Fred M. Saigh, Jr., St. Louis attorney and real estate man, and chief associate in the purchase, becoming vice-president and treasurer.

Breadon, who was more than 70 years old, thus ended a 27-year operation of the club which had been increasingly successful. His Cardinal teams, beginning in 1926, brought him nine pennants and six world championships, and in 1946 and 1947 more than 1,000,000 paid attendance.

Jackie Robinson, Negro second baseman, became a full-fledged Dodger on April 10, Rickey announcing the purchase of Jackie's contract from the Montreal Royals the day following Durocher's suspension and five days before the National league pennant race began. Robinson was transferred to first base and there proved himself a real major leaguer. His hitting, base stealing and general all around play became a big factor in the Dodgers winning the pennant.

Rumbles of opposition among players throughout the National league were heard long before Robinson's elevation, with a players' strike among the St. Louis Cardinals reported to have been in process of planning. Unexpected publicity killed this idea, if indeed it had been seriously contemplated, and Robinson played against all National league teams with unpleasant incidents at a minimum and none of them serious.

Later the Cleveland American league club, owned by Bill Veeck, signed Larry Doby, a Negro, and the St. Louis Browns signed two others. But none was of major league calibre. Near mid-September Rickey signed a second Negro, a pitcher from Memphis named Dan Bankhead, who had yet to demonstrate major league ability when the season ended.

It was an all-time banner year for organized baseball at the box office, both majors and minors achieving new high marks, the combined total—all official figures—being 60,148,795.

For the first time in major league history the National league reached an eight-figure total—10,388,470—six clubs going over the 1,000,000 mark and five of them setting records. Two of the three American league clubs that topped 1,000,000 also set records in attendance.

The minor leagues' total attendance of 40,274,256 was more than 7,500,000 over the 1946 figure, and the latter had been almost double the previous high mark, indicating that baseball prosperity was not just a postwar boom but had acquired something resembling permanence.

A comparison of major league attendances for 1945–47 may be found in Table I on page 112.

**Ownership, Personnel Changes.**—There were no other major league ownership shifts, apart from the Cardinal sale and Yankee change engendered by MacPhail's departure, but two important minor league purchases were made. The New York Giants bought the Minneapolis club of the American association and the Brooklyn Dodgers acquired the St. Paul club of the same league, thus extending into their farm systems the

**AL GIONFRIDDO**, outfielder for the Brooklyn Dodgers, making the outstanding catch which saved the sixth game of the 1947 world series for his team and made a seventh deciding game necessary

torrid National league rivalry that had existed for years.

There were four major league managerial changes, the one of top interest being the appointment of Joe McCarthy as field manager of the Boston American league club to succeed Joe Cronin, the latter moving up as the club's general manager. It was "Marse Joe's" third major league managerial post in two leagues, having first piloted the Chicago Cubs, winning a pennant there in 1929. In 14 seasons as manager of the New York Yankees he won eight flags and seven world series. McCarthy was in retirement on his farm at East Amherst, N.Y., in 1947. Announcement of his appointment was made in New York on Sept. 29, the day before the world series opened.

Billy Meyer, for years a successful minor league manager, was picked to manage the Pittsburgh Pirates, of the National league, succeeding Billy Herman, who was let go by the Pittsburgh management after one season's effort which brought negligible results, his team finishing in a tie for last place with the Philadelphia club.

Herold (Muddy) Ruel similarly was dropped by the St. Louis Browns, of the American league, and James Wren (Zack) Taylor, former major league catcher, was named for the post. Taylor, a coach for the Browns, had acted as manager for a few weeks of the 1946 season after Luke Sewell had been dismissed.

The fourth new manager was Joe Kuhel, veteran first baseman, who was named by president-owner Clark Griffith to direct the Washington American leaguers for 1948. Kuhel succeeded Oscar Bluege, who remained in the organization in an official capacity.

Two former major league stars won minor league managerial posts. Dick Bartell, who piloted Sacramento in the Pacific Coast league in 1947, was named to succeed Meyer at Kansas City in the American association, while Stanley Hack, for years ace third baseman of the Chicago Cubs, drew the Des Moines (Iowa) club of the Western association.

Henry (Hank) Greenberg, home-run hitter of the Detroit Tigers, was sold by that club early in the year to the Pittsburgh Pirates, where he drew a fabulous salary—estimated at $75,000—for the 1947 season. Shortly after the pennant race ended Greenberg was unconditionally released and early in December underwent surgery for the removal of a bone spur from his right elbow, a condition which had hampered his playing. His future in baseball was in doubt as the year ended.

Outstanding player deals were the trading of Fred (Dixie) Walker, an idol of Brooklyn fans for nine years, to the Pittsburgh Pirates on Dec. 10, and the mass sale of its star players by the St. Louis Browns, most of them to the Boston Red Sox. On Nov. 17 Vernon Stephens, shortstop, and Jack Kramer, right-handed pitcher, went to the Sox for a reported $310,000 and several unnoted players. The following day $65,000 more Boston money went to St. Louis for Ellis Kinder, another talented pitcher, and Billy Hitchcock, infielder. The Browns then turned to Cleveland, that club giving them another bundle of cash for Bob Muncrief, capable right-handed pitcher, and Walter Judnich, hard-hitting outfielder.

These sales brought a protest from Dan Topping, Yankee

ALL-STAR GAME at Wrigley field, Chicago, where more than 40,000 spectators jammed the bleachers on July 8, 1947, to watch the American league team defeat the National league players 2 to 1

president, that the Browns, who had finished deep in the American league cellar, were making it a league of only seven clubs. William C. DeWitt, Browns' general manager, stoutly defended the sales, pointing out that since the Browns had finished in last place with star players, they could not do any worse with other, and younger, players.

Another Browns' star, second baseman Johnny Berardino, was dealt to the Washington club but the deal was cancelled by mutual consent when Berardino announced he would quit baseball to fulfil a seven-year contract as a motion picture actor. Later Berardino was traded to Cleveland for outfielder George Metkovich and $60,000—and the Browns were richer by approximately $500,000, although poorer in playing talent.

Edward Grant Barrow, the man who had directed the Yankee baseball empire for so many years until MacPhail took over the top job, resigned as chairman of the board of directors on Jan. 8, ending a lifetime association with baseball.

**"The Third Major League."**—A proposal, long and enthusiastically backed by Clarence (Pants) Rowland, president of the Triple A Pacific Coast league, to give that league major league status was given the thumbs down treatment by the American and National leagues in their joint meeting in New York on Dec. 11. The majors' answer was to the effect that the Pacific coast loop could not qualify, on the seating capacity of its ball parks, the calibre of its play or on any other count, in fact, for such status.

A second proposal from Rowland and his league officials, giving his league a classification above Triple A in order to take players of the loop out of the present draft by which major league clubs acquire certain minor league players for a set price of $10,000, raising that draft price to $25,000 and extending the time limit of player retention to six years instead of four, also was turned down.

Commissioner Chandler had favoured a plan to expand the two major leagues to ten clubs each instead of eight, the idea, of course, being to bring the California cities of Los Angeles, San Francisco, Oakland and Hollywood into the majors. The commissioner, however, did not bring his plan before the joint meeting. It was understood the National league had voted unanimously for such a move but the American league voted five to two against, with Cleveland abstaining.

**Players' Pension Plan.**—Plans for the players' pension were practically completed early in the year by a special major league committee headed by Commissioner Chandler and aided by insurance experts. The plan demanded that $675,000 annually be put into the retirement fund. The pension eligibility age was lifted from 45 to 50 years, eligibility requirement was made ten years of service in the major leagues and the maximum collection $100 monthly.

Players would pay in yearly sums ranging from $45.45 the first year, $90.90 the second, to $454.75 the tenth year, the latter amount the maximum. After paying in $2,500, players' annual contributions would be reduced to $250 each.

The clubs were to supply 80% of the fund, each owner paying in $250 annually for each player, and would also make other contributions. Radio receipts from the world series, $175,000, and the net profit from the All-Star game would go into the fund. The committee ruled that if less than 60% of the personnel of any club failed to sign up for annual contributions, such club's players could not share in pension benefits. It was also made clear that unless 75% of major league players contributed, the pension setup could not work.

Since the world series' radio income was permanently allocated to the fund, club owners would be forced to make financial guarantees to world series' players. The owners previously had voted that the players' pool in any series must amount to at least $250,000. If it was less—and it had been—the owners must make up the deficit.

**Mexican Invasion Ended.**—The spending spree of the Mexican league under the aegis of Jorge Pasquel, during which numerous players from the major leagues jumped to that loop and were banned from organized baseball for five years, came to an

Table I.—*Major League Attendance Figures, 1947, 1946 and 1945*

NATIONAL LEAGUE

| | 1947 | 1946 | 1945 |
|---|---|---|---|
| Brooklyn | 1,807,526* | 1,796,155 | 1,064,668 |
| New York | 1,600,793* | 1,234,733 | 1,038,195 |
| Chicago | 1,364,039 | 1,342,970 | 1,037,026 |
| Pittsburgh | 1,283,531* | 759,117 | 623,398 |
| Boston | 1,277,361* | 987,109 | 410,146 |
| St. Louis | 1,247,913* | 1,063,203 | 594,207 |
| Philadelphia | 907,332 | 1,045,245 | 310,389 |
| Cincinnati | 899,975 | 717,751 | 294,790 |
| Total | 10,388,470* | 8,946,283 | 5,372,819 |
| AMERICAN LEAGUE | | | |
| New York | 2,178,937 | 2,262,512 | 881,845 |
| Cleveland | 1,521,978* | 1,057,289 | 558,182 |
| Boston | 1,427,315* | 1,416,944 | 603,794 |
| Detroit | 1,398,593 | 1,722,590 | 1,280,341 |
| Philadelphia | 911,966 | 621,793 | 462,631 |
| Chicago | 876,948 | 983,403 | 657,981 |
| Washington | 850,758 | 1,027,216 | 652,660 |
| St. Louis | 320,474 | 526,435 | 482,986 |
| Total | 9,486,069 | 9,621,182 | 5,580,420 |
| Grand Total | 19,874,539 | †18,567,465 | 10,953,239 |

*New all-time high.
†Gain of approximately 6.6% over 1946 attendance total.

end during 1947. With Alejandro Aguilar Reyes returning as high commissioner of Liga Mexicana—a post he held for 17 years until 1942—the league adopted a new policy of building up "beisbol" by cultivating native talent. Thus the Mexican raids disappeared along with the baseball union—but not before U.S. players had improved their lot as a result of these twin threats to baseball's peace of mind.

**The Pennant Races.**—In 1947 the rejuvenated New York Yankees, under their new manager, Stanley (Bucky) Harris, and the Dodgers, directed by Shotton, took the respective league flags.

From the start of the American league campaign the Yankees never were more than two or three games off the pace, which was set early by the Detroit Tigers, and on Saturday, June 21, Harris' men took a doubleheader from the Tigers at the Yankee stadium to attain first place by one and a half games.

They held the lead, gradually increasing it until the season's end, at which time they were 12 games in front of the second place Tigers, with the Red Sox finishing third, 14 games from the top. The Red Sox, in fact, reached the top only once—on June 19, when they were two games ahead of New York and Detroit. Ten days later the Yankees began a winning streak that extended to 19 games—the season's longest in the majors, tying an American League mark—before it was broken in Detroit in a twilight game when Freddy Hutchinson, big right-handed pitcher, shut them out for the Tigers, 8-0. During this remarkable victory skein, six pitchers turned in 11 complete games, including 4 by Allie Reynolds.

On Monday, Sept. 15, the Yankees clinched the pennant while sitting idly in their clubhouse because of rain. The Red Sox supplied the clincher by losing the first game of a doubleheader in Boston to the Chicago White Sox. Thereafter the New Yorkers merely played out their schedule.

One surprising angle of the race was the early season showing of the Philadelphia Athletics, under baseball's "Grand Old Man," Cornelius McGillicuddy (Connie Mack). Connie had his boys in the first division during most of June and on June 19—the one day that found the Red Sox at the top—the Athletics were only two and one-half games out of first place. However, they finished fifth, 19 games off the pace.

The National league, as usual, developed another "dog-fight" for the flag during the first half of the campaign, five different clubs occupying first place at various times. Oddly enough, the world champion St. Louis Cardinals, picked by a majority of observers to repeat as pennant winners, were not even first division contenders until late June.

Hampered by injuries and illnesses, especially the appendicitis attack suffered by Stanley Musial, star first baseman, 1946 batting champion and his league's most valuable player, the Red Birds got off to a sad start and didn't even emerge from the league cellar until June 10. Then their drive upward was too late to lift them higher than second place, which position they clinched on Sept. 25.

Meanwhile the Pittsburgh Pirates, the Boston Braves, the Chicago Cubs and the Brooklyn Dodgers were involved in the battle for first place. The Pirates, who eventually wound up in a tie for the cellar, were on top for the first six days of the season. Thereafter they began a steady descent and the fighting was left to the Dodgers, Braves and Cubs.

The Dodgers achieved the top for the first time on April 26, remaining there until May 9; then the Cubs, Giants and Braves alternated in taking the lead, the latter two clubs holding it for a week each, at different times. On July 2 the Dodgers hit the top again, lost the lead by two percentage points to the Braves on July 5, then on the following day went into the lead to stay when Ralph Branca, big 20-year-old ace right-hander, whitewashed Boston with three hits.

On July 11 the Dodger lead was three games, which was the lengthiest the close race had produced up to that point. It hovered around three and two and one-half games for another fortnight, then as the Cardinals began to surge forward the other clubs dropped back. By means of a winning streak of 8 games and losing only 1 in a string of 12, the Red Birds got within 3 games of the leading Dodgers, but that was their high point.

At the end the Cards were 5 games back of the Dodgers, who had annexed their fourth pennant since the turn of the century by winning 94 games, 2 fewer than in the previous year when the pennant eluded them.

There were three no-hit games, only one in the National league. On June 18 Ewell Blackwell, lanky right-hander of the Cincinnati Reds, turned back the Boston Braves with no hits, the Reds winning 6-0.

In the American league Don Black, of the Cleveland Indians, pitched his no-hitter in the first game of a doubleheader with the Philadelphia Athletics at Cleveland.

The man who was the losing pitcher in Black's classic—Bill McCahan, of the Athletics—hurled the other junior circuit no-hitter against Washington in Philadelphia on Sept. 3, winning by the same score, 3-0. An unfortunate error by Ferris Fain, Philadelphia first baseman, prevented McCahan from accomplishing the much more rare feat of pitching a perfect game. In the second inning Fain made a bad throw after fielding a grounder from Stan Spence—and Spence became the only Senator to reach first base during the nine innings.

Four triple plays, a rarity considering the number of games that are played without one being made, were turned in during the major league season. The National league made three of them—Pittsburgh made the first one on April 26 at Cincinnati, the Chicago Cubs at Cincinnati on Aug. 9, and the St. Louis Cardinals at Philadelphia on Aug. 23. The latter was an oddity in triple plays, in that Charley Gilbert, the batsman, in attempting to bunt popped a foul to the catcher and two base-runners, who were "off and running," were caught off base to complete the play.

The American league triple killing was made by the Chicago White Sox against the Browns in St. Louis on April 27 and was made possible by bad base-running on the part of two Brown players who were on base when a simple ground ball was hit to the White Sox third baseman.

In addition to his no-hitter Black also had the distinction of pitching the fastest game in the majors when, with John Rigney as his mound opponent, he blanked the Chicago White Sox, 1-0, at Chicago in a contest that required only 1 hr. 20 min.

Table II.—*Final Standings of Major League Clubs, 1947*

NATIONAL LEAGUE

| Club | Bkn. | St. L. | Bost. | N.Y. | Cin. | Chi. | Phila. | Pitts. | Won | Lost | Pct. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Brooklyn | .. | 11 | 10 | 14 | 15 | 15 | 14 | 15 | 94 | 60 | .610 |
| St. Louis | 11 | .. | 13 | 9 | 14 | 12 | 14 | 16 | 89 | 65 | .578 |
| Boston | 12 | 9 | .. | 13 | 13 | 13 | 14 | 12 | 86 | 68 | .558 |
| New York | 8 | 13 | 9 | .. | 9 | 15 | 12 | 15 | 81 | 73 | .526 |
| Cincinnati | 7 | 8 | 9 | 13 | .. | 10 | 13 | 13 | 73 | 81 | .474 |
| Chicago | 7 | 10 | 9 | 7 | 12 | .. | 16 | 8 | 69 | 85 | .448 |
| Philadelphia | 8 | 8 | 8 | 10 | 9 | 6 | .. | 13 | 62 | 92 | .403 |
| Pittsburgh | 7 | 6 | 10 | 7 | 9 | 14 | 9 | .. | 62 | 92 | .403 |

AMERICAN LEAGUE

| Club | N.Y. | Det. | Bost. | Clev. | Phila. | Chi. | Wash. | St. L. | Won | Lost | Pct. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| New York | .. | 14 | 13 | 15 | 13 | 12 | 15 | 15 | 97 | 57 | .630 |
| Detroit | 8 | .. | 10 | 14 | 11 | 15 | 12 | 15 | 85 | 69 | .552 |
| Boston | 9 | 12 | .. | 9 | 10 | 16 | 12 | 15 | 83 | 71 | .539 |
| Cleveland | 7 | 8 | 13 | .. | 11 | 11 | 13 | 17 | 80 | 74 | .519 |
| Philadelphia | 9 | 11 | 12 | 11 | .. | 11 | 11 | 13 | 78 | 76 | .506 |
| Chicago | 10 | 7 | 6 | 11 | 11 | .. | 14 | 11 | 70 | 84 | .455 |
| Washington | 7 | 10 | 10 | 9 | 11 | 8 | .. | 9 | 64 | 90 | .416 |
| St. Louis | 7 | 7 | 7 | 5 | 9 | 11 | 13 | .. | 59 | 95 | .383 |

**All-Star Game.**—This inter-league midseason fixture, 14th since its inception, was played at Wrigley field, Chicago, July 8, and resulted in the 10th triumph for the American leaguers. The score was 2-1. Johnny Mize, New York Giants' slugging first baseman, made the losers' only tally with a home run off Frank Shea, rookie right-hander of the New York Yankees, in the fourth inning.

Shea, however, became the winning pitcher when the Americans pushed over one run in the sixth against Harry (the Cat) Brecheen, famous St. Louis Cardinal southpaw, and scored the winning run off Johnny Sain, Boston Braves' right-hander, in the next inning. Joe Gordon, Cleveland second baseman, singled, stole second base and reached third on a wild throw by Sain. Then, with two out, Stan Spence, Washington outfielder, hit a pinch single to drive in the run. Seventy-five per cent of the receipts of $105,315 was turned over to the players' pension fund.

**The World Series.**—Scarcely anything that could happen in a world series failed to occur in this 44th renewal of baseball's no. 1 event, which, incidentally, was the 7th so-called "subway series," the New York Yankees being a participant in all of them, the New York Giants in five and the Brooklyn Dodgers in two.

The affair went the limit of seven games, the Yankees winning four games to three for their 11th triumph against only four series setbacks since they won their first pennant in 1921.

The seven games produced, among other things, the unique spectacle of a pitcher being beaten by the only hit he allowed after two were out in the ninth inning; a relief pitcher winning two consecutive games; a substitute outfielder making the most spectacular catch in series history; one competitor (the Dodgers) using 27 pitchers, including the aforesaid relief pitcher (Hugh Casey) in six games; six pitchers, three from each team, making a total of eight wild pitches; one batsman (Yogi Berra) hitting the first pinch home run in series history, and a pinch hitter and two pinch runners winning the one-hit game mentioned above.

It also was the richest series, the total attendance of 389,763 and receipts of $2,021,348.92 being new high marks for a seven-game affair. The players cut a financial melon of $493,674.83, the winning Yankees dividing $207,343.43 of this amount. The players' pension fund was enriched by $175,000 realized from sale of the broadcasting rights, money that in previous years had been added to the players' pool.

The Yankees, pronounced favourites in the betting, became prohibitive choices after winning the first two games, but the odds were shaved sharply when the Dodgers won the next two to even matters.

Scores of the seven games, the first and final two in the Yankee stadium and the other three at Ebbets field, Brooklyn, were: Yankees 5, Dodgers 3; Yankees 10, Dodgers 3; Dodgers 9, Yankees 8; Dodgers 3, Yankees 2; Yankees 2, Dodgers 1; Dodgers 8, Yankees 6; and Yankees 5, Dodgers 2.

There were five home runs, two by Joe Di Maggio and one each by Tommy Henrich and Berra, while Dixie Walker struck the only four-base blow for the Dodgers. Two pitchers won two games each, Frank Shea for the Yankees and Hugh Casey for Brooklyn.

In stolen bases the Dodgers were in front, seven to two. Harold (Pee Wee) Reese pilfered three, Jackie Robinson two and Walker and Al Gionfriddo one each, the latter the most important base theft of the series. Phil Rizzuto stole twice for the Yankees.

With almost perfect weather prevailing and no interruption necessitated for travelling between cities the series was run off in seven straight days, opening on Tuesday, Sept. 30, and concluding on Monday, Oct. 6.

The first game started as a pitching duel between the two talented right-handers, Branca and Shea, with the Brooklyn youngster having a decided edge in the first four innings. But he blew up in the fifth and the Yankees won the game.

The second game was pretty much of a romp for the Yankees.

The third game, however, saw the Dodgers win the first game of their uphill battle, a free-hitting affair that extended 3 hr. 5 min. for a world series longevity record that eclipsed the previous mark of 2 hr. 54 min. also set by the Yankees and Dodgers on Oct. 5, 1941, in Brooklyn.

Next day the Dodgers evened the series at two games each in a contest unmatched in the history of baseball's classic. Casey made just one pitch to become the first relief pitcher to win two consecutive world series games; Harry (Cookie) Lavagetto, Oakland, Calif., veteran, swung his bat just twice (missing the first swing) to win the game, and the hit Cookie made, with two out in the ninth inning, was the only one allowed by Floyd (Bill) Bevens, big right-hander from Salem, Ore.

### Table III.—*League Leaders*

BATTING

First Ten in Each League

| National League | G | AB | R | H | Pct. |
|---|---|---|---|---|---|
| H. Walker, Philadelphia | 140 | 514 | 81 | 186 | .363 |
| Elliott, Boston | 150 | 555 | 95 | 176 | .317 |
| Galan, Cincinnati | 124 | 392 | 60 | 123 | .314 |
| Kiner, Pittsburgh | 152 | 565 | 119 | 177 | .313 |
| Musial, St. Louis | 149 | 589 | 113 | 183 | .311 |
| Kurowski, St. Louis | 146 | 513 | 107 | 159 | .310 |
| Cavarretta, Chicago | 127 | 459 | 54 | 142 | .309 |
| Holmes, Boston | 150 | 617 | 91 | 190 | .308 |
| Reiser, Brooklyn | 110 | 389 | 68 | 120 | .308 |
| F. Walker, Brooklyn | 148 | 529 | 77 | 162 | .306 |
| American League | | | | | |
| Williams, Boston | 156 | 528 | 125 | 181 | .343 |
| McCoskey, Philadelphia | 137 | 545 | 77 | 180 | .330 |
| Pesky, Boston | 155 | 638 | 107 | 207 | .324 |
| Wright, Chicago | 124 | 401 | 48 | 130 | .324 |
| Kell, Detroit | 152 | 588 | 75 | 188 | .320 |
| Mitchell, Cleveland | 123 | 493 | 69 | 156 | .316 |
| J. Di Maggio, New York | 141 | 534 | 100 | 168 | .315 |
| Boudreau, Cleveland | 150 | 538 | 79 | 165 | .307 |
| Appling, Chicago | 138 | 503 | 67 | 154 | .306 |
| McQuinn, New York | 147 | 517 | 91 | 157 | .304 |

HOME RUNS

| National League | | American League | |
|---|---|---|---|
| Mize, New York | 51 | Williams, Boston | 32 |
| Kiner, Pittsburgh | 51 | Gordon, Cleveland | 29 |
| Marshall, New York | 36 | Heath, St. Louis | 27 |
| W. Cooper, New York | 35 | Cullenbine, Detroit | 24 |
| Thompson, New York | 29 | York, Chicago | 21 |

RUNS BATTED IN

| National League | | American League | |
|---|---|---|---|
| Mize, New York | 138 | Williams, Boston | 114 |
| Kiner, Pittsburgh | 126 | J. Di Maggio, New York | 97 |
| W. Cooper, New York | 122 | Henrich, New York | 97 |
| Elliott, Boston | 112 | Jones, Boston | 96 |
| Marshall, New York | 106 | Doerr, Boston | 96 |

Shea dominated the fifth game with his four-hit pitching to score his second triumph and put the Yankees ahead once more, three games to two.

Once more, in the sixth encounter, the Dodgers were able to even matters as the battle moved back to the Yankee stadium to produce the second great thrill of the series when Di Maggio was robbed of a third home run by the tiny substitute outfielder, Gionfriddo.

There were two Yankees on base and two out when Di Maggio came to bat in the sixth with the Dodgers leading, 8-5. A home run would tie the score and Di Maggio hit it—but Gionfriddo took it away from him! Joe Hatten, third of the Dodger pitchers, was on the mound when Di Maggio sent a towering drive toward the left field bleachers, 415 ft. away. Gionfriddo, who had just been inserted in left field in place of Miksis, raced back toward the stands and just as the ball was going over the low gate that leads to the visiting "bull pen" the little fellow reached over the barrier with his gloved hand to make a backhanded catch and save the game.

In the final game Joe Page, whose fine relief pitching during the season was an outstanding factor in winning the pennant, came into his own. His fourth and final relief appearance in the series was an almost perfect job. Working the last five innings Page faced the minimum of 15 men and allowed only one hit, a ninth inning single by Miksis after one was out. Edwards promptly grounded into a double play to erase Miksis, end the game and give the Yankees the world's championship.

With this triumph the American league's margin of superiority over the senior circuit was increased to 27 victories in 44 world series played since its inception in 1903.

**Individual Achievements.**—The fourth annual award of the Kenesaw Mountain Landis Memorial trophies for the most valuable player in each major league went to Joe Di Maggio of the New York Americans and Bob Elliott of the Boston Nationals by vote of the two 24-man committees of the Baseball Writers' Association of America.

The National league batting title went to Harry Walker, Philadelphia, younger brother of Brooklyn's Dixie, with an average of .363, high in both leagues, while Williams hit .343 to top the American league. Ted also led his league in home runs with 32 and in runs batted in with 114.

Home-run leadership in the National league was shared by Mize and Ralph Kiner, Pittsburgh, with 51 each, nine short of the all-time record established by the one and only Babe Ruth. Mize led in runs batted in with 138 and four other National leaguers exceeded the century mark in this respect.

Brooklyn's Stanky not only led all second basemen in fielding but set a modern National league record with an average of .9853, eclipsing the mark of .9851 set by Linus Frey with Cincinnati in 1943. This gave Stanky two records, the other being the high league mark of 148 bases on balls in 1945.

John (Buddy) Kerr, Giants' shortstop, added to two major league records he already held by playing through 68 consecutive games (52 in 1946 and the first 16 of 1947) without an error and also extended his string of consecutive chances without a misplay to 383.

In pitching the National league far outdistanced the American league, producing five hurlers who won 20 or more games while the junior loop had only one—the famous Bobby Feller, of Cleveland, who won exactly 20 and lost 11. Feller struck out 196 men, only three more than Blackwell, Cincinnati, for the major league leadership in that respect.

But Blackwell won the most games, 22, pitched the most complete games, 23, and also turned in the longest winning streak, 16 games.

Warren Spahn, Boston Braves' southpaw pitcher, had the low earned-run average of 2.33 to lead both leagues, with Spurgeon Chandler, New York Yankees' veteran right-hander, topping the American league with 2.46.

The leading percentage pitcher was Lawrence (Larry) Jansen, New York Giants' freshman right-hander, who won 21 and lost five for a mark of .808, while Frank Shea, Yankees' first year right-hander, led the American league with 14 victories and five losses for a percentage of .737.

The five top winning pitchers in the National league were Blackwell, Spahn, Jansen, Johnny Sain, Boston, and Ralph Branca, Brooklyn.

Leaders in batting, home runs and runs batted in may be found in Table III.

Four of baseball's greatest modern stars were voted into the Hall of Fame at Cooperstown, N.Y., by the ballots of 161 veteran members of the Baseball Writers' Association of America late in January. They were Carl Owen Hubbell, left-handed pitcher, whose fame was achieved with the New York Giants; Robert Moses (Lefty) Grove, another great southpaw, whose most brilliant years were with the Philadelphia Athletics; Gordon (Black Mike or Mickey) Cochrane, catcher with the Athletics and later manager of the Detroit Tigers, and Frank (Fordham Flash) Frisch, for years talented second baseman for the Giants, later second baseman and manager of the St. Louis Cardinals when that club won the name of "The Gas House Gang," and still later pilot of the Pittsburgh Pirates.

In addition to this quartet, 11 famous players of a bygone era were enshrined in the Hall of Fame, their selection being made by a special committee of men who were active in baseball four decades ago. The names of the 11 old timers follow:

John Dwight Chesbro, pitcher for Pittsburgh in the National, and Boston and New York in the American league, who won 41 games in 1904; Joseph B. Tinker, John Joseph Evers and Frank LeRoy Chance, famous Chicago Cubs infield combination in the early 1900s; George Edward (Rube) Waddell, brilliant and eccentric southpaw pitcher of the Philadelphia Athletics; Edward Arthur Walsh, outstanding right-hander for the Chicago White Sox from 1904 to 1916; Jesse C. Burkett, star batsman, who hit more than .400 to win the batting titles in 1893 and 1896; Joseph Jerome (Iron Man) McGinnity, who on five occasions pitched two games in one day, three times winning both games, and won 20 or more games in seven seasons with Baltimore, Brooklyn and New York; Thomas F. McCarthy, outstanding base-runner, who stole 109 bases with the St. Louis Browns in 1888; Edward S. Plank, 14 years with the Philadelphia Athletics from 1901, one of the greatest left-hand pitchers and one of very few to win more than 300 games; and Clark C. Griffith, president-owner of the Washington American league club, with a 50-year background as pitcher, manager and executive.

**The Minor Leagues.**—Twenty minor league clubs which finished first, either in a full season or split season, also came out ahead in play-offs.

In the Triple A loops Minneapolis won the junior world series from Syracuse, four games to three, although neither had won the pennant in its league, the American association and International league, respectively. Both had finished third and won the right to meet in the series by winning the play-offs.

Los Angeles, winning the Pacific Coast league pennant in a one-game play-off with San Francisco, went on to win the play-off crown by defeating Portland, Ore., and Oakland, Calif., each by four games to one. It was the first time in five years that Lefty O'Doul's San Francisco Seals had failed to win this title.

In the Double A circuits Houston not only won both pennant and play-off in the Texas league but defeated the Southern association's pennant winner, Mobile, four games to two, to take the Dixie series.

(Ro. McG.)

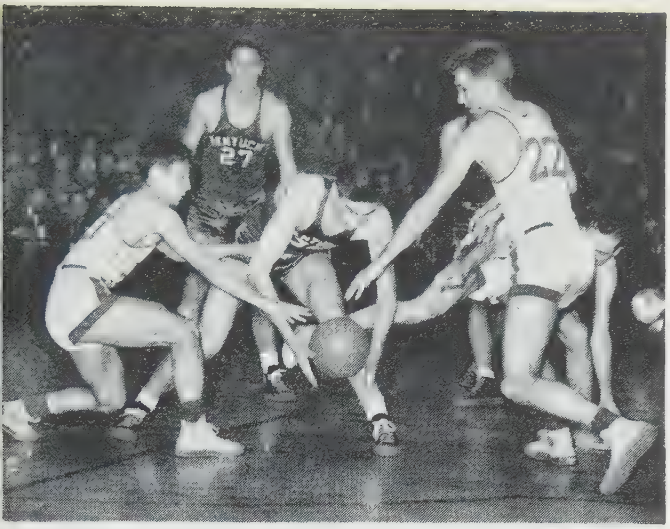
**Basketball.** Holy Cross college of Worcester, Mass., gained the basketball pinnacle for 1946–47 by winning the National Collegiate Athletic association tournament. Holy Cross defeated Oklahoma university, Norman, Okla., 58 to 47, in the final at Madison Square Garden after stopping Navy and City College of New York in the eastern regional tests. The final between Holy Cross and Oklahoma was tied on 11 different occasions, and brought George Kaftan the rating of the N.C.A.A.'s most valuable player on the 18 points he scored for Holy Cross.

Utah captured the National Invitation tournament with a 49–45 victory over Kentucky in the final. Earlier, Utah defeated Duquesne, 45 to 44, and West Virginia, 64 to 62.

Columbia topped the Eastern Intercollegiate league with 11 victories and 1 defeat, while St. John's dominated the metropolitan New York sector with a 6–0 record. Kentucky won its fourth straight Southeastern conference crown as well as its 10th title in 14 years. In the Southern conference, North Carolina State outlasted North Carolina university and Duke to gain the championship.

Wisconsin won a heated Western conference race with a 9–3 record, one game ahead of Indiana and Illinois. Notre Dame led independent play in the middle west with 20 victories in 24 games.

Oklahoma university, with an 8–2 league record, won the Big Six title, while Texas was unbeaten in the Southwest confer-



A TIGHT PLAY during the title game of the National Invitation basketball tournament in New York city on March 24, 1947. Utah scored a victory of 49-45 over Kentucky

ence, winning 12 straight games. Wyoming repeated as champion of the Big Seven, while Oregon State won the Northern and University of California at Los Angeles captured the Southern titles of the Pacific Coast conference. Oregon State beat U.C.L.A. in the playoffs, 69 to 22 and 64 to 46.

For the fifth straight time, Phillips "66" of Bartlesville, Okla., won the A.A.U. championship. The Oilers had little trouble outlasting the 52-team field and defeated the Oakland, Calif., Bittners, 62 to 41, in the final.

The Atlanta, Ga., Sports Arenas ended a three-year reign of women's A.A.U. basketball by the Goldblumes of Nashville, Tenn. Led by Alline Banks, eight times All-American, the Atlanta team defeated the Goldblumes, 26 to 22, in the final. Alline Banks forced the title game into overtime with the basket which made the score 22–22, and scored the tie-breaking field goal early in the extra period.

With the Basketball Association of America completing its first full season, professional basketball gained considerable impetus in 1947. Philadelphia won the B.A.A. crown in a playoff with Chicago. The National league title went to Rochester, N.Y., with the American Gears of Chicago winning the league playoffs and Indianapolis finishing first in the pro tournament.

A third professional league was organized on a 16-team basis late in 1947 by Maurice White of Chicago, but was abandoned after two weeks of play. The College All-Stars defeated Indianapolis, 58 to 52, in their annual game which unofficially opened the 1947–48 season. (M. P. W.)

**Basutoland:** *see* British South African Protectorates.
**Battleships:** *see* Navies of the World.

## Bauxite.

World production data on bauxite are shown in Table I, so far as figures were available from the major producing countries.

Table I.—*World Production of Bauxite*

(Thousands of short tons)

| | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|---|
| Br. Guiana . | 699.4 | 1,169.5 | 1,340.1 | 2,115.4 | 1,023.1 | 747.9 | 1,254.4 |
| France . . . | 538.0 | 647.5 | 705.0 | 1,010.1 | 733.7 | 278.2 | 527.1 |
| Gold Coast . | . . . | 16.4 | 49.3 | 179.3 | 118.9 | 163.7 | 128.7 |
| Greece . . | 83* | 20* | 25* | 27* | 11* | ? | ? |
| Hungary . . | 770* | 794.0 | 1,145.0 | 1,102.3 | 992.0 | ? | ? |
| taly . . . | 629.8 | 591.8 | 561.6 | 232* | ? | 2.8 | 72.1 |
| Neth. Indies . | 302.4 | 189.4 | 300* | 660* | 300* | ? | ? |
| Surinam . . | 679.4 | 1,321.0 | 1,353.1 | 1,824.5 | 689.8 | 754.0 | 629.0 |
| U.S.S.R. . . | 330* | 275* | 300* | 385* | 440* | 440* | ? |
| United States | 491.9 | 1,049.5 | 2,914.3 | 6,980.8 | 3,162.6 | 1,098.8 | 1,201.5 |
| Yugoslavia . | 319.7 | 255.1 | 264.5 | 220* | 165* | ? | ? |
| Total . . | 4,840* | 6,656* | 9,330* | 15,583* | 7,867* | 4,080* | 4,400* |

*A number lacking a decimal is an estimate.

There were sharp postwar increases in output in British Guiana, France and Hungary.

**United States.**—The salient features of the bauxite industry in the United States are outlined in Table II.

In 1946 increases were recorded both in production and imports, with the improvement continuing into 1947. Domestic production (dried equivalent) amounted to 1,027,428 short tons in the first three-quarters of 1947, and imports (as shipped) were 1,608,072 tons, making a total supply of 2,635,500 tons for the period.

Table II.—*Data of Bauxite Industry in the U.S., 1940–46*

(Thousands of short tons)

| | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|---|
| Mine production . . . . . | 571 | 1,215 | 3,381 | 8,157 | 3,721 | 1,283 | 1,474 |
| Dried equivalent . . . . | 492 | 1,050 | 2,914 | 6,981 | 3,163 | 1,099 | 1,202 |
| Shipments, crude . . . . . | 568 | 1,162 | 3,224 | 7,896 | 3,677 | 1,469 | 1,509 |
| Dried equivalent . . . . | 490 | 1,005 | 2,777 | 6,733 | 3,125 | 1,283 | 1,231 |
| Imports (Dried equivalent) | 705 | 1,251 | 990 | 1,727 | 622 | 826 | 953 |
| Exports (Dried equivalent) | 135 | 245 | 330 | 592 | 236 | 175 | 143 |
| Consumption (Dried equivalent) . . . | 1,345 | 1,928 | 2,820 | 5,332 | 3,875 | 2,725 | 2,116 |
| Domestic. . . . . . . . | ? | ? | ? | ? | ? | 1,923 | 1,102 |
| Foreign . . . . . . . . . | ? | ? | ? | ? | ? | 803 | 1,014 |

Imports are largely from Surinam with small amounts from British Guiana. (G. A. Ro.)

## Beans, Dry.

The U.S. crop of dry beans for 1947 was estimated at 17,164,000 bags of 100 lb. each, uncleaned, compared with 15,859,000 bags in 1946 and a 10-year (1936–45) average of 16,312,000 bags. The acreage was increased about 10% in 1947 to 1,759,000. Average yield was only 976 lb. per acre compared with 981 lb. in 1946 and a 10-year average of 889 lb.

*U.S. Production of Dry Beans in Leading States, 1947, 1946 and 10-year Average, 1936–45*

(In thousands of 100-lb. bags)

| State | 1947 | 1946 | 10-yr. average | State | 1947 | 1946 | 10-yr. average |
|---|---|---|---|---|---|---|---|
| California . . . | 4,363 | 3,587 | 4,610 | Wyoming . . . | 1,444 | 1,305 | 864 |
| Michigan . . . | 3,129 | 3,841 | 4,404 | New York . . . | 1,375 | 1,488 | 1,189 |
| Colorado . . . | 2,568 | 1,618 | 1,676 | Nebraska . . . | 1,058 | 1,054 | 454 |
| Idaho. . . . . | 2,341 | 2,176 | 1,871 | Montana . . . | 364 | 280 | 276 |

The farm price of beans, which had almost doubled during 1946, stood at $12.20 per cwt. in Jan. 1947, advanced to $12.70 by July, and held steady to $12.10 in December. Exports of dry beans increased during 1947; at the higher prices the value of the exported crop almost doubled.

The world's bean production was estimated to be about 10% larger than in 1946. (J. C. Ms.)

**Bechuanaland Protectorate:** *see* British South African Protectorates.
**Beef:** *see* Meat.

## Beekeeping.

The honey crop of 1947 in the United States was estimated at 210,039,000 lb., compared with 213,814,000 lb. in 1946—a decrease of about 2%. The number of colonies was estimated at 5,910,000, or 2% more than in 1946.

Average yield for the United States was 35.4 lb. per colony compared with 36.9 lb. in 1946. California produced a crop of only 14,100,000 lb., compared with 22,128,000 lb. in 1946. Florida's crop of 7,410,000 lb. was also poor. Iowa stood first in production with a 17,570,000 lb. crop. Minnesota stood second with 17,043,000 lb., Texas and New York each had 13,140,000 lb. and Wisconsin 11,660,000 lb.

Imports declined to 15,000,000 lb. in 1947, mostly from Cuba, Mexico, Puerto Rico and Hawaii. Prices ranged around 12 cents per pound, compared with four to five cents in prewar years. (J. C. Ms.)

**Beer:** *see* Brewing and Beer.

## Belgian Colonial Empire.

The Belgian colonial empire consists of the colony of Congo in central Africa and the adjacent mandated territories of Ruanda and Urundi. The accompanying table gives material relative to all territories administered by Belgium (*q.v.*). Total area: 925,000 sq.mi.; pop. (est. Jan. 1, 1947): 14,088,191, of whom 34,782 were whites (24,058 Belgians). Chief towns, with their white pop. only (est. Jan. 1, 1947): Léopoldville (cap. 6,183), Elisabethville (5,359), Stanleyville (1,246). Governor general (appointed Dec. 31, 1946): Eugène Jungers.

**History.**—The Belgian colonial empire in 1947 enjoyed great social stability and unparalleled economic prosperity. There were no political troubles and exports were 78% more than before World War II. A certain desire for decentralization existed, but it manifested itself more among the Belgian residents than among the natives. In this connection Governor General Eugène Jungers stated in April, during a visit to Brussels, that during World War II the Congo had developed its resources enormously; it had come of age and it expected that fact to be taken into consideration. The residents, he said, wished to participate more, and more directly, in the government of the colony. They wanted the resources of the Congo to be assigned mainly to the needs of the colony itself. They were not separatist, and they favoured a sound autonomy under the permanent hegemony of the mother country.

From June 29 to Aug. 12 Prince Charles, regent of the kingdom, paid an official visit to the colony. It was an occasion for the natives to show their loyal attachment to Belgium and its dynasty. It was also the occasion for the regent and Pierre Wigny, minister of the colonies, to sign on July 1 two important decrees. The first created a Farmers' Credit bank (Société de Crédit au Colonat) with a view to helping Belgians who decide to settle permanently in the Congo; this arrangement had been recommended by a special commission which discussed the subject in Brussels during July and Aug. 1946. The second decree established a Native Welfare fund (Fonds du Bien-Etre Indigène), having an annual income of 250,000,000 francs, the object of which was to finance all enterprises capable of increasing the moral and material development of the natives in the Congo and in Ruanda and Urundi.

In 1947 there were in the Congo 6,102 primary schools with 358,215 native pupils and 56 secondary schools with 3,872 native pupils; there were also 8,994 rural schools with 246,424 natives attending evening classes. A new technical school for natives was opened at Elisabethville. The missionaries, generally Roman Catholic, were mainly responsible for the education of the natives. The medical corps looking after the state of health in the colony was composed as follows by July 1947: 350 physicians, 703 white nurses, both men and women, and 2,500 native auxiliaries. Mortality among the natives in 1946 was 7 per 1,000.

Among measures taken in 1947 in the interest of the natives were: the prohibition of polyandry; the appointment of a commission to study the problem of 12,000 mulattos, who are rejected both by the whites and the natives; the opening of a native social studies centre at Léopoldville; and the promulgation of a law forbidding the sale of the cotton crop on the field and stating that the growers remained proprietors of the cotton until it was sold on the world market. (G-H. D.)

**Belgian Congo:** *see* BELGIAN COLONIAL EMPIRE.

## Belgium.

A kingdom of western Europe. Area: 11,774 sq.mi.; pop. (est. Jan. 1, 1947): 8,388,526. Chief towns: Brussels[1] (cap. 1,290,534); Antwerp (259,622); Ghent (162,488); Liége (150,103); Bruges (52,698); Namur (30,702). Languages: Dutch, French and German; religion: mainly Roman Catholic. Ruler: King Leopold III, Prince Charles (*q.v.*), regent. Prime minister (appointed March 19, 1947): Paul-Henri Spaak.

**History.**—During 1947 further progress was made in the economic rehabilitation of the country, but the political struggle remained bitter. From the beginning of January the government of Camille Huysmans was attacked not only by the Christian-Social opposition, but also by the Liberals, the Communists and even some Socialists; agreement inside the coalition seemed at an end. On Feb. 26 former prisoners of war organized a march throughout the capital to protest against the slowness shown by the government in granting them material and moral help. The demonstration rapidly degenerated into a serious riot round the royal palace and the government buildings and the horse gendarmerie had to charge the rioters, killing 1 and wounding 30. Twelve days later the shopkeepers started a strike protesting against too many controls and fines.

The government was shaken by these and other signs of general dissatisfaction. On March 11, on the pretext of an increase in the price of coal, the Communist ministers resigned. The government crisis that followed was of short duration. The prince regent asked Paul-Henri Spaak to form a new cabinet. On March 19 the eighth government of Belgium after the liberation, a coalition of the Christian-Social and Socialist parties, came into existence; nine portfolios went to the former, eight to the latter and two to nonparty experts. Liberals and Communists went into opposition.

In his speech to parliament, on March 25, Spaak promised,

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[1] Not the commune of Brussels, which has only 187,039 inhabitants, but Greater Brussels.

*Belgian Colonial Empire*

| Country and Area sq. mi. (approx.) | Population (000s omitted) (Est. Jan. 1, 1947) | Capital, Status, Governors, Premiers, etc. | Principal Products 1946* (exports) | Imports and Exports (Francs '000) | Road, Rail and Waterways | Revenue and Expenditure* (Francs '000) |
|---|---|---|---|---|---|---|
| **Belgian Congo, 904,974** | **Native: 10,667**<br>**White: 33** | **Léopoldville, colony. Governor General: Eugène Jungers** | **Diamonds (mainly industrial) 6,057,783 carats**<br>(In short tons)<br>**Copper 179,573**<br>**Tin ingots 4,907**<br>**Zinc ore 8,591**<br>**Uranium ore 6,889**<br>**Gold 11.6**<br>**Palm oil 97,036**<br>**Palm kernels 53,897**<br>**Gum copal 21,701**<br>**Cotton 51,753**<br>**Jute substitutes 9,206**<br>**Coffee 21,548**<br>**Tea 8.8**<br>**Sugar 7,773** | **Imp. (1944) 2,478,409 (530,422 short tons)**<br>**Exp. (1946) 5,774,875 (747,343 short tons)**<br>**Exp. to Belgium (1946): 2,522,000 (407,275 short tons)** | **Roads open to traffic (Jan. 1, 1943) 55,307 mi.; under construction: 976 mi. Railways (Jan. 1, 1943) 3,053 mi. Navigable waterways (1946) 7,235 mi.** | **1946**<br>**Revenue 2,209,110**<br>**Expenditure 2,337,786**<br>**1947**<br>**Revenue (est.) 2,448,879**<br>**Rate of exchange (July 1947) 1 franc=2.283 U.S. cents** |
| Ruanda and Urundi, 20,120 | Native: 3,386<br>White: 2 | Nianza (Ruanda), Kitega (Urundi), mandated territory united administratively with the Belgian Congo | | **Imp. (1943) 136,766 (7,009 short tons)**<br>**Exp. (1946) 250,769 (33,798 short tons)** | **Roads open to traffic† 4,148 mi.** | **United administratively with the Belgian Congo** |

*Including Ruanda—Urundi.

†From *Belgian Congo Directory* (1943); figures apparently for 1942 though this is not explicity stated for roads.

mong other measures, to introduce woman suffrage, to imrove the situation of public finance without devaluing the Belian franc, to increase the efficiency of technical education, to asten the repair of war damage and to seek agreement among he parties in order finally to settle the royal question while especting the constitution. The next day the chamber of depuies passed a vote of confidence in the government by 148 votes o 13 and 22 abstentions; on March 28 the senate approved the overnment by 125 votes to 7 and 17 abstentions.

On June 16 and 17 the representatives of the trade unions and f employers held a national conference of labour under the hairmanship of Spaak, assisted by the ministers of labour, vorks, supply and economic affairs. The conference decided to evise the policy of subsidies, to increase family allowances and oliday bonuses and to introduce joint advisory committees *conseils d'entreprise*) in industry. As the suppression of subidies for certain food products automatically caused an increase n prices, the government decided on July 22 to give compenatory allowances to all citizens earning 72,000 francs or less nnually. At the same time a big campaign to reduce prices was tarted.

On June 19 the report of a special commission on the royal uestion was published. This commission, established by King eopold III on July 14, 1946, comprised experts in constituional law and prominent personalities of the right and left uner the chairmanship of Jean Servais, honorary attorney genral and professor at the University of Brussels. The report stablished that the conduct of the king, from 1936 to 1944, was bove reproach. The government discussed the report of the ervais commission on July 4 and asked the prime minister "to xamine the possibility of giving effect to that part of his speech o parliament that concerned the royal question." At the begining of December Spaak was preparing to declare publicly that he king's honour was "unblemished." On Dec. 4 King Leopold eceived at Lausanne, Switz., a delegation of the National Conress to Solve the Royal Question and said to them: "I am eady to re-assume my constitutional duties as soon as the govrnment publicly declares that nothing has ever blemished my onour as the head of the dynasty." When this statement apeared in the Catholic press the leader of the Socialist party sked for a debate on the government's policy regarding the ynasty. Spaak referred to his difficulty over this problem in a overnment which was divided not on the king's honour, but on he king's return. The government received a vote of confidence 152 votes to 32) but the declaration of Spaak was postponed *ine die*. By the end of 1947 discussion between the parties was oing on, generally in secret.

Despite the disillusionment frequently expressed by Spaak, elgium's foreign policy continued to support the United Naions. Belgium was also one of the first states to accept the arshall plan of aid to Europe. But the outstanding event of he year was the signature on March 14 at The Hague of a rotocol establishing a customs union between Belgium, the etherlands and Luxembourg that had been adopted in principle n an agreement signed in London on Sept. 5, 1944. Thus a new conomic unit called "Benelux" was born. The customs duties f the three countries were standardized, and it was hoped that n the near future the same would be done for excise duties, the ransfer tax and tariff legislation. The ultimate objective of Benelux" was complete freedom inside the common frontiers. he three countries were not, however, to limit their collaboraion to the economic field: they were also to conduct a common oreign policy. This unity in foreign policy was apparent for the rst time at the conference of 16 European countries in Paris, n July 12–15; it was evident at the U.N. assembly at Lake Sucess, N.Y., where in regard to Indonesia Belgium defended the Netherlands' point of view. (G-H. D.)

BELGIAN VETERANS rioting on Feb. 26, 1947, at Brussels, where several thousands of former P.O.W.'s and deportees demanded compensation for time spent in prison. One person died and 40 were injured in the demonstration

**Education.**—1945: kindergarten schools 4,140, scholars 228,108; primary schools 8,714, scholars 828,996; higher grade (1946–47) schools 447, scholars 100,459; adult schools 211, scholars 83,856; universities (1946): Ghent 2,228 students; Liége 3,054 students; Brussels 4,302 students; Louvain 7,554 students.

**Banking and Finance.**—Revenue (est. 1946) Fr. 58,000,000,000; expenditure Fr. 70,000,000,000; public debt (June 1947) Fr. 279,586,000,000; gold reserve (Oct. 23, 1947) Fr. 26,960,000,000; note circulation (Oct. 27, 1947) Fr. 78,326,000,000: rate of exchange 1 franc=2.283 U.S. cents (1947).

**Trade and Communication.**—External trade (merchandise): imports (1946) Fr. 52,561,608,000; (Jan.–June 1947) Fr. 36,505,300,000; exports (1946) Fr. 29,654,016,000; (Jan.–June 1947) Fr. 28,297,164,000. Communications: roads suitable for motor traffic (1945) 6,433 mi.; railways open to traffic, main (1945) 3,089 mi.; waterways open to navigation (1945) 936 mi.; airways (1946) passengers carried 9,720; freight 1,203 short tons. Shipping entered (1946) 9,612,000 tons net; cleared 6,180,000 tons net. Motor vehicles licensed (1945): private cars 43,903; commercial 2,217; buses 261; trucks 60,234. Telephones (1944) 304,314.

**Agriculture.**—Harvest 1947 (est. yields in short tons): wheat 124,354; rye 179,479; barley 158,060; oats 550,748; potatoes (early and semi-early) 735,475; peas 16,625; flax (seed) 13,060; flax (straw) 125,220; colza 2,930; fodder crops (grass, sainfoin, lucerne and clovers) 904,404. Other produce (1946) butter 19,800; cheese 8,800; meat 96,000. Livestock (1947) horses 303,925; cattle 1,729,341; sheep 170,166; pigs 616,144; poultry 5,712,112.

**Industry and Labour.**—Industrial production index (1936–38=100). April 1947=99. Textile production during 1946 and the first half of 1947 is shown in the table on page 118. Other products (1946): bicycle tires (number) 6,102,200; matches (boxes) 45,338,798,000; new dwellings under construction

*Belgian Textile Production, 1946, 1947*

(In short tons)

| | 1946 | 1947 (Jan.-June) |
|---|---|---|
| Cotton | 76,390 | 44,740 |
| Wool | 34,050 | 23,700 |
| Linen | 9,380 | 4,977 |
| Jute | 38,820 | 19,960 |

(May 1947) 1,075. Unemployed (June 1947) 46,300.

**Minerals.**—July 1946–June 1947 (in short tons): coal 26,515,200; pig iron and ferroalloys 2,863,000; steel ingots and castings 2,882,800; lead 34,620; zinc 123,110; cement 2,520,270. (*See* also BELGIAN COLONIAL EMPIRE.)

**Benefactions:** *see* DONATIONS AND BEQUESTS.

**Benelux:** *see* BELGIUM; LUXEMBOURG; NETHERLANDS; TARIFFS.

## Benton, William

(1900– ), publishing executive, was born on April 1 in Minneapolis, Minn. He was graduated from Shattuck Military academy, Faribault, Minn., and received the bachelor's degree from Yale university, New Haven, Conn., in 1921. He entered the advertising agency business in New York in 1922. In 1929, in partnership with Chester Bowles, he founded the Benton and Bowles agency, which rose rapidly to become one of the most successful in the advertising business. He resigned from all active participation in the affairs of the agency early in 1936.

Benton became vice-president of the University of Chicago in 1937, partly devoting himself to the development of radio and classroom motion pictures as instruments of education. At Benton's instance the university acquired Encyclopædia Britannica, Inc., in 1943. He financed the company, became chairman of its board and shared its ownership with the university. He launched Britannica into the classroom motion-picture field and served as board chairman of Encyclopædia Britannica Films Inc. In collaboration with Paul Hoffman he helped to found (and served as vice-chairman of the board of trustees for) the Committee for Economic Development, which instituted studies and plans for reaching and maintaining high levels of employment and productivity in the postwar period.

Benton was appointed U.S. assistant secretary of state by Pres. Harry S. Truman on Aug. 31, 1945. He resigned from all operating responsibilities outside the department of state. His special responsibilities within the state department included: (1) a projected program of information and educational exchanges with other countries; (2) U.S. participation in the United Nations Educational, Scientific and Cultural organization and (3) the department's information and group relations program within the United States.

Under the first of these Benton in 1946 and 1947 developed the country's first peacetime international information program, designed to project to other peoples "a full and fair picture of American life, and of the aims and policies of the United States Government." This included short-wave broadcasts in 24 languages; exhibition of documentary films about the U.S. before audiences of many millions abroad; fast servicing to foreign editors of full texts of important U.S. foreign policy statements; stimulation of exchange of students, scholars and scientists and maintenance of small information staffs and U.S. libraries in 62 countries.

In the second field Benton participated in drafting the U.N.E.S.C.O. constitution at London in 1945; served as chairman of the U.S. delegation to the first U.N.E.S.C.O. general conference at Paris in 1946 and again as chairman of the delegation at the second conference at Mexico City in 1947.

During 1947 U.S. policy on international press freedom was developed under Benton's direction, and an organization was set up to administer the greatly expanded student-exchange program made possible under the Fulbright bill.

Benton resigned as assistant secretary on Sept. 30, 1947, though he continued to serve the secretary of state as a consultant on U.N.E.S.C.O. Shortly thereafter he resumed the chairmanship of Encyclopædia Britannica, Inc., and of Encyclopædia Britannica Films Inc. In December he also became board chairman of the Muzak corporation, which he had owned for some years.

## Bentonite.

Sales of bentonite by producers in the United States increased from 573,998 short tons in 1945 to 601,428 tons in 1946, making a new record high. Nevada and Oklahoma appeared as new producers in 1946, in addition to the nine states previously reporting. Wyoming and South Dakota supplied nearly half the total. About 38% of the output goes into rotary drilling mud, 27% into foundry sand and 24% is used for filtering and decolourizing oils, leaving 11% for miscellaneous uses. Most of the increased supply of 1946 went into drilling muds. (*See* FULLER'S EARTH; MICA.) (G. A. RO.)

**Bequests, Philanthropic:** *see* DONATIONS AND BEQUESTS.

## Berlin.

Capital of the German reich from 1871 to 1945, Berlin is the largest and the most important city of Germany. Area: 341 sq.mi.; pop. (census of Oct. 29, 1946): 3,180,383, or 26.4% less than the pre-World War II figure (census of May 17, 1939: 4,332,242).

The political scene in 1947 was dominated by the controversy over the office of *Oberbürgermeister.* Otto Ostrowski, a Social Democrat, chosen after the elections of Oct. 1946, was in April forced by his own party to resign on the grounds that he had been subservient to S.E.D. (the Communist-controlled *Sozialistische Einheits-Partei Deutschlands*) views and lacked courage in his attitude toward the soviet occupation authorities. The Berlin *Kommandantura* (the four Berlin Allied commanders) agreed to his resignation. In July the new nominee of the majority of the city assembly, Dr. Ernst Reuter, another Social Democrat, was accepted by all Allied commanders except the Russian, Gen. Alexander Kotikov, who rejected his nomination

NEW STORE FAÇADE on Berlin's Kurfuerstendam, set incongruously against the ruins of World War II. Shopping facilities were making but slow returns to normalcy in 1947

on the grounds that he was antisoviet and of doubtful political record. The disagreement was taken to the Allied Control council where the Russian representative again vetoed the appointment of Dr. Reuter. For the rest of the year Frau Luise Schröder, a Social Democrat, acted as *Oberbürgermeisterin.*

Berlin's industries, chief of which are electrical equipment, clothing and machine construction, were seriously handicapped by dependence upon raw material supplies from the four zones. In July the Askania instrument manufacturing firm in the U.S. sector was closed down on the grounds that it was making war materials for another Allied power. In the soviet sector 600 nazi firms were expropriated and placed under a trustee with a view to their being handed over to the city authorities or to the co-operatives.

In the cultural field Berlin remained the capital of Germany. Excellent productions at the theatres included works by Jean Cocteau, Eugene O'Neill, Jean Giraudoux, Gerhart Hauptmann, Karl Sternheim, Ferenc Molnar, Franz Werfel and Konstantin Simonov.

The total circulation of Berlin's 15 daily newspapers by Jan. 1, 1947, was 3,500,000. The Russian-licensed or official Russian papers accounted for about 70% of this amount. (*See* also GERMANY.) (D. A. SN.)

**Bermuda.** The Bermudas or Somers islands form a group of about 360 small islands situated in the western Atlantic about 580 mi. east of Cape Hatteras in North Carolina. Together the islands constitute the British colony of Bermuda. Total area: 19 sq.mi.; pop. (1945 est.): 34,435. The capital is Hamilton (pop. *c.* 3,000). The only other town of importance (St. George) has a population of about 1,300. The colony is administered by a governor appointed by the British crown, assisted by an executive council containing four official and three unofficial members. The legislative council consists of 9 members (3 official and 6 unofficial) and the house of assembly of 36 members, 4 being selected by each of the 9 parishes of the colony. Governor in 1947: Adm. Sir Ralph Leatham.

**History.**—The principal questions that arose in Bermuda during the year 1947 had relation to local conditions and standards of living. Toward the end of 1946 a petition to the secretary of state was drawn up by the executive committee of the Bermuda Workers' association (a body claiming a membership of nearly 5,000, representing approximately one-seventh of the population of the colony) praying for the appointment of a royal commission "to investigate and report on the social, economic and political conditions of Bermuda, with recommendations for the alleviation and adjustment of the several inequities and handicaps under which the great majority of the population are labouring." The matter came under consideration in London early in 1947. The secretary of state was not prepared to agree to the immediate appointment of a royal commission. He considered that, as Bermuda had "enjoyed representative government for over 300 years," the petitioners' representations should be examined, in the first instance at any rate, by the local legislature. He invited the governor to take immediate steps to initiate such an examination. He also called special attention to certain imperfections in the local law relating to trade unions; to the desirability of extending the franchise; and to the need for reforming the fiscal system by the introduction of direct taxation. The Workers' association was informed that the secretary of state would reply in due course to its petition in the light of the local legislature's examination and of the governor's observations thereupon. A joint committee of the legislative council and the house of assembly was appointed to inquire into and report on the matters raised in the petition. New salary scales for government servants (in which account was taken of the high cost of living) were introduced in Jan. 1947.

**Finance and Trade.**—The currency of Bermuda is that of the United Kingdom. Revenue (1945) £815,657; expenditure £836,129. Imports (1946) £3,634,000; exports £263,000. The colony had in 1945 a public debt of £875,000 (including two interest-free loans totalling £800,000 to the British government). (J. E. SH.)

**Beryllium.** After declining from 388 short tons in 1944 to 39 tons in 1945, the output of beryllium ores in the United States increased to 100 tons in 1946. Imports declined from 3,115 tons in 1944 to 1,201 tons in 1945 and 1,098 tons in 1946. The production of refined beryllium products from ore had practically ceased everywhere except in the United States. (G. A. RO.)

**Bessarabia:** *see* UNION OF SOVIET SOCIALIST REPUBLICS.
**Best Sellers:** *see* BOOK PUBLISHING.

**Betting and Gambling.** The postwar gambling fever, which had seemed to subside in 1946, was stronger than ever in 1947. Professional gambling houses, illegal in every state but Nevada, were patronized as heavily as in 1945, and many of the smaller ones which had closed during 1946 were reopened.

Outstanding was the spread of "floating crap games." Hitherto a monopoly of New York's underworld, this type of game became prevalent in small town and big city alike. Roulette, a standard game at gambling houses, received its usual high quota of publicity when, in November, two University of Chicago students descended upon the largest gaming house in Reno, Nev., with the claim that they had perfected a system of winning. First reports said the aleatory collegians had won $2,000. A few hours later the figure was doubled. The third flash put the bettors ahead $12,000. After that the story died out, and the fact that the mathematical wizards had lost most (not all) of their winnings was not given enough attention to prevent a parade of other hopeful system gamblers to Reno.

Bingo was played more than in 1946, especially in the small towns. The decline in attendance at motion pictures brought Screeno (a form of Bingo) back as a trade stimulator in a few theatres.

Manufacturers and proprietors of slot machines had a banner year. Factories that had manufactured other products during World War II were reconverted, and thousands of new machines were marketed or reconditioned. In only one state, Nevada, could these machines operate openly, but 17 states permitted them in private clubs, and, legal or not, they were still to be found in clubs in all states.

There was some decline in betting on horse racing, which continued to attract more betting dollars than any other form of gambling. Many of the states that permitted pari-mutuel betting at the race tracks reported a drop in the golden flow. The expected total "handle" of $2,000,000,000 was not reached, nor was the 1946 total of $1,900,000,000 equalled. Off-the-track bookmakers also were pessimistic. The gambling fraternity blamed the decline on public resentment at the heavy "take" of the tracks and state taxes.

Betting on sporting events continued, both in the football pools and with bookmakers. The Minneapolis syndicate furnishing bookmakers with probable results of all football games did its usual accurate job, being right in so high a proportion of the cases that the bookmakers had a profitable year. In basketball there were rumours of "thrown" games, all denied and some disproved but sufficiently grave so that western bookmakers refused to accept bets on games played in some eastern cities.

Football, both amateur and professional, escaped suspicion except in a few cases, and baseball retained the entire faith of the public. There was little heavy betting on boxing matches, perhaps because of the scarcity of bouts between well-matched fighters.

Card games remained a minor factor in gambling. Blackjack, otherwise known as twenty-one, was the principal game in the gambling houses, but was not played for high stakes comparable with those in the dice games. In the temples of luck with social pretensions, chemin-de-fer was gaining favour and was played for higher stakes. The game most often played for high stakes in private homes, clubs and resorts was gin rummy, with stakes ranging from $1 to $15 a point not being uncommon. This attracted card "sharps," and although there was no repetition of the Hollywood scandal in 1946, when detectives exposed a ring reputed to have won more than $3,000,000, there were similar cases on a smaller scale.

In England the stakes in bridge and poker were relatively much higher. A game at London's leading bridge club was played regularly for £40 per hundred points with £100 extra to the winner of the rubber, equivalent to well over $2 a point and more than ten times as high as the highest-stake bridge game regularly played in any U.S. club.

Lotteries continued to have general popularity throughout the world except in the United States, where continued agitation to legalize them made no apparent headway and the undercover numbers game was the only flourishing form of lottery. Toward the end of the year Tass reported that a new Russian loan would be promoted, in accordance with previous custom, by a state-operated lottery, and that there would be seven such lotteries, involving about 8,000,000,000 rubles.

(A. H. Md.; M. Ml.)

**Beveridge Report:** *see* Relief; Social Security.

**Bevin, Ernest** (1881– ), British foreign secretary, was born at Winsford, Somerset, England, the son of an agricultural worker. In 1920 he became national organizer of the Dockers' union, and the following year general secretary of the newly formed Transport and General Workers union. From 1925–40 he was a member of the general council of the Trades Union congress and in 1937 was chairman. In May 1940 he became minister of labour in Winston Churchill's coalition government and entered the house of commons for central Wandsworth. Together with the other Labour members he left the government in May 1945, and in July was appointed secretary of state for foreign affairs by Prime Minister Clement Attlee.

Bevin attended the Potsdam conference (July 1945), the Council of Foreign Ministers in London and Moscow (Sept.–Dec. 1945), the first general assembly of the U.N. in London (Jan. 1946) and the Council of Foreign Ministers and U.N. meetings in New York (Nov.–Dec. 1946). In 1947 the Council of Foreign Ministers met twice, in Moscow in March and April, and in London from Nov. 25.

On April 25, after the Moscow meetings which had ended in a deadlock, Bevin was surprisingly optimistic of the future and said, "I would rather take a long time and produce a good peace in the end than have a loose one, slopping over with false formulas." In June he met Georges Bidault in Paris for discussion on the Marshall plan for Europe, and at the end of the month visited Paris again for discussions with Bidault and Vyacheslav Molotov. In July, at the first meeting of the Committee for European Economic Co-operation, he was elected chairman.

**Bible Society, American:** *see* Societies and Associations.

**Bicycling:** *see* Cycling.

**Bidault, Georges** (1899– ), French statesman, was born on Oct. 5 in Moulins, France. He served in the French army during World War I from 1917 to 1919. After the war, he resumed his studies at the Sorbonne university, being graduated with high honours, and later taught history in secondary schools. In 1932 he and members of a left wing Catholic group founded the Catholic newspaper *L'Aube* with Bidault as foreign editor and columnist. At the outbreak of World War II, he joined the army with the rank of sergeant. He was taken prisoner and held in the reich until 1941. On returning to France, he joined the underground and in 1943 became president of the National Council of Resistance. A fortnight after the liberation of Paris, he was named foreign minister (Sept. 9, 1944), in Charles de Gaulle's provisional government. He headed the French delegation to the U.N. charter conference in San Francisco in 1945 and represented France at all the quarterly councils of the Big Four foreign ministers from the initial parley in the fall of 1945 through 1947.

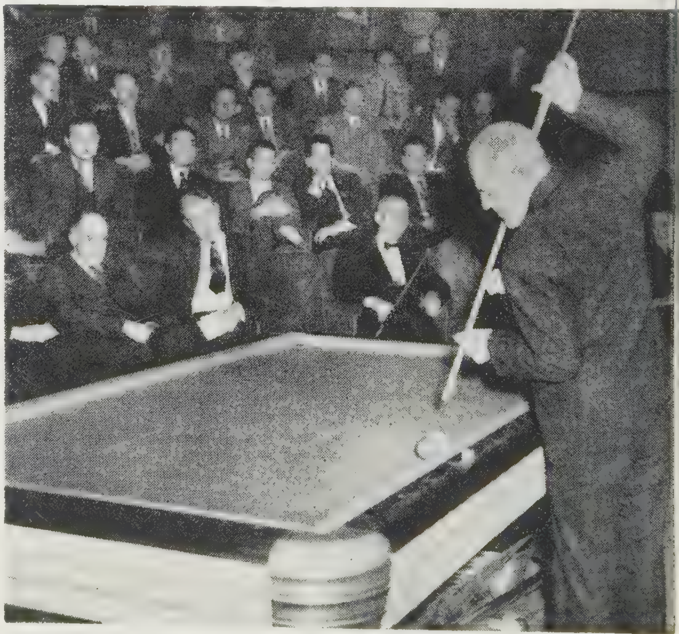
Bidault concurrently held the posts of provisional president and premier of France in June 1946. He resigned in Nov. 1946 but retained the foreign-affairs portfolio in the succeeding Blum, Ramadier and Schuman governments.

A staunch defender of the Marshall plan, he nevertheless expressed regret over the division of the world into "two hostile blocs" and in a speech before the U.N. general assembly on Sept. 20, 1947, said France would work incessantly to recement the riven world. The following month (Oct. 11), he warned his political followers in France that if the Marshall plan failed, "it will mean misery for us all."

During the sessions of the London Council of Foreign Ministers in Dec. 1947, Bidault sided with George C. Marshall and Ernest Bevin in branding as abuse and propaganda Vyacheslav Molotov's charge that the western powers were profiting in Germany.

**Bikini Island:** *see* Atomic Energy.

**Billiards.** Both major world billiard titles, the three-cushion and pocket, were at stake during 1947. Willie



WILLIE HOPPE (right), demonstrating a massé shot before University of Michigan scientists at Detroit in Jan. 1947. The occasion was the discussion of original research on the mathematical and neuromuscular phenomena of billiard playing

Hoppe replaced Welker Cochran as the three-cushion champion, while Willie Mosconi dethroned Irving Crane as wearer of the pocket diadem.

Hoppe's road to the crown he first won in 1936 was made easier when Cochran, the previous champion, did not defend his honours in the world tournament at Chicago in March. The former "boy wonder" was at the top of his game, reeling off eight victories in succession to clinch first place. Arthur Rubin, runner-up with a 7–2 record, lost all hope of tying Hoppe when he was beaten by Andrew Ponzi.

However, Rubin had another chance at the championship later in the year when he played Hoppe in a challenge match. The event started in Detroit on Oct. 25 and ended in Perth Amboy, N.J., on Nov. 9, with the titleholder in front by 1,400 points to 1,076. Hoppe set a world challenge match record in this engagement by scoring 50 points in 21 innings on the opening day. Hoppe and Rubin played the "still ball" game, which is not to be confused with the optional cue ball style used in the 1944 world tournament.

Mosconi, a former pocket billiard champion, regained the title in May by beating Crane in 14 of 16 blocks, 2,000 points to 918, and set a world mark for a 2,000-point match by averaging 15.89 balls per inning. In the fall, Mosconi defended his crown against Jimmy Caras, another former champion, and proved equal to the occasion by capturing 26 of the 32 blocks and scoring 4,000 points to his opponent's 2,334. Mosconi averaged 12.9 balls per inning, and Caras 7.9. Caras took high run honours with 121, while Mosconi's best cluster was 107.

(P. Br.)

# Biochemistry.

**Vitamin-Enzyme Relationships.**—Biotin and pantothen were added to the growing list of those B-vitamins (riboflavin, thiamin, niacin and pyridoxin) which are parts of enzyme systems, and whose biological effects are thus given a chemical basis. Biotin was found to be essential for the enzymatic decarboxylation of oxaloacetate, and for the enzymatic deamination of aspartic acid, serine and threonine. By the reversal of the former reaction, biotin was thought to play a fundamental role in the fixation of carbon dioxide by bacteria and animal tissues. Corroborative evidence was found in the observation that oxaloacetate and aspartate spare the biotin needs of certain bacteria, whose growth is stimulated by carbon dioxide in the presence of biotin, but not in the latter's absence. Biotin deficiency in fowl causes a decrease in the oxaloacetate decarboxylase of liver tissue. Pantothen was found to constitute about 10% of a compound, called coenzyme A, which participates in the acetylation of choline and sulfanilamide by a brain-tissue enzyme, and in the oxidation of pyruvate by bacteria and of acetate by yeast.

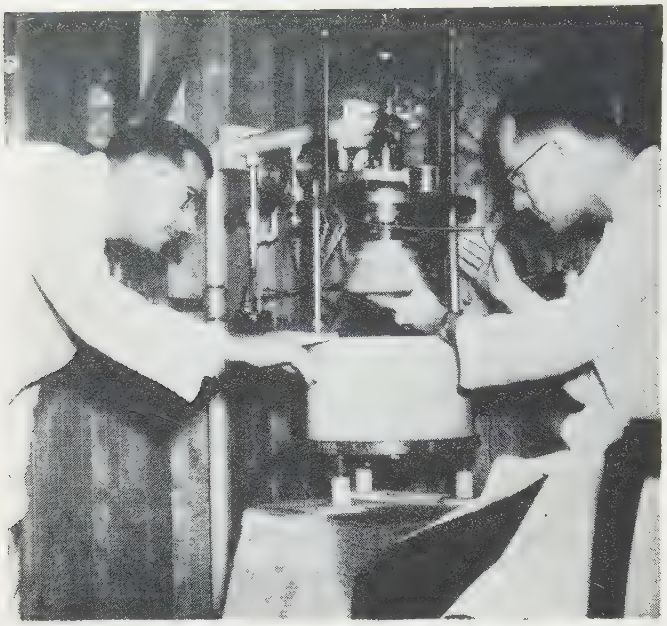
Pyridoxine was found to relieve the deficiency state resulting from absence of dietary fat, and to cause the deposition of linoleic as well as di- and tetraenoic acids in the tissues of rats on fat-free diets. This contradicts the idea that linoleic acid cannot be synthesized by rat tissues, and pointed to a new function for pyridoxine. Pyridoxal phosphate, previously shown to be a coenzyme for transaminases and amino acid decarboxylases, was shown to be also a coenzyme for the tryptophanase of *Escherichia coli,* which converts tryptophane into indole, pyruvic acid and ammonia. Vitamin $B_6$ was also found to be necessary for the metabolic synthesis of tryptophane from indole or anthranilic acid by *Lactobacillus arabinosus.* Pteroyl glutamic acid (PGA) was found to restore the tyrosine-oxidizing capacity of the livers of PGA-deficient rats. In addition to the function of PGA in formation of red blood cells (treatment of pernicious anaemia), this vitamin was found to be essential for normal lactation in rats. The conversion of carotene to vitamin A, previously thought to occur in the liver, was shown in the rat to occur in the intestine, after which the vitamin is transferred to the liver for storage. The oxidation of dioxyphenylalanine was found to be effected by kidney slices of normal animals, but not by those of scorbutic guinea pigs; and the addition of ascorbic acid to the scorbutic slices in vitro restores the ability to oxidize the amino acid. Previously, a similar action of ascorbic acid for the oxidation of tyrosine by liver tissue was reported. Since tyrosine and dioxyphenylalanine are precursors of melanin pigment, these observations are probably related to the removal of the coppery bronze skin colour of Addison's disease by administration of ascorbic acid.

**Enzymes.**—Especially numerous were studies on variations in the occurrence and concentration of enzymes in tissues in different physiological or pathological conditions. Both acid and alkaline phosphatases of kidney are increased in alimentary hyperglycaemia, in phlorhizin poisoning and in alloxan diabetes. It was postulated that the renal threshold for glucose is an expression of the limit to which kidney phosphatase activity can be raised. Striking was the observation that the $\beta$-glucuronidase activity of cancer tissue is 6-36 times greater than that of adjacent or other normal tissue. Since the $\beta$-glucuronidase activity of tissues was known to be increased by estrogens, it was postulated that the increased $\beta$-glucuronidase activity of tumour tissue is a metabolic response to some estrogen or related substance characteristic of cancer.

Among new enzyme activities reported during 1947 may be mentioned: diacetyl mutase, widely distributed in animal tissues, which converts diacetyl into acetic acid and acetoin, and for which diphosphothiamin is a cofactor; a new phospholipid-splitting enzyme specific for the nitrogen base-phosphoric acid ester linkage; an enzyme from liver which converts ribose (from nucleosides) into hexose-monophosphate. For the last reaction, the postulated mechanism is the splitting of the pentose into smaller fragments, and the recombination of two triose units.

**Nucleoproteins and Nucleic Acids.**—The demonstrated relation of nucleic acids to the structure of viruses and chromosomes had implicated these substances in the fundamental processes of growth and inheritance and stimulated many studies on their chemical nature and metabolism. At the annual meeting of the American Society of Biological Chemists in Chicago in May 1947 a symposium was devoted to this subject. The development of methods for the preparation, separation and analysis of these compounds and their degradation products were important. Colorimetric and spectrophotometric methods for characterizing purines, pyrimidines, nucleosides and nucleotides were combined with the use of specific enzymes for degrading and synthesizing these intermediates. Certain strains of neurospora, which require certain purines, pyrimidines or nucleosides for growth were especially useful not only in the analytical methods, but also in showing the metabolic interrelations of the compounds. It was found that the desoxyribose nucleic acids are present in the nucleus, while the pentose nucleic acids are characteristic of the cytoplasm. Dietary adenine, but not guanine, is used for nucleic acid synthesis. From the nucleic acid of tobacco mosaic virus, three mononucleotides were isolated, uridylic, cytidylic and guanylic acids. Ribonucleic acids as usually prepared and as usually occur in tissues are not homogeneous substances; nor do they conform to the composition of a statistical tetranucleotide, containing equimolecular amounts of the four mononucleotides. Variations in tissue nucleic acid composition reflect various stages of growth and development of cells, rather than variations in organs or species.

**Competitive Inhibition.**—Many additional examples were



STANFORD UNIVERSITY scientists, Dr. H. S. Loring (left) and Dr. C. E. Schwerdt, at the centrifuge used in their isolation of an 80% pure virus of poliomyelitis, announced at Palo Alto, Calif., in Jan. 1947

reported of the inhibition of biological processes (growth, enzyme action) by structural analogues of natural substances, especially vitamins and amino acids. Five new analogues of pantothenic acid were found to exhibit antimalarial activity. Tyrosine and β-hydroxyphenylalanine were found to interfere with the growth of *Escherichia coli,* by preventing the synthesis of phenyl alanine. Several synthetic pterins were found to prevent the growth of a number of microorganisms, which require folic acid. Pteroyl aspartic acts similarly on bacteria and was found also to cause folic acid deficiency in chicks. Methylfolic acid was found to displace folic acid in the growth of bacteria and in the action of the enzyme dopa decarboxylase. The growth of *Staphylococcus aureus* was found to be inhibited by the presence of various derivatives of glutamic acid. In each of the above cases, the inhibition could be prevented by the addition of the natural substance analogous to the inhibitor. (*See* also PHYSIOLOGY; VITAMINS.)

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**Biography:** *see* AMERICAN LITERATURE; ENGLISH LITERATURE.
**Biology:** *see* BOTANY; GENETICS; MARINE BIOLOGY; PHYSIOLOGY; ZOOLOGY.

## Birth Control.

Planned Parenthood programs throughout the United States were expanded in 1947, a direct result of the first nation-wide campaign of the Planned Parenthood Federation of America, Inc. A major campaign by-product was the vast increase in public understanding and acceptance of Planned Parenthood services. The coverage given by the nation's press, wire services, radio and other media, especially magazines, was instrumental in breaking down some of the resistance to publicized discussion of birth control.

**Research.**—The first comprehensive program for research in the field of human reproduction was instituted during 1947. It was under the direction of the National Research council in Washington. The Committee on Human Reproduction established by the council was to study needs and recommend grants for specific research projects to qualified institutions and i vestigators. The council by contract with the National Con mittee on Maternal Health and in collaboration with the Planne Parenthood federation established this committee to plan th program of research. Research panels were to operate in accor ance with policies to be defined by the newly reorganized boar of the Committee on Maternal Health, under the chairmanshi of Dr. Haven Emerson, professor emeritus of public healt service at Columbia university, and a member of the New Yor city board of health.

The Committee on Human Reproduction of the National Re search council was headed by Dr. Howard C. Taylor, Jr., pro fessor of obstetrics and gynaecology at Columbia university college of physicians and surgeons.

More than the purely medical aspects of reproduction wa envisaged by the Committee on Human Reproduction as vita to its program. The medical aspects are so closely bound to th socio-economic environmental problems of the individual, fam ily, community, nation and the whole world that a sound re search program can ignore none of them. The main areas o the study would include: (1) the physiology of and the factor controlling conception; (2) the causes of sterility and treatmen for infertility; (3) maternal and foetal physiology and clinica disorders developing during pregnancy; (4) the psychologica problems of marriage and family relationships; (5) the popula tion aspects of these problems, social and economic as well a medical.

The Planned Parenthood federation would seek to contribut a substantial part of the funds for the research program. Th clinics and records of its affiliates would also constitute a valu able field for certain of the research projects. While not a part to the contract between the National Research council and th National Committee on Maternal Health, the federation wa collaborating as a full partner in the whole program.

**Medical Survey of U.S. Physicians on Birth Control.**—Dr Alan F. Guttmacher, associate professor of obstetrics and gynae cology at Johns Hopkins, conducted a nation-wide survey t tabulate medical opinion on conception control. According to hi poll, 96% of the physicians in the U.S. approved birth control Teaching of conception control methods in medical schools wa found inadequate. Three-quarters of the respondents had no received training in this area. Only 7% said they had receive both lectures and clinical instruction in contraception.

**Lasker Awards in Planned Parenthood.**—Dr. Guttmache and Dr. Abraham Stone received the third annual Lasker Awards in Planned Parenthood for their distinguished contribution i the fields of marriage counselling and education. The awar recognized Dr. Stone's 30 years of clinical work, teaching an marriage counselling.

**Development of Services.**—Dr. L. E. Kling, formerly wit the U.S. public health service, became acting medical directo of the federation. During his public health services, Dr. Kling developed the first mass X-ray programs and had wide experience in tuberculosis and cancer control public health programs.

Nearly two-thirds of the people of the U.S. believed government health clinics should furnish birth control information, it was found in a Gallup poll conducted during the year. Figures showed that 64% approved, 23% disapproved and 13% had no opinion.

A bill to permit physicians in Connecticut to prescribe contraceptives to their patients was defeated in May when the state senate voted two to one against the bill. It had passed the lower house 180 to 40.

Massachusetts officially opened a campaign for repeal of the state law forbidding medical prescription of contraception on Sept. 2. An initiative petition for a new law was approved by the state attorney general after it had been filed by ten voters headed by Dr. Karl T. Compton, president of the Massachusetts Institute of Technology. Many more than the 20,000 registered voters required by law signed the petition.

Four fertility clinics were opened during the year. Two of them were in Delaware and Connecticut where these services had hitherto been unavailable. Of these four new clinics, two were under Planned Parenthood auspices.

**International Developments.**—An International Union of Family Organizations was established by 27 nations meeting in Paris June 22–29 at a World Conference on the Family and Population. It was called by the French Union of Family Associations. U.S. representatives included Dr. Abraham Stone, who was delegated by the National Research council, the Planned Parenthood federation and the National Council for Family Relations; Dr. Ernest Stebbins, professor of hygiene and public health, Johns Hopkins; Miss Jane Hoey, director of the social welfare bureau, Federal Security agency; Mrs. Rachel Nyswander, director of the women's bureau of the labour department; and Dr. Norman Himes from the educational department of the U.S. military government in Germany. Representatives from the cultural department of the U.S. embassy in Paris and of the United Nations Educational, Scientific and Cultural organization also participated. Dr. Stone was elected a vice-president of the new International Union of Family Organizations.

**Organization.**—The Planned Parenthood federation was in 1947 the national agency and clearinghouse for 38 state leagues and 206 local committees. The total number of birth control centres stood at 550. These services were in 231 public health clinics, 60 hospital clinics and 214 extramural clinics. Of the 55 fertility clinics in the U.S., 12 were under Planned Parenthood direction. (*See* also Birth Statistics.) (M. Sr.)

## Birth Statistics.

Births in the United States reached a record peak in 1947, according to provisional data for the first nine months, which showed a birth rate 23% higher than for the like period of 1946. For each of the first eight months, the birth rate in 1947 was higher than in 1946, but the margin between the two years decreased toward the end of the period; Sept. 1947 fell below the record for the same month in 1946. The estimated number of births in the United States for the whole of 1946 was 3,288,450, and the birth rate 23.3 per 1,000 total population.

Canada's birth rate in 1947 also exceeded that of 1946, according to data for cities of 10,000 or more, which showed a 19% increase for the first eight months. The total number of births in Canada during 1946 was 325,805, the rate being 26.5 per 1,000 total population. There was a rapid upswing in the birth rate in England and Wales from 1946 to 1947; data showed a 13.8% increase for the first ten months in London and the great towns. The recorded number of births for all of England and Wales during the entire year 1946 was 819,894, and the birth rate was 19.1 per 1,000 total population.

An international comparison of birth rates for the years 1944–46 is shown in the table on page 124 with countries ranked according to the per cent change in their rates from 1945 to 1946. It will be noted that all but a few of the countries listed experienced a rise in their birth rate from 1945 to 1946, the first full year of peace. For many of these countries, the birth rates were not only higher than during World War II, but also above the level prevailing a few years before the war. The postwar upswing occurred in spite of food and housing shortages and serious dislocations. At the top of the list of increases in birth rates from 1945 to 1946 were the Netherlands, France and Italy, with gains of 33.0%, 27.2% and 23.5%, respectively. The United States was high on the list with a gain of 18.9%; practically the same showing was made by England and Wales, where the rise amounted to 18.6%. Of the English-speaking countries, Scotland ranked highest, with a gain of 20.1%. Canada showed a rise of 11.8%, while Australia and New Zealand experienced practically identical gains of 8.7% and 8.6%, respectively. The birth rate for the white population of South Africa rose by 7.4%. Observers believed that these postwar increases were the temporary effect of the reunion of families consequent to demobilization; and that, once this effect was over, the birth rate would take a downward trend. Of the few countries showing decreases in birth rates from 1945 to 1946, three—Switzerland, Sweden and Portugal—were neutral, while two—Chile and Mexico—were not active belligerents.

As a result of the upward trend in its birth rate from the low point reached in 1933, the United States had gained, through 1946, more than 4,000,000 babies that would not have been born if the situation of 1933 had remained unchanged (*Statistical Bulletin of the Metropolitan Life Insurance Company*, May 1947). Of this total gain, only 350,000 were attributed to the rise in the birth rate during the 6-year period 1934–39. Substantial contributions to the gain resulted from the wartime spurt in the birth rate. The high birth rate of 1943, as compared with that of 1933, gave the United States 691,000 extra babies; and for the 2 years 1944 and 1945 taken together, the excess amounted to almost 1,000,000.

In 1945, the latest year of complete record for the United States available in 1947, the birth rate for the white population was 19.2 per 1,000, while that for the Negro population was 23.3 per 1,000. The proportion of births attended by physicians ranged from 99.2% for white births in cities of 100,000 or more to only 39.8% for Negro births in rural areas. On the other hand, the proportion of births attended by midwives was at a minimum of 0.7% for white babies in cities of 25,000 or more, but at a maximum of 58.9% for Negro babies in rural areas.

In relation to age of mother, the birth rate in the United States in 1945 was at its highest at ages 25–29 years for white women, the rate being 131 per 1,000 women of those ages; for Negro women, the peak was at ages 20–24 years, with a rate of 149 per 1,000 women.

In view of a common opinion that the ratio of male to female births tends to increase in times of war, R. J. Myers studied the situation on the basis of available data for the United States and Canada over the period 1942–45 (*American Sociological Review*, Feb. 1947). It was concluded that "there is no evidence of any appreciable increase in masculinity of births in the United States and Canada during the second World War, especially when account is taken of the higher proportion of white births and of lower order births."

The sixth of the reports by P. K. Whelpton and C. V. Kiser on the social and psychological factors affecting fertility dealt with the planning of fertility (*The Milbank Memorial Fund Quarterly*, Jan. 1947). The subjects for the study were about 1,000 couples in Indianapolis who were considered typical of a large segment of the urban population. It was found that nearly 90% of the couples attempted, by contraceptive measures, to control the number and spacing of their children. The attempts to plan fertility began at marriage for about two-thirds of the couples, and before the end of the first puerperium by about one-sixth of the couples. Of the couples who knew that they did not experience a period of sterility, about one-half of those attempting to prevent or postpone the first or second pregnancy reported themselves as successful; similar efforts in connection with third, fourth or fifth pregnancies were successful in three-fifths of the cases. Almost three-

*Annual Birth Rates per 1,000 Total Population in Certain Countries in 1944, 1945 and 1946*

| Country | 1944 | 1945 | 1946 | Per Cent Change from 1945 to 1946 |
|---|---|---|---|---|
| Netherlands | 24.0 | 22.7 | 30.2 | +33.0 |
| France | 16.4 | 16.2 | 20.6 | +27.2 |
| Italy | 19.2 | 18.3 | 22.6 | +23.5 |
| Rumania | 21.7 | 19.6 | 23.8 | +21.4 |
| Scotland | 18.5 | 16.9 | 20.3 | +20.1 |
| Norway | 19.6 | 18.8 | 22.5 | +19.7 |
| United States | 20.2 | 19.6 | 23.3 | +18.9 |
| England and Wales | 17.5 | 16.1 | 19.1 | +18.6 |
| Belgium | 15.1 | 15.5 | 18.1 | +16.8 |
| Japan | 29.4 | 23.4 | 26.5 | +13.2 |
| Canada | 23.8 | 23.8 | 26.6 | +11.8 |
| Austria | * | 14.5 | 15.9 | + 9.7 |
| Australia | 21.0 | 21.8 | 23.7 | + 8.7 |
| New Zealand (excl. Maoris) | 21.6 | 23.2 | 25.2 | + 8.6 |
| Finland | 21.1 | 25.1 | 27.0 | + 7.6 |
| South Africa (white) | 26.6 | 25.8 | 27.7 | + 7.4 |
| Bulgaria | 21.9 | 24.1 | 25.7 | + 6.6 |
| Venezuela | 35.9 | 36.8 | 38.5 | + 4.6 |
| North Ireland | 23.5 | 22.0 | 22.6 | + 2.7 |
| Eire | 22.2 | 22.5 | 22.9 | + 1.8 |
| Denmark | 22.6 | 23.5 | 23.4 | − 0.4 |
| Switzerland | 19.6 | 20.1 | 20.0 | − 0.5 |
| Sweden | 20.3 | 20.2 | 19.6 | − 3.0 |
| Chile | 32.9 | 33.1 | 32.1 | − 3.0 |
| Portugal | 25.0 | 25.7 | 24.7 | − 3.9 |
| Mexico | 44.2 | 44.9 | 42.5 | − 5.3 |

*Data not available.

quarters of the couples agreed that the most desirable period to bear the first child is from two to three years after marriage, and more than four-fifths agreed upon a like period for the spacing between children. Although almost all husbands were familiar with contraceptive methods before marriage, only one-third of the wives were then acquainted with such methods. Almost all the other wives, however, acquired such information before their second pregnancy. (*See* also CENSUS DATA, 1947.)

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## Bismuth.

World production of bismuth was estimated to have reached 1,870 short tons in 1942, but declined to 1,210 tons in 1945 and 1,040 tons in 1946. United States production is about one-half of the total and Peru about one-third, while Mexico and Canada account for most of the remainder. United States output was not reported but is said to have declined by 38% in 1946, because of extended strikes in the smelters and refineries from which most of the metal is recovered as a by-product. Reported outputs for 1946 are as follows, with 1945 figures in parentheses for comparison: Bolivia 30.8 (17.9) short tons, Canada 117.1 (95.0), China 1.5 (—), Mexico 82.7 (178.0), Peru 343 (339). (G. A. Ro.)

## Black Markets.

Black markets in the U.S. were essentially an outgrowth of price controls. When, except for sugar, rice and rent, these controls were removed in Nov. 1946, the background for the black market virtually disappeared. Rice and sugar were decontrolled in July and October, respectively, so that of all wartime price regulations, only rent control remained in effect at the close of 1947. Violations of price ceilings were thus possible only in rentals.

Although 85 areas or portions of areas were decontrolled during 1947, an estimated 14,000,000 dwelling units remained under control at the end of the year. Tenant complaints dropped 38% and compliance actions 67% between the first and last half of 1947, but over-ceiling violations continued on a large scale. Tenants appeared to be restrained from bringing suits for fear of blacklisting or other retaliation. Eviction actions, a means of bringing pressure on the tenant for increased rentals without a written lease, increased 65% over 1946.

**U.S. Gray Market.**—This successor to the black market had its origin in the shortages of many materials and end products which, in spite of record peacetime production levels, co tinued throughout 1947. In the popular mind it consisted of form of profiteering in which speculators bought up all availab supplies of scarce materials with the intention of selling at e cessive prices.

Technically this definition is probably correct, but at least tw other factors contributed to the price squeeze. To keep in bus ness many small manufacturers found it necessary to rely o high-cost spot markets for their supplies, to engage in excessiv cross hauling and to accept abnormal conversion costs. Also, i the absence of legal prohibition many exporters made it a pra tice to charge all the traffic would bear. Much was done to cur the latter practice in Dec. 1947 when congress permitted th Office of International Trade in the department of commerce t take prices into consideration in granting export licences.

Perhaps the most widespread of all gray markets was i building materials. In hearings before the Joint Committee o Housing many instances of profiteering in pig iron, nails, lum ber, gypsum board, steel products and other items were re ported. Maldistribution, however, accounted in some part fo the high prices, as in the case of cast iron soil pipe.

Steel was likewise subject to profiteering. Estimates of th amount flowing into the gray market varied greatly from rela tively negligible quantities to substantial amounts. The out side estimates apparently included high priced output of smal mills forced to absorb uneconomic costs of spot supplies, exces sive cross hauling and abnormal markets—the results of basi conditions and not gray marketeering. Unquestionably som customers of integrated producers preferred to dispose of par of their supplies in the gray market rather than use it them selves. When cognizant of this fact the producers took steps t cut off the customer, even when this involved the threat o legal action for contract violation. Complete policing, how ever, was impossible. Another contributing factor was the pres sure exerted by some scrap dealers on small producers, many o whom were completely dependent on scrap for their raw mate-

OPEN-AIR TRANSACTION in Paris. Low incomes and the continued scarcity of food and other necessities kept black markets thriving in the French capita during 1947

rial. In return for scrap, the dealers forced the mills to furnish them specified quantities of finished steel products which frequently were diverted outside normal distribution channels at high prices.

Gray marketeers also were active in the purchase and sale of automobiles. Production of about 3,500,000 passenger cars in 1947 failed to satisfy demand, and second-hand postwar models continued to bring prices well in excess of those charged for new cars. Many real or pseudo consumers bought for resale through used car lots or individual offerings, and the ability of manufacturers to control the situation was limited. Where it was known that a dealer was profiteering, it was customary to take away his franchise. But since connivance between new and used car dealers was the exception rather than the rule, the results of such policing were relatively insignificant.

Gray markets in exports were probably no more prevalent than in domestic transactions, although some merchandise for prompt delivery was obtained through abnormal trade channels at excessive price levels. A limited number of domestic overmarket sales apparently were consummated in lead, copper, aluminum and other scarce materials. (H. B. My.)

**Continental Europe.**—Black market operations in Europe in 1947 continued to involve directly almost every person able to pay the high prices demanded. In France the pattern was one common to all Europe: money was so unstable as to be undesirable in large quantities and therefore at all costs to be transformed into goods. In general, black market prices were two-and-a-half to three times higher than official prices. It was observed that the black market price fell rapidly as soon as a commodity was released from rationing. When control was taken off wine during the summer, the price for an ordinary bottle fell from about frs. 120 to frs. 45. Major black markets continued to exist in textiles and machinery.

Although conditions were better in the Scandinavian countries and in Switzerland, where there was some rationing but no real scarcity and consequently no black market, the position of the rest of Europe was much the same as that of France. In Italy, Spain and Greece, where many peasants were as badly off as townspeople, the contrast of the luxury provided by the black market with the near-starvation of the lower grades of workers was even more acute. In western Germany, under conditions of total scarcity and with a distrusted domestic currency, black market dealings were based primarily on barter. Here, more than anywhere in Europe, the cigarette was the real currency.

**Great Britain.**—During 1947 the black market in Great Britain continued to be active but did not openly flourish as it did on the European continent. Thefts of cloth, cigarettes and whisky continued to supply the black market. From time to time protests were made against greengrocery wholesalers and retailers for selling scarce fruit and vegetables either above the controlled price or on the understanding that a quantity of less desirable produce was also purchased. In the autumn illicit sales of young pigs took place and later the black market in livestock of all kinds was beginning to reach serious proportions. (G. Ln.)

**Blood Plasma:** *see* PHYSIOLOGY.
**Blue Cross:** *see* INSURANCE.

**Bolivia.** A land-locked republic in south central South America. Area, 416,040 sq.mi.; pop. (1945 est.), 3,596,000. The legal capital is Sucre (est. pop., 1946, 32,000); the real seat of government is La Paz (est. pop. 301,000). Other cities (with pop. estimates) include Cochabamba (80,000), Oruro (50,000), Potosí (40,000), Santa Cruz (32,800) and Tarija (27,000). Racial distribution is estimated to be 52.34% Indian, 27.5% mestizo, 13.08% white, 0.22% Negro and 6.85% unspecified. Religion: predominantly Roman Catholic. Presidents in 1947: Tomás Monje Gutiérrez, to March 10; Enrique Hertzog, from March 10.

**History.**—Developments in the early months of 1947 were a direct aftermath of the sensational revolt of July 1946 in which the dictator, Lieut. Col. Gualberto Villarroel, was overthrown and killed. Tension remained at a height in the closing months of 1946 despite the provisional government's promise of presidential elections early in January. In the campaign, as it shaped up at the end of 1946, Enrique Hertzog and Luis Fernando Guachalla emerged as the outstanding opposing candidates. The election was held as scheduled on Jan. 5. Five days later a four-man commission was named by the provisional regime to supervise a recount and certification of the vote, which apparently was quite close. Official results were announced Jan. 16: Hertzog, 43,581; Guachalla, 43,203. The ministry of government announced on Jan. 20 that inasmuch as neither of the two men had an absolute majority of the popular vote it would be necessary for congress to make a decision, as required by the constitution; supporters of the two were almost equally represented in congress.

Guachalla on Feb. 24 withdrew all claim to the presidency, clearing the way for congressional choice of Hertzog soon thereafter. On March 6 congress elected José Antonio Arce, leader of the liberal P.I.R. (Partido Izquierdo Revolucionario), as president of the chamber of deputies.

Hertzog was inaugurated on March 10 and announced an all-Socialist Republican Union cabinet. He lauded the Argentine government and pledged economic co-operation with that country. The government on May 1 arrested Víctor Andrade, an M.N.R. leader and former ambassador to the United States, along with 11 other leaders of the M.N.R., and deported them to Chile because of political plotting. A strike of miners at Bolivia's largest tin mine, beginning May 8, further complicated matters for the government; the mine reopened on government orders on May 24. Labour difficulties continued, however, and on Sept. 18, Pres. Hertzog declared a state of siege; the situation was especially confused in the Catavi area, where the so-called Catavi massacre of miners and their families had occurred in Dec. 1942.

The provisional government was forced to put down Indian raids on farms near Lake Titicaca on Jan. 10. A serious flood at Trinidad in northern Bolivia on Feb. 28 inundated about 50,000 sq.mi. and necessitated evacuation of 200 persons by plane. Bolivia adhered to the I.R.O. (International Refugee Organization) in May and agreed to contract for the immigration of 100 European refugee families.

Bolivia on Oct. 26 concluded an agreement with Argentina to arbitrate all mutual disputes.

**Education and Religion.**—The women's civic league of Bolivia began co-operation during the year with the ministry of education for organization of Sunday courses for workers in reading, writing, Bolivian history and geography, English, Spanish, arithmetic, religion and ethics, civil and criminal law and other subjects. The government during the year decreed pay raises (of from 5% to 65%) for all teachers.

**Finance.**—The theoretical monetary unit is the gold peso, valued at 20.6 cents, U.S. currency. Most transactions, however, are carried on in terms of bolivianos, valued at 2.36 cents (controlled price), U.S. currency, on Oct. 31, 1947. The extraordinary budget was approved by decree on June 27 in sum of 316,776,000 bolivianos; the ordinary budget for the year amounted to 1,156,000,000 bolivianos, the total of the two being 1,472,776,000. Government receipts by April 30 under the ordinary budget were only 66% of expenditures, but the budget director predicted that the deficit would be made up later in the year; revenues by that time were 122,536,000 bolivianos below expectations. The drop was blamed largely on declining tin exports, which had an unfavourable effect on the whole economic picture. The Central bank's dollar balance Jan. 1, 1947, was $1,707,000; the overdraft in dollars April 30 was $2,040,000. A report circulated at that time that a short-term loan of $2,500,000 would be obtained from the New York Federal Reserve bank. Pres. Hertzog on May 31 approved a law authorizing a $5,000,000 loan from a U.S. commercial bank. Another law in May raised the national government's credit limit with the Central bank to 1,300,000,000 bolivianos plus a 200,000,000-boliviano mortgage loan against public construction. The law represented an increase of 600,000,000 bolivianos in the government's credit with the bank; the bank unsuccessfully tried to oppose effecting of the law. Accumulation of unprocessed applications for import licences totalled $50,000,000 by early in the year; the exchange shortage resulted partly from the drop in tin exports during negotiations for a new purchase contract.

**Trade and Communications.**—Imports in 1946 were 313,000 metric tons valued at $52,223,000; exports in the same year were 200,175 metric tons valued at $72,519,000. Imports of petroleum products in 1946 totalled 149,928 bbl. and included 138,325 bbl. of motor fuel. Economic relations with Argentina increased in various ways during the year. The two countries on March 8 signed an economic pact, which the Bolivian congress approved on May 26. On March 26 Bolivia signed a tin-sale agreement with Argentina. Presidents Hertzog and Juan D. Perón met at Yacuiba on Oct. 23 and signed a comprehensive trade pact, terms of which resembled those Argentina had negotiated with Chile. After long negotiations, Bolivia concluded a tin agreement with the United States in March, retroactive to Jan. 1; the basic price was increased from 67 to 76 cents per lb. The government also undertook negotiations for a new trade agreement with Peru.

A section of the railway from Corumbá, Brazil, to Santa Cruz (all of it to be part of a new transcontinental railway from Santos, Brazil, to Arica, Chile), was opened for 186 mi. east of Corumbá early in 1947; it was anticipated that the line would be completed as far west as San José during the third quarter of 1947. The government planned an early start on work on a La Paz-Beni railway to the north. Various highway projects were advanced irregularly during the year.

**Agriculture.**—A U.S.-Bolivian agricultural experiment station program passed the planning stage during 1947; it was designed to begin with experiments with forage crops both in the altiplano and at lower elevations. Brazilian seed was being used extensively in eastern Bolivia. The program planned to pay attention to wheat, barley and rye cultivation.

**Mining.**—Crude oil production in 1946 was 362,659 bbl. (1945: 381,554 bbl.); petroleum products marketed in 1946 totalled 362,981 bbl., including 250,615 bbl. of motor fuel. The government officially approved a petroleum development program on July 3, 1947, involving an Export-Import bank loan of $8,500,000 to Bolivian agencies, approval of contracts for new and extended pipe lines, construction of refineries at Cochabamba and Sucre, etc. Labour difficulties during the year led the government to prohibit closing of any mines for one year.

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**Bombing:** *see* ATOMIC ENERGY; MUNITIONS OF WAR.
**Bonaire:** *see* CURAÇAO.
**Bonds:** *see* STOCKS AND BONDS.

## Book-Collecting and Book Prices.

There was a marked increase in the collecting of pure Americana and historical works during 1947, and a concurrent decrease in the collecting of literature in the United States. Prices showed the effect of this movement, which was sufficiently strong to deserve more than the designation of a mere trend. Symptomatic were the prices paid in New York city during October for the books of Herbert S. Auerbach, with the following prices suggesting the whole: W. Clayton's *Latter-Day Saints' Emigrants' Guide* (1848), $1,150; Joseph Smith's *A Book of Commandments for the Government of the Church of Christ* (1833), $1,250; Joseph Cain and Arieh C. Brower's *Mormon Way-Bill* (1851), $3,400. Increased shipments of material from Europe to the United States caused prices in the U.S. market for such material to show definite decrease.

The most notable event of the year was the sale at Parke-Bernet galleries in New York city (Jan. 28) of the Prince-Crowninshield-Stevens-Brinley-Vanderbilt-Whitney copy of the *Bay Psalm Book*, printed by Stephen Daye at Cambridge, Mass., in 1640. It was knocked down to the Rosenbach Company for $151,000, thus establishing the highest price ever paid at public sale for a printed book. It was purchased for Yale university libraries, the transfer being marred by a financial misunderstanding which was not satisfactorily explained publicly by either of the principals in the transaction. On another plane was the price realized for a holograph note of Herbert Hoover, written while president of the United States, which was sold at Samuel T. Freeman & Co. galleries (Philadelphia) for the astonishing price of $550. Another noteworthy price was realized at Sotheby's (London) on March 11 when a Gutenberg Bible (vol. 1 only) brought £22,000.

The European market continued turbulent with prices bas on those of commodities in the black market. As for the Briti market, Sir D'Arcy W. Thompson summarized it by declari that the price of better old books had risen greatly, to the poi where the bibliophile-scholar could no longer hope to posse books which he could well afford 30 or 40 years before. S D'Arcy attributed this condition to economic causes, taste a fashion, and the great increase in public libraries, especially the United States.

Among bibliographical publications were: *The New Col phon: A Book Collectors' Quarterly*, edited by John T. Wi terich, Frederick B. Adams, Jr., and Elmer Adler; *Dakota In prints, 1858–1889*, edited by Albert H. Allen; *Carrousel f Bibliophiles*, edited by William Targ; Colton Storm and Hov ard Peckham's *Invitation to Book Collecting;* the Grolier Club *One Hundred Influential American Books Printed Before 190* Worthy of inclusion in this list was the catalogue of books an manuscripts issued by Bernard Quaritch, Ltd. (London) commemorate the 100th anniversary of the establishment of th firm, containing a biographical study of Quaritch written by h daughter, Charlotte Quaritch Wrentmore.

In December, the R. R. Bowker company, publishers to th U.S. book trade, announced plans for the establishment of magazine, *Antiquarian Bookman*, under the editorship of Sc M. Malkin, devoted exclusively to antiquarian books and relate literary material and designed for antiquarian book dealer librarians and collectors. (J. BK.)

## Book Publishing.

The increase of title production in th U.S. which began after the close o World War II continued in 1947 with a total of 9,182, or 1,44 more titles than appeared in 1946. Greatest increase was show in the field of fiction, followed in order by those of religion an theology, philosophy and ethics, science and law. Books on fin arts represented the single class with title production on a de cline, but this may have been a result of increased costs a well as paper shortages. The five leading publishing houses o 1947, as in the previous year, were Doubleday (and subsidiaries with 447 titles, followed by Macmillan (420), Harper (wit Hoeber) (241), Grosset & Dunlap (232) and McGraw-Hi (with Whittlesey House) (214). Book reviewers and deale deplored the flood of new titles appearing in November whic resulted in a seeming neglect on the part of the critics an possibly lowered sales.

There was a marked increase (about $6,500,000) in boo exports from the U.S. to supply an almost insatiable market i Europe and Asia where so many libraries were sadly deplete or totally destroyed.

Table I.—*Publication of Books in the U.S., 1947 and 1946*

| International Classification | 1947 New books | 1947 New editions | 1947 Total | 1946 New books | 1946 New editions | 1946 Total | Ne Chan |
|---|---|---|---|---|---|---|---|
| Philosophy, Ethics | 240 | 50 | 290 | 164 | 28 | 192 | +9 |
| Religion, Theology | 560 | 70 | 630 | 479 | 51 | 530 | +10 |
| Sociology, Economics | 331 | 56 | 387 | 284 | 27 | 311 | +7 |
| Law | 158 | 56 | 214 | 98 | 26 | 124 | +9 |
| Education | 166 | 28 | 194 | 128 | 19 | 147 | +4 |
| Philology | 119 | 37 | 156 | 76 | 32 | 108 | +4 |
| Science | 304 | 138 | 442 | 244 | 106 | 350 | +9 |
| Technical & Military Books | 299 | 94 | 393 | 261 | 76 | 337 | +5 |
| Medicine, Hygiene | 187 | 135 | 322 | 195 | 105 | 300 | +2 |
| Agriculture, Gardening | 73 | 24 | 97 | 37 | 18 | 55 | +4 |
| Domestic Economy | 158 | 43 | 201 | 116 | 28 | 144 | +5 |
| Business | 163 | 65 | 228 | 166 | 50 | 216 | +1 |
| Fine Arts | 224 | 25 | 249 | 236 | 31 | 267 | −1 |
| Music | 77 | 17 | 94 | 54 | 17 | 71 | +2 |
| Games, Sports | 127 | 41 | 168 | 110 | 24 | 134 | +3 |
| General Literature | 348 | 52 | 400 | 283 | 54 | 337 | +6 |
| Poetry, Drama | 463 | 48 | 511 | 392 | 49 | 441 | +7 |
| Fiction | 1,307 | 659 | 1,966 | 1,134 | 588 | 1,722 | +24 |
| Juvenile | 834 | 99 | 933 | 798 | 79 | 877 | +5 |
| History | 345 | 68 | 413 | 306 | 53 | 359 | +5 |
| Geography, Travel | 164 | 32 | 196 | 103 | 30 | 133 | +6 |
| Biography | 455 | 63 | 518 | 406 | 50 | 456 | +6 |
| Miscellaneous | 141 | 39 | 180 | 100 | 24 | 124 | +5 |
| Total | 7,243 | 1,939 | 9,182 | 6,170 | 1,565 | 7,735 | +1,44 |

**Best Sellers.**—Topping the 1947 list of best sellers in fiction was Laura Z. Hobson's *Gentleman's Agreement,* with an over-all sale among stores and book clubs of more than 1,000,000 copies. Second highest on the fiction list was *Prince of Foxes,* by Samuel Shellabarger, with an over-all sales total of 832,000. The bookstore sales for each were 172,615 and 107,000, respectively. They were followed, in third place, by Sinclair Lewis' *Kingsblood Royal* which, like *Gentleman's Agreement,* dealt with inter-racial relations. Next in order of total sales were *The Moneyman* by Thomas B. Costain, *Lydia Bailey* by Kenneth Roberts, *The Wayward Bus* by John Steinbeck, *The Miracle of the Bells* by Russell Janney, *The Vixens* by Frank Yerby, *House Divided* by Ben Ames Williams and *East Side, West Side* by Marcia Davenport; the last two titles were sold only through the bookstores. Rated by bookstore sales alone, *The Miracle of the Bells* in its second year as a best seller took first place and *Prince of Foxes* (second on the above list) placed last.

John Gunther's *Inside U.S.A.,* with 187,000 copies in print, took first place on the 1947 best-seller list for nonfiction, including store and book club sales. It was followed in second place by *Human Destiny* by Pierre Lecomte du Noüy. Joshua Liebman's *Peace of Mind,* a best seller for two years running, was in third place. It was followed, in order of total sales, by the *Information Please Almanac, 1947, Together* by Katherine T. Marshall, *A Study of History* by Arnold J. Toynbee, *The Egg and I* (a best seller for the third consecutive year) by Betty MacDonald, *Speaking Frankly* by James F. Byrnes, *The American Past* by Roger Butterfield and *The Fireside Book of Folk Songs.* On the basis of bookstore sales alone, *Peace of Mind* was first among nonfiction best sellers, having sold about 270,669 copies exclusive of book club and foreign sales. (X.)

**Great Britain.**—Book publishing in Great Britain, during 1947, continued to a great extent to follow the general pattern imposed upon it during World War II. In the first 10 months of 1947, the total number of new titles published in Great Britain was 10,653, of which 1,934 were reprints and new editions (comparative total figures for previous full years were: *1939,* 14,904; *1940,* 11,053; *1941,* 7,581; *1942,* 7,241; *1943,* 6,705; *1944,* 6,781; *1945,* 6,747; *1946,* 11,411).

In the first 6 months of 1947 the volume of business amounted to £13,370,661 (compared with £12,293,692 for the corresponding period of 1946). Since the trade in books during the second half of any year is invariably greater than in the first half, it was expected that the final figure for the whole of 1947 would be greater than the 1946 figure of £26,961,622, which was itself nearly £5,000,000 greater than the 1945 figure. The prewar average annual total was about £10,000,000. During the first half of 1947, the export trade amounted to £3,360,830, compared with £3,095,929 during the corresponding period of 1946.

Despite these considerable increases British book publishers were unable to supply more than a fraction of the quantity of essential books required. In May 1947 the vice-chancellor of Cambridge university, supported by the heads of colleges, appealed in the *London Times* to all former Cambridge students to relieve the book shortage at the university by lending or selling to their old colleges such textbooks and standard works as they might still possess and could spare. At Jan. 1947 the book publishers' paper ration stood at 80% of their prewar consumption, plus an additional 10% for export. In March the basic ration was cut to 70% and in May was further reduced to 60%. Provided a publisher undertook to devote the same proportion of his basic ration as hitherto to the production of educational books or to export he was eligible to receive an additional 20% for these special purposes. Restrictions imposed in Sept. 1947 on the importation of foreign books into Great Britain further aggravated the shortage of technical books.

PROFESSOR ARNOLD J. TOYNBEE, English scholar, in an informal discussion with students at Bryn Mawr college, Pa. A one-volume abridgment of his six-volume *A Study of History,* published in March 1947, became a leading best seller of the year

**Europe.**—In France, although the devaluation of the franc and the exorbitant cost of imported paper inflated the price of books, output in titles approached prewar level. In each of the zones of Germany, general publishing went forward, but the main effort was concentrated upon providing the denazified school books that were required in prodigious quantities. Polish and Czechoslovakian book publishing, which had practically ceased during the years of occupation, except for "permitted" publications, was notably restored, while in the Netherlands and Belgium, from all appearances and accounts—and still more in Italy—book production had fully caught up with, and possibly even outrun, readers' requirements. In Switzerland and in the Scandinavian countries book publishing was marked by its considerable volume and admirable technical quality.

(*See* also AMERICAN LITERATURE; ENGLISH LITERATURE.)

(E. SE.)

**Books:** *see* BOOK PUBLISHING; CHILDREN'S BOOKS; *see* also under AMERICAN LITERATURE; ENGLISH LITERATURE; FRENCH LITERATURE; etc.

**Book Sales:** *see* BOOK-COLLECTING AND BOOK PRICES; BOOK PUBLISHING.

**Borneo:** *see* NETHERLANDS INDIES; NORTH BORNEO.

## Boron Minerals.

The United States output of boron minerals made a new record high in 1946 with 430,689 short tons, against 325,935 tons in 1945. This figure is more than a third greater than the previous high of 1937 but the boron content had increased by only 7%. Imports, which had been lacking for 3 years previously, rose from 1,344 lb. in 1945 to 100,567 lb. in 1946. U.S. exports of borax dropped from a high of 154,052 tons in 1937 to a low of 27,118 tons in 1943, but had recovered to 53,303 tons in 1946. About 90% of the world output is produced in the United States. (G. A. RO.)

## Boston.

Boston, the capital of Massachusetts and the ninth city in the United States in population, is located on the Atlantic seaboard at the head of Massachusetts bay. It had a population of 770,816 by the 1940 federal census and a land area of 43.9 sq.mi.

Mayor James M. Curley's appeals from the findings of the federal court in 1946 were not sustained and he started serving the sentence imposed by the court on June 26. Under a special statute, City Clerk John B. Hynes became temporary mayor during the absence of the mayor. This act gave Hynes permanent tenure as city clerk at the end of his service as temporary mayor and permitted Mayor Curley to receive his regular salary. Mayor Curley was pardoned by President Harry S. Truman Nov. 26 and returned to his office immediately.

Loan orders authorizing expenditure of $27,000,000 for veterans' and low-cost housing were adopted by the city council. Subsequently, the housing authority awarded contracts totalling $10,000,000 and providing for the erection of 434 buildings containing 851 apartments. A loan of $5,000,000 was issued for the establishment of off-street parking facilities, and three locations in downtown Boston were taken and conversion of these areas into parking lots started. The council authorized installation of 5,000 parking meters throughout the city and the traffic commission prepared for installations in the Back Bay. The construction of a garage under Boston common was deferred because of court action claiming use of the common for garage purposes would be in violation of the terms under which it was originally secured.

The Metropolitan Transit authority, a political subdivision of the commonwealth, exercised the option provided in the 1931 Boston Elevated Public Control act, paid over to the company cash equal to $85 per share for all outstanding common stock and became invested with the assets, property and franchises of the company and assumed all its outstanding indebtedness and liabilities. The transit commission started construction on an $8,500,000 rapid transit project in East Boston.

Pay-roll costs were sharply expanded by legislative acts authorizing (1) a 48-hr. work week for firemen, (2) one day off in six for patrolmen, (3) substantial increases to school teachers, (4) a 40-hr. work week for employees, except police, firemen and teachers and (5) equal pay for teachers.

The 1947 tax rate was $46.50 (1946—$42.00) on an assessed valuation (real and personal) of $1,558,610,900, an increase of $22,225,300. Budget: (city and county) $61,802,673.82, an increase of $8,000,000; (schools) $19,675,134.99, an increase of $2,100,000. School enrolment decreased 2½%. In the period Jan.–Nov., bank clearings increased 10.7%, bank debits increased 4.7%, department store sales increased 6.9%, manufacturing employment increased 4%, manufacturers' payrolls increased 14%. (C. J. Fx.)

**Botanical Gardens:** *see* BOTANY.

## Botany.

During 1947 botanical activity returned to prewar levels, despite a shortage of qualified instructors and investigators. A survey of the requirements and of the availability of botanists in the U.S.A., conducted by the Botanical Society of America, indicated that by 1950 there would be a 33% shortage of Ph.D.s and a 46% shortage of M.A.s in botany.

Several international congresses of interest to botanists were held during the year. These included the sixth International Congress for Experimental Cytology in Stockholm, Sweden, and the fourth International Congress of Microbiology in Copenhagen, Denmark. Several new journals made their initial appearance, including *Heredity*, published in England, and *Evolution*, published in the United States.

Most botanical societies in the United States held their annual meetings in Chicago, Ill., in December, in connection with the American Association for the Advancement of Science. A botanist, Professor E. C. Stakman, became president-elect of the A.A.A.S. At these meetings, a sufficient number of botani and zoological societies voted to join the proposed Ameri Institute of Biological Sciences to ensure the organization this agency.

All phases of botanical research showed activity during year. Progress was greatly accelerated by the use of newly veloped techniques. The electron microscope began to play significant role in botanical investigation. The greatly increas availability of radioactive isotopes made possible more extens use of these substances in the study of plant metabolism. Pla tissue-culture techniques were further improved and were tensively employed in physiological and genetical investigatio The growing realization of the important biological effect many chemical substances led to a sharp rise in the number investigations in this field. With the assistance of the new established Chemical-Biological Co-ordination centre of t national research council, a number of workers began an exte sive study of the structure of organic compounds in relation their biological effects.

**Research Projects.**—J. T. Buchholz developed methods f the study of cell structure by electron microscopy and describ details of chromosome and mitochondrial structure in vario tissues.

M. S. Brown reported results of the Bikini atomic bomb tes on chromosome structure in cotton. Induced abnormalities i cluded the presence of multivalents, loss of a chromosome a reduction in chiasma frequency.

S. Aronoff, A. Benson, W. Z. Hassid and M. Calvin expos barley seedlings to $C^{14}O_2$ for 60 min. in the light and found t radiocarbon to have been incorporated not only into sugars b also into a variety of other compounds, including amino acid proteins, cellulose and lignins.

C. P. Swanson found that exposure to infra-red before after X-raying increased the number of induced structur changes in the chromosomes in *Tradescantia* microspores.

A. C. Hildebrandt and A. J. Riker showed that tissues higher plants grown in culture respond differently to differe growth-regulating substances. They suggested that tissue cu tures might become valuable as assays of growth regulators.

N. F. Kent and R. A. Brink found that addition of case hydrolysate or tomato juice to the medium in early stages c barley embryo culture prevented premature differentiation, thu ensuring larger, more robust plants.

A. H. Sparrow and M. R. Hammond reported the presence o Feulgen-positive bodies in the cytoplasm of meiotic prophas stages of microsporecytes of eight genera of plants. This con tradicts earlier concepts according to which Feulgen-positiv desoxyribose nucleic acid is confined to the nucleus.

R. S. deRopp showed that bacteria-free crown-gall tumou tissue, growing on tobacco, tomato or sunflower, generates diffusible substance capable of stimulating growth of norma tissue and converting it into tumour tissue.

Sterling Emerson produced a mutant strain of *Neurospor* which requires sulfonamides for growth. T. Kushinck, C. Randle, C. T. Gray and J. M. Birkeland similarly found strain of certain bacteria which require the antibiotic streptomycin fo growth.

C. C. Lindegren and C. Raut found that inability of mutan yeast to grow in media deficient in a specific vitamin is not ab solute, but may be a function of the concentration of that vita min, or of the presence or absence of certain mineral con stituents.

D. I. Macht showed that blood sera from human patients wit different diseases have different effects upon the growth o *Lupinus*, thus offering a possible new method for the differentia diagnosis of these diseases. (*See* also BIOCHEMISTRY; GE

NETICS.)

Books published during the year include: *The Fungi,* by F. A. Wolf and F. T. Wolf; *Introduction to Paleobotany,* by C. A. Arnold; *Diseases of Crop Plants,* by J. G. Dickson; *Radioactive Traces in Biology,* by M. D. Kamen; *Trace Elements in Plants and Animals,* by Walter Stiles; *Hormones and Horticulture,* by G. S. Avery, Jr., and B. B. Johnson; *Nature and Prevention of Plant Diseases,* by K. Starr Chester; *Introduction to Plant Anatomy,* by A. J. Eames and L. H. MacDaniels.

BIBLIOGRAPHY.—*Annals of Botany; American Journal of Botany; Biologia; Nature; Science; Biological Abstracts; Botanical Reviews.*
(R. E. CD.)

**Arboretums and Botanical Gardens.**—The National arboretum in Washngton, D.C., was reactivated by the appointment of a special arboretum dvisory committee by the secretary of agriculture. This committee, omposed of 16 citizens, was given the responsibility of drawing up a tatement of scope and objectives for the National arboretum, and was nost active during 1947; it made its report to a congressional committee nd asked for specific funds to carry out the projected plans. Frederic P. Lee of Bethesda, Md., was designated chairman of this committee.

The Arnold arboretum of Harvard university received two gifts of pproximately 150 ac. of land in Weston, Mass., and nearly $1,000,000 n endowment. A rearrangement of its policies enabled the Arnold aroretum to grow only meritorious plants on its grounds at Jamaica Plain, Mass., and all other plants in permanent nursery rows on the Weston roperty about 12 mi. away. This greatly reduced the maintenance costs f the arboretum proper. The Morton arboretum of Lisle, Ill., had exellent success with its classes for homeowners in landscape planning nd also in various types of art work dealing with plants. Its program or training Chicago schoolteachers in nature study proved a tremendous uccess, and it was being expanded, including many classes for children hroughout the summer.

The New York Botanical garden continued the extensive drive for unds for new buildings. One of the innovations in its rather extensive educational program was a special radio program initiated on a weekly basis. Dr. P. P. Pirone, formerly of New Jersey Agricultural Experiment station, was appointed to the position of plant pathologist. The University of Washington arboretum at Seattle, Wash., reorganized its Arboretum oundation and the method by which this active group of private citizens works for the arboretum's interests was further clarified. The objectives, lans and history of the Cornell plantations (Cornell university, Ithaca, N.Y.) were clearly outlined and discussed in book form, *The Cornell Plantations, A History,* by Ralph S. Hosmer.

The American Association of Botanical Gardens and Arboretums held its annual meeting in San Francisco, Calif.; past accomplishments and uture plans were discussed. One of its publications during the year, *The Arboretums and Botanical Gardens of North America,* by Donald Wyman, Arnold arboretum, Harvard university, discussed in detail all the 90 "gardens" in this category, together with others that had been disontinued and 26 additional "gardens" in 19 states that had been established or were about to be established. (*See* also HORTICULTURE.)
(D. WN.)

## Bowles, Chester

(1901– ), U.S. businessman, government official, author and economist, was born in Springfield, Mass., on Aug. 5. A graduate of Yale, 1924, he formed with William Benton in 1929 the advertising firm of Benton and Bowles and became chairman of its board in 1936. He resigned in Jan. 1942 to become tire-rationing director and later Office of Price Administration director for Connecticut. On July 15, 1943, he was appointed national OPA general manager and, on Oct. 25, OPA administrator. For three years he fought vigorously to maintain and popularize effective price, rent and rationing controls. On Feb. 14, 1946, President Harry S. Truman appointed Bowles director of the Office of Economic Stabilization. In this post he exercised supervisory authority over prices, wages and their interrelations with agricultural and industrial production. He also carried on in the spring of 1946 a bitter fight for one year's extension of price controls after July 1946. On June 28, however, he resigned in protest against congressional weakening of the price control act and urged President Truman to veto the new bill. He predicted that it would permit sharp increases in living costs and a grave danger of inflation. In the autumn of 1946 he was active in Connecticut state politics but failed to receive the Democratic nomination for governor. In 1947 he attended the Paris United Nations Educational, Scientific and Cultural organization conference as an alternate U.S. delegate; lectured widely and wrote articles on current economic problems; served as a consultant to the United Nations and directed the economic report of Americans for Democratic Action. His book, *Tomorrow Without Fear,* published in June 1946, urges annual federal expenditures sufficient to assure full production and argues for greater equality in income distribution to widen mass markets. In 1947 Trygve Lie appointed him chairman of the International Committee of the United Nations Appeal for Children, a voluntary nongovernmental group. In this capacity he left for Europe in Dec. 1947, for an extended survey of the committee's organization in Europe. (R. R. R. B.)

## Bowling.

Junie McMahon of Chicago scored one of the infrequent "doubles" of American Bowling congress history by winning both the singles and all-events of the 1947 tournament. He scored 247–248–245—740 to win the singles crown in competition at Los Angeles, Calif., and collected the all-events title with 1,965. The doubles division went to Edward Doerr, Jr., and Len Springmeyer of St. Louis, Mo., with 1,356. The Eddie and Earl Linsz team of Cleveland, O., won the five-man event with 3,032. Members of the team were: Fred Drury, Samuel Pantelione, Charles Whiteman, Steve Pisesalko and Theodore Miller.

Andy Varipapa, Hempstead, N.Y., veteran, repeated as national individual match game champion, defeating Joe Wilman of Berwyn, Ill., by 17 pins. Stanley Slomenski of Newark, N.J., was third.

In the women's international congress championships, winners were: Marge Dardeen of Cincinnati, O., all-events; Candice Miller and Emma Beard of Fort Wayne, Ind., doubles; Kornitz Pure Oil of Milwaukee, Wis., team. (M. P. W.)

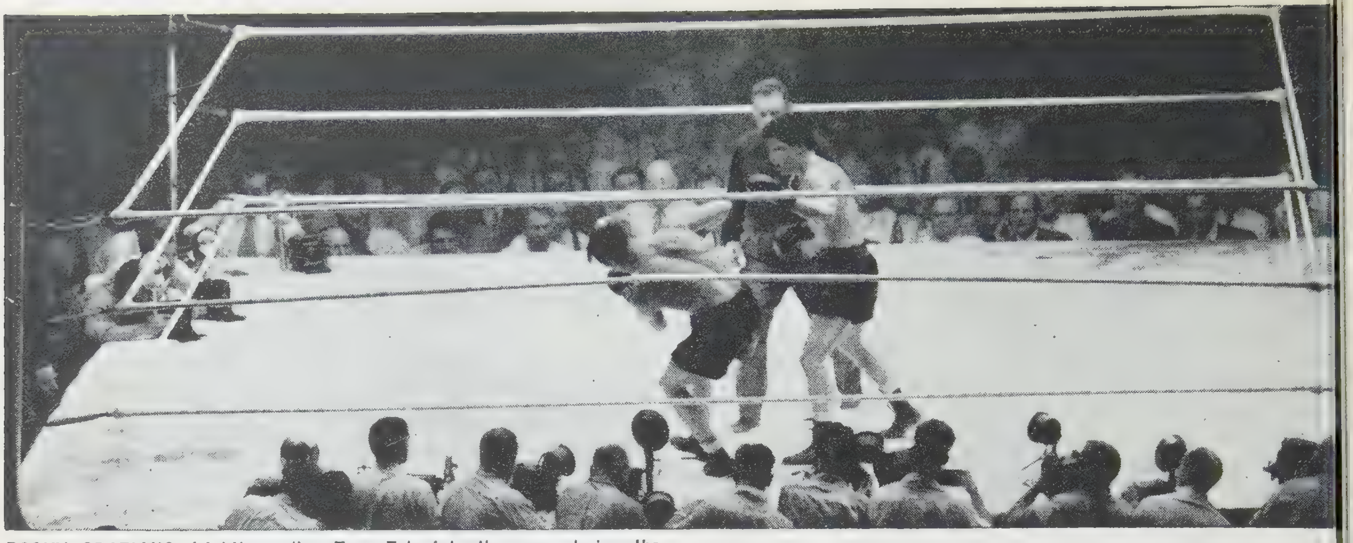
## Boxing.

Professional boxing in the United States started under a cloud in 1947. It ended with a roar of disagreement over a decision in a world heavyweight championship match. Between these periods, spread almost over the year's span, the sport was subjected to a legal investigation in its richest centre, New York; four champions retained their titles, two title-holders were dethroned; another title was declared forfeited for inability of the champion to make his class weight, only to be later restored, and the sport generally underwent a sharp dip from the standpoint of patronage and gate receipts. Tragedy presented itself when, for the first time in modern history, a challenger died following a championship bout.

The investigation of alleged charges that he failed to report a proffered bribe to throw a bout against Reuben Shank in 1946 led to the revocation of the licence of Rocky Graziano in his native New York. Ineligible in his own state, Graziano knocked out Tony Zale of Gary, Ind., in the sixth round of a bout held at Chicago Stadium, Chicago, Ill., July 16, to become world middleweight champion, despite his ineligibility. The bout drew record indoor receipts of $422,918, paid by a crowd of 18,547, which saw Graziano avenge a similar defeat he had suffered at the hands of Zale in 1946, and provided the most thrilling ring spectacle of the year.

Subsequently, publicity was given an unfavourable army record of Graziano's, with the result that the champion found himself disqualified in every important boxing centre. He was still vainly waiting for reinstatement when the year ended, without having once defended his title.

Ray Robinson, world welterweight champion, was also under investigation. He was exposed to official inquiry for failure to report an alleged bribe of $25,000 not to make weight for a bout. The investigation ended with Robinson fined $500 and suspended for 30 days. It was in Robinson's sole defense of his title that tragedy occurred. He knocked out Jimmy Doyle (Delaney), Calif., in the eighth round of a bout at Cleveland, Ohio, July 24, and the following day Doyle died in a Cleveland



ROCKY GRAZIANO (right) sending Tony Zale into the ropes during the world middleweight championship bout at Chicago on July 16, 1947. Graziano became the new titleholder by a technical knockout in the sixth round

hospital. The fatality led to reform in the examination of boxers, orally and physically, which took root in Cleveland and swept the country.

Robinson knocked out Chuck Taylor, Coalport, Pa., in the 6th round of a scheduled 15-round bout Dec. 19, at Detroit, Mich., and following the bout Taylor was removed to Woman's Hospital, Detroit, for observation for a kidney complaint. He was released the following day. The bout drew receipts of $83,522, an indoor record for Michigan.

Joe Louis made one defense of his world heavyweight title and narrowly missed being dethroned. Against Jersey Joe Walcott, in Madison Square Garden, New York, Dec. 5, Louis, far below the form which established him as one of boxing's greatest fighters, retained his title after 15 rounds, on a split decision. The vote was 2 to 1 in favour of the champion. The decision created a furore among onlookers who paid receipts of $216,477, a new record for Madison Square Garden, who disagreed violently after having seen Walcott floor Louis in the first round for a one-count, and again in the fourth round for a seven-count. The Madison Square Garden former receipts record was $201,613, made by Jack Delaney and Jim Maloney in 1927.

Disappointed with his own showing, Louis frankly admitted that his reflexes had dimmed with the passing of the years, and, insisting on a return bout against Walcott for the summer of 1948, declared it would be his last ring battle.

Gus Lesnevich, Cliffside Park, N.J., retained his world light-heavyweight title when he knocked out Billy Fox, Philadelphia, Pa., in the tenth round of a bout held in Madison Square Garden, Feb. 28.

A situation of confusion which involved the world lightweight title was settled when Ike Williams, Trenton, N.J., knocked out Bob Montgomery, Philadelphia, in round 6 of a scheduled 15-round bout at Philadelphia, Aug. 4. Until this bout Montgomery was recognized by the State Athletic commissions of New York and Pennsylvania as world lightweight champion, and Williams was recognized as title-holder by the National Boxing association, having jurisdiction in more than 30 other boxing localities. A crowd of 30,500 saw the match, paying receipts of $178,301.

Willie Pep, Hartford, Conn., survived an aeroplane accident in which he sustained a broken leg and multiple bruises, to come back from this harrowing experience and defend his featherweight title by knocking out Jock Leslie, Flint, Mich., in the 12th round of a bout held at Flint, Aug. 22. It was Pep's only title match of the year.

Manuel Ortiz, El Centro, Calif., Mexican, lost his world bantamweight title to Harold Dade, Los Angeles, Calif., in Los Angeles, on a 15-round decision, Jan. 7, but came back Ma
12 to regain the title from Dade on decision in a return bo
He twice defended the championship, winning a 15-round de
sion over David Kuikong Young, Honolulu Chinese, April
and beating Tirso Del Rosario, Filipino, on a 15-round decisi
at Manila, P.I., Dec. 20.

When Jackie Paterson, Scotland, 3 times failed to make t
required 112-pound weight as world flyweight champion for
title match against Dado Marino, Hawaii, at Glasgow, Sc
land, causing three postponements of the bout, the British Boa
of Boxing Control withdrew championship recognition from hi
However, Paterson carried his case to court, won a verdict, a
the B.B.B.C. rescinded its action, giving Paterson until Mar
31, 1948, to defend his title or surrender it, under B.B.B.C. rul

Amateur boxing was conducted on a scale that compared wi
previous years. A heavy entry list forced the extension of t
Amateur Athletic union's national championship tourname
over a five-day period. Syracuse university won the Easte
Intercollegiate championship tournament and in the Nation
Collegiate Athletic association championships Gerald Auclair
Syracuse won the 125-pound class title. The University of W
consin captured two individual championships in this tourn
ment when Cliff Lutz won in the 145-pound division and Jo
Lendenski was victorious in the 165-pound class. (J. P. D.)

## Boy Scouts.

The theme for 1947 for the Boy Scouts
America was "Scouts of the world building f
tomorrow." Scout activities were centred around this them
Scouts helped their brother scouters abroad through the Wor
Friendship fund to which they contributed. The money w
used to purchase camping equipment, books and other scouti
necessities. Through the "shirts off our backs" program t
scouts gave used uniforms and good, worn scouting equipme
which was sent to scouts overseas.

The 37th annual meeting of the National council was he
in New York May 27–28. More than 1,000 delegates ar
friends of scouting took part.

An outstanding event was the 6th World Jamboree, calle
"The Jamboree of Peace" held at Moisson, France, in Augus
The Boy Scouts of America delegation consisted of 1,100 bo
and leaders from all over the United States. The United Stat
government made available a government transport ship to tak
the boys to and from the jamboree. All expenses were defraye
by the Boy Scouts of America.

This was followed by the 11th International National Scou
Conference of Scout Leaders, including representatives fro
all over the world.

The 8th National Training Conference of Professional Scou
Leaders took place in Bloomington, Ind., in September whe

a five-year program was developed. In the following months a Scout Round-Up was held giving new boys opportunity to join scouting units. The scout program includes cub scout activity for boys 9-11 years old, emphasizing skills and fun around the home under the leadership of "Den Mothers" and "Den Chiefs" (older scouts). Boy scouts are 12 years and older organized in scout troops and other units. They camped in great numbers during 1947, because scouting is an outdoor program emphasizing woodcraft and outdoor skills. The third branch of the scout program is for young men of 15 years and older and features air scouting, explorer scouting and sea scouting. The largest gain in any branch of scouting during the year was made in senior scouting.

As usual, scouts co-operated with the national, state and local governments in many service projects. These included collections of all kinds of materials, distribution of pamphlets and other material, and helping the police in safety work, fire prevention and conservation projects.

There was an increase in membership over the previous year. Nov. 30 figures showed the following:

Total boys 1,534,164
Total leaders 542,141
Grand total membership 2,076,305
Total units 66,743. (L. W. BA.)

**Great Britain and Europe.**—International brotherhood was the keynote of scouting activities in 1947. In August 30,000 scouts from 70 countries camped together for two weeks at the 6th World Jamboree held at Moisson, France. The success of this gathering proved that the organization had emerged from the war stronger and more vital than ever. International friendship was also promoted by correspondence and exchange visits under the "linking-up scheme." About 170 British groups camped with their "partner" groups in various European countries, and many groups from Europe camped in Britain.

In Great Britain the fine summer ensured an extremely successful camping season. A party of 20 senior scouts went to Newfoundland in September with the ninth expedition of the Public Schools Exploring society, to explore an area of unmapped and trackless country.

A memorial to Lord Baden-Powell, the founder of the scout movement, was unveiled in Westminster abbey by the duke of Gloucester on St. George's day, April 23. (E. G. W. W.)

BOY SCOUTS of AMERICA CONTINGENT
SIXTH WORLD JAMBOREE • MOISSON . FRANCE
AUGUST 9TH – 21ST 1947

U.S. BOY SCOUTS ready to sail for France where 30,000 scouts from 70 nations assembled for the 6th World Jamboree at Moisson in Aug. 1947

**Bradley, Omar Nelson** (1893– ), U.S. army officer, was born in Clark, Mo., on Feb. 12. He was graduated from the U.S. Military academy in 1915 and later from the Infantry school, the Command and General Staff school and the Army War college. Early in 1941 he was commandant of the Infantry school, and in Feb. 1943 he was sent to North Africa where he assumed command of the 2nd corps, which he led to victory at Tunis and Bizerte. In Jan. 1944 Gen. Dwight D. Eisenhower disclosed that Bradley had been made commanding general of the U.S. ground forces for the invasion of Europe. When the invasion started, June 6, Bradley headed the U.S. 12th army group. On Aug. 30 it was disclosed that General Bradley had been given equal status with Gen. Bernard L. Montgomery. The U.S. armies under Bradley's command hammered their way into the Siegfried line by the winter of 1944. After recovering from the nazi counterblow in the Ardennes forest, Bradley's forces overran a large part of the reich by the close of the war in Europe. He was made a full general (temporary) on March 13, 1945, and was named (June 7, 1945) by Pres. Harry S. Truman as administrator of veterans' affairs. On Nov. 21, 1947, the president announced a new promotion for Bradley—that of army chief of staff—to become effective when General Eisenhower left the army to become president of Columbia university.

**Brazil.** The second largest nation of the western hemisphere and the most populous Latin country in the world; language: Portuguese; religion: predominantly Roman Catholic, with about 1,000,000 Protestants (including their families) of various denominations; capital: Rio de Janeiro (est. pop. 1947, 2,052,672); president: Gen. Eurico Gaspar Dutra.

Brazil's area of 3,286,170 sq.mi. is second only to that of Canada in the western hemisphere. The population (1940 census: 41,570,341) was officially estimated at 48,000,000 as of Dec. 31, 1947; 13.2% was classified as urban, and 77% as rural. The capital, Rio de Janeiro (coterminous with the federal district), is the largest city in Brazil and the second largest in Latin America.

At the time of the latest census (1940) there were 1,285,000

*Area and Population of States and Territories of Brazil, 1947*
(Latest estimates available as published by the Instituto Brasileiro de Geografia e Estatística)

| State or territory | Area (sq. mi.) | Pop. (Dec. 31, 1947) | Capital |
|---|---|---|---|
| North | | | |
| Acre (terr.) | 57,153 | 92,814 | Rio Branco |
| Amazonas | 595,474 | 492,908 | Manaus |
| Rio Branco (terr.) | 97,438 | 14,010 | Boa Vista |
| Pará | 470,752 | 1,074,062 | Belém |
| Amapá (terr.) | 55,489 | 25,082 | Macapá |
| Guaporé (terr.) | 96,986 | 24,696 | Pôrto Velho |
| Northeast | | | |
| Maranhão | 133,674 | 1,437,185 | São Luís |
| Piauí | 94,819 | 951,322 | Teresina |
| Ceará | 57,371 | 2,433,027 | Fortaleza |
| Rio Grande do Norte | 20,236 | 893,630 | Natal |
| Paraíba | 41,591 | 1,654,901 | João Pessoa |
| Pernambuco | 38,315 | 3,126,660 | Recife |
| Alagoas | 11,031 | 1,106,888 | Maceió |
| Fernando de Noronha (terr.) | 7 | 1,251 | ........... |
| East | | | |
| Sergipe | 8,321 | 631,025 | Aracajú |
| Baía (Bahia) | 204,393 | 4,558,933 | Salvador |
| Minas Gerais | 228,469 | 7,838,179 | Belo Horizonte |
| (Serra dos Aimorés)* | ... | 77,951 | ........... |
| Espírito Santo | 17,688 | 872,790 | Vitória |
| Rio de Janeiro (state) | 16,372 | 2,150,080 | Niterói |
| Distrito Federal | 451 | 2,052,672 | Rio de Janeiro |
| South | | | |
| São Paulo | 95,459 | 8,365,359 | São Paulo |
| Paraná | 82,741 | 1,438,473 | Curitiba |
| Santa Catarina | 31,118 | 1,371,061 | Florianópolis |
| Rio Grande do Sul | 110,150 | 3,863,799 | Pôrto Alegre |
| Central-West | | | |
| Goiaz | 225,266 | 961,577 | Goiânia |
| Mato Grosso | 485,405 | 489,665 | Cuiabá |

*This area is in dispute between the states of Minas Gerais and Espírito Santo.

foreign-born residents: 354,000 Portuguese, 285,000 Italians, 148,000 Spaniards, 141,000 Japanese, 71,000 Germans, 41,000 Polish and 245,000 citizens of other countries. Of the total Brazilian population, 26,200,000 declared themselves of the white race, 8,800,000 mulattoes, 6,000,000 Negroes, 250,000 of the yellow race.

**Political History.**—During 1947 a tendency was observed among the political parties to crack up along the old state political lines. At the end of the year this disintegration had gone so far as to leave President Dutra without the backing of a clear-cut majority in the congress. Portions of the Social Democratic party, the majority party which elected him, had veered off so much as to favour measures in direct contradiction to the general policies of the party. In some states (Pernambuco and São Paulo, for instance) the Social Democrats had gone so far as to ally themselves with the communists to secure the control of local government.

The Communist party, reorganized under the electoral regulations of 1945, was declared illegal by the upper electoral tribunal in May 1947. At the end of the year congress had not yet decided, however, whether the communist representatives and senators were entitled to continue to hold their seats. This situation brought about much unrest and a wave of strikes, street incidents and the mobbing of communist newspapers and propaganda centres in several cities. State elections for governors and legislators, held at various times during the year, were marked by violence although the communists apparently showed less strength than had been anticipated.

In the state of Pernambuco—important because of the character of the population and the strategic location of its territory, in the northeastern bump—a coalition of Social Democrats and communists controlled the state legislature. Since the results of the elections for state governor remained uncertain, the president of the legislature, backed by the Social Democrats and the communists, governed the state *ad interim*. On the other hand, in the neighbouring state of Sergipe the governor, backed by the state branch of the Social Democratic party, ruled as a dictator and suppressed all communist activities.

Convinced that the nation was fast approaching a crucial moment in its political and economic life, President Dutra and other political leaders endeavoured to secure a coalition of the Social Democratic party and the National Democratic unio the opposition party, as against the communists. By the end the year these efforts seemed to have been crowned with su cess. On Dec. 5, the publication of *Tribuna Popular,* con munist organ of Rio de Janeiro, was suspended for 30 days an the nation awaited with anxiety the decision as to the legality the communist representatives and senators.

COMMUNIST PARTY building at Rio de Janeiro being taken over by Brazilian police following a government order outlawing the party on May 7, 1947. Estimated Communist membership exceeded 180,000

Internationally, Brazil continued to enjoy increasing prestig The Brazilian representative in the United Nations assembl Dr. Oswaldo Aranha, was elected president of both the speci and the regular sessions of the assembly.

The much-postponed Inter-American Conference for th Maintenance of Continental Peace and Security, decided upo by the American nations at Chapultepec (1945), finally met Quitandinha hotel, in Petrópolis, near Rio de Janeiro, from Au 15 to Sept. 2. After some wrangling and one or two snarls, th conference adopted a treaty on continental defense which wa generally hailed as a step forward in hemispheric co-operatio for peace. (*See* INTER-AMERICAN DEFENSE CONFERENCE.)

At the invitation of the Brazilian government, Pres. Harry Truman, accompanied by Mrs. Truman and their daughter, Ma garet, visited Rio de Janeiro (Sept. 1–7). Truman addresse the closing session of the Inter-American conference. He wa generally received with great cordiality by the authorities an the people of Brazil. On Sept. 5 the Brazilian congress hor oured him with a special joint session.

On Oct. 2 Brazil broke off diplomatic relations with Russi This came in the wake of a series of incidents, climaxed b editorial comments of *Izvestia* on President Dutra, considere insulting by the government and the people of Brazil. A deman for an apology went unanswered.

The Communist party in Brazil, claiming a membership about 130,000, apparently was going underground.

Although the relations between Brazil and the United Stat continued most cordial, at the end of the year a certain amou of dissatisfaction was guardedly expressed in some quarters b cause of alleged unwillingness on the part of the U.S. gover ment to assist in Brazil's industrialization plans.

**Education.**—There were in 1945, 44,794 primary schools with 95,3 teachers and 3,548,409 students. Other schools, according to availab information (1943) were: 1,183 secondary schools with 14,280 teache and 213,520 students; 3,076 professional schools and universities, wit 19,267 teachers and 255,368 students.

There were seven official universities, all of them state institutio except the Universidade do Brasil (Rio de Janeiro) which was maintaine by the federal government. There were also three private universiti maintained by the Catholic Church, at Rio de Janeiro, São Paulo an Pôrto Alegre. The Catholic university of Rio de Janeiro was raised pontifical status in December.

**Finance.**—The cruzeiro, the monetary unit of Brazil, divided into 10 centavos (cents), sold in the free market at about 22.50 per U.S. dolla

The federal government's budget for the year, estimating expenditur at Cr. $12,597,686,000 and revenues at Cr. $12,003,650,000, anticipate a deficit of Cr. $594,036,000. Later, however, the total of authorize expenditures was increased to Cr. $14,360,111,000 which left a defici of Cr. $2,356,461,000 for the year. Alarmed at the magnitude of th deficit, the government undertook to decrease all expenditures. By th end of September the actual deficit was estimated at about Cr. $12 889,000.

Despite strong pressure from some quarters, which recommended tha the budgetary deficit, or part of it, be wiped out by a new increase i money circulation, the government steadily pursued its policy of sys tematic reduction of the currency in circulation as a means to comba inflation. Money in circulation as of Oct. 31 amounted to Cr. $20,297 661,976, a decrease of Cr. $191,750,305 as compared with the amoun in circulation in January (Cr. $20,481,228,492).

The fight against inflation seemed to be the basis of the government' economic program. The principal causes of inflation were the govern ment's annual deficits, the government financing of exports and the pre vailing speculation in values. The first cause tended to disappear wit the approval by congress, for 1948, of a budget estimating revenues a Cr. $14,597,320,000 and expenditures at Cr. $14,596,041,044, with small, but significant, surplus of Cr. $1,278,956.

As to the second cause, it was intimately tied up with the general worl scarcity of dollar exchange. The government faced the problem by re stricting both exports and imports.

The third cause continued uncontrolled because of the apparent diff culty in enforcing price control measures. The prices of some staples ha increased two to four times the prices prevailing in 1941.

The bank situation continued uncertain. The government's propose bank reform was still being discussed in congress at the end of the year. Of 2,111 banking institutions existing at the beginning of the year, 36 were classified as foreign. Most of the banks were in São Paulo and Rio de Janeiro. At the beginning of the year the foreign debt was estimated at £101,126,010 and $207,730,795 U.S.

**Trade and Communications.**—During the first nine months of the year, Brazil exported merchandise valued at Cr. $15,554,721,000, which was Cr. $2,366,222 more than the total for the same period in 1946. The principal items were: coffee (Cr. $5,437,862,000), cotton (Cr. $2,499,965,000), cocoa (Cr. $814,690,000), sugar (Cr. $165,800,000), rice (Cr. $493,847,000) and pine lumber (Cr. $647,790,000).

Although still the principal export item, coffee contributed less to the total, in volume, than in the previous year. During the first six months of 1947 a total of 6,550,393 bags of coffee (132 lb. each), valued at Cr. $3,488,695 were exported, whereas in 1946 the total was 7,650,785 bags valued at Cr. $2,737,648.

The imports increased from Cr. $9,048,349,000 during the first nine months of 1946 to Cr. $16,973,015,000 during equivalent period in 1947. This was caused by a larger number of automobiles, and parts, refrigerators, radios, phonographs, electric apparatus and similar articles imported during the period.

The unfavourable trade balance of Cr. $1,418,494,000 in the first nine months of 1947 contrasted with the favourable balance of Cr. $4,140,150,000 in the same period of 1946. This was because of the lack of imports of many items during the war years and had been anticipated. On the other hand, Brazilian exports to England and other countries had not increased as expected because of lack of dollar exchange. The government, confronted with the alternative of assisting exporters with the purchase of their credits in national currency (which would increase inflation) and the curtailment of exports, preferred the latter.

The government announced plans to re-equip and reorganize the merchant marine (for which 38 new units were purchased) and the railroads (requiring an estimated purchase of 20,000 cargo and passenger cars and at least 1,000 locomotives, besides 3,000 railroad cars already ordered in Brazil).

There were about 22,000 mi. of railroad track in operation and about 38,000 mi. of surface roads and 124,000 mi. of common roads in 1945. It was estimated that the country had about 150,000 passenger automobiles and trucks in 1944.

In 1945, 12 aviation companies operated about 70,000 mi. of routes. Their planes transported about 290,000 passengers, 2,500,000 lb. of baggage, 400,000 lb. of mails and 3,250,000 lb. of freight.

**Agriculture.**—Total output for 1946 was about the same as for 1945. The most important agricultural products in 1946 were: rice (46,198,634 bags of 132 lb. each), cotton (352,752 metric tons), sugar (28,300,000 metric tons), beans (17,000,000 bags of 132 lb. each), tobacco (118,500 metric tons), wheat (248,058 metric tons), cocoa (138,000 metric tons) and coffee (15,335,675 bags of 132 lb. each). The 1946 coffee production was valued at Cr. $5,350,029,000, whereas the previous year's production (13,915,265 bags) was valued at Cr. $3,717,173,000.

Crops were considerably affected by pests in 1947. Clouds of locusts, flying from Argentina and Uruguay, swept over the rich southern plantations destroying everything in their path. In the state of São Paulo many coffee plantations were devastated by the disease known as "broca." It was estimated that the next year's crop might fall as much as 50% on that account.

Total value of animal products in 1945 was estimated at Cr. $6,906,459,000. The livestock production continued high, although a scarcity of meats was observed in Rio de Janeiro and most other important cities. The hog plague, starting in the south, spread until it covered the whole country, killing hundreds of thousands of animals. The congress appropriated about $500,000 to combat this disease.

**Manufacturing.**—The value of industrial production in 1945 was estimated at Cr. $33,121,176,000, showing a substantial increase over the total of Cr. $27,631,386,000 for 1944. There were 576,935 industrial workers in 1945 (550,804 in 1944).

Textile production decreased from 24,246 metric tons in 1945 to 14,103 tons in 1946. During the first six months of 1947, the textile production was 9,994 metric tons.

The iron and steel production was as follows in 1946 (in metric tons): pig iron 365,345, steel ingots 342,643 and slabs 311,515.

Rayon, an industry established in 1924, produced a total of 21,605,080 lb. of fibres in 1946. Other important industrial products were: furniture, food products, shoes, electric materials, glass and rubber products.

**Mineral Resources.**—In 1946 the total mineral output of the nation was estimated at Cr. $2,285,936,000, including iron ore, manganese, coal, oil and other important minerals such as beryllium, watch jewels, industrial diamonds, mica, monazite, quartz, tantalite, tungsten, zircon and rutile.

Geologists had estimated that about 900,000 sq.mi. of Brazilian territory were potentially oil-producing. Of this area, only about 190,000 sq.mi. had been commercially explored. There were 45 producing wells with a capacity of 4,779 bbl. a day and 14 gas-producing units. Crude oil production in 1946 was 66,889 bbl. (12,441 bbl. less than in 1945).

Search continued in the Amazon basin and in the state of Bahia. In Nov. 1947 it was announced in New York city that the Brazilian government had signed a contract with a United States firm to erect oil-refining facilities in Belem, near the mouth of the Amazon, with a daily capacity of more than 100,000 gal. The work was to be finished in 18 months. (*See* also ARGENTINA.)

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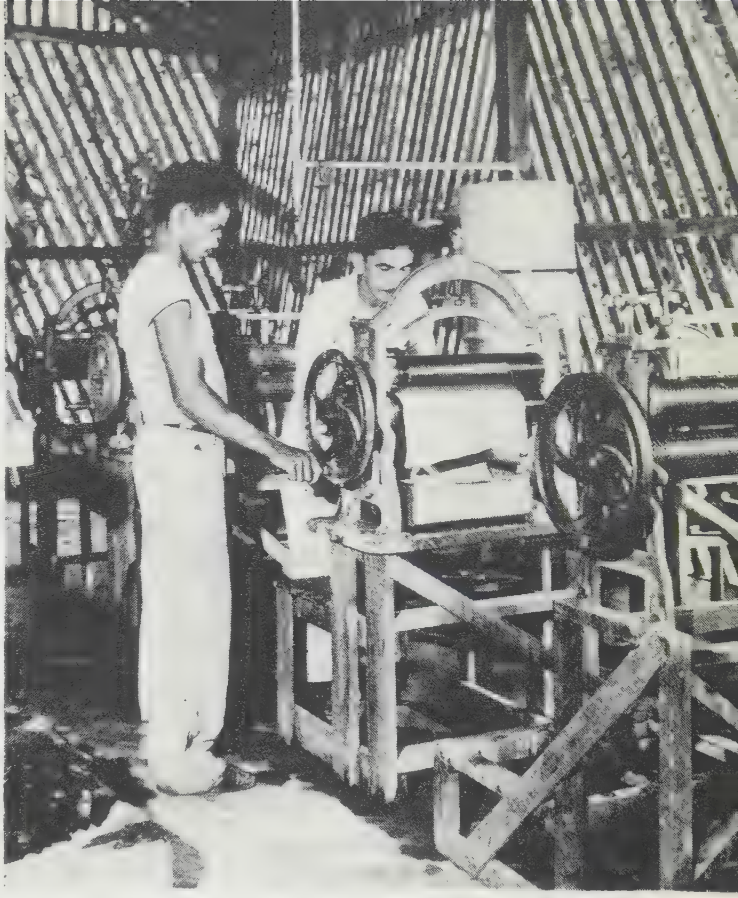
(R. D'E.)

## Bread and Bakery Products.



RUBBER SHEETING MACHINERY at the Instituto Agronomico do Norte in Belém (Para), a Brazilian institute setting standards for farm and forestry products, a service urgently needed in 1947 for purposes of international trade

The attention of leading bakers and millers during 1947 was directed to a consideration of the problems presented by a report of Sir Edward Mellanby, published in the *British Medical Journal* of Dec. 14, 1946. This report showed that the feeding of large amounts of so-called bleached flour produced signs of nervous disorder in dogs. Later studies in England and in the U.S. confirmed the original observations and extended them.

By the end of 1947 it had been established that: (1) The deleterious effects are produced only when large amounts of flour that have been treated with nitrogen trichloride gas are fed, and that none of the other accepted agents for bleaching or artificially aging flour produces harmful effects. (2) The nitrogen trichloride acts on the proteins of the flour. (3) In addition to the effect on dogs, somewhat similar effects can be produced with heavily treated flour fed in large quantities to cats, rabbits, ferrets, monkeys and rats, but not to guinea pigs, hamsters or chickens; and (4) No harmful effects have been observed in human beings who have consumed large amounts of bread made from flour treated with nitrogen trichloride under conditions which would unfailingly produce symptoms in dogs.

The attitude of scientific bodies who studied the evidence, both in the U.S. and in Great Britain, was that the facts do not demand precipitous action. The Food and Nutrition board of the National Research council (Washington, D.C.) recommended to the Food and Drug administration that the use of nitrogen trichloride in the treatment of flour should be reduced to a minimum, and eliminated altogether wherever possible, and that suitable alternative methods of improving the baking qualities of many varieties of wheat should be sought. The organized baking industry in the U.S. at once took action to approve the recommendations of the Food and Nutrition board and urged the milling industry to take steps to bring about the complete elimination of the nitrogen trichloride process.

Like other methods of improving the baking performance of flour, the nitrogen trichloride process long was considered meritorious and harmless. The new developments illustrate vividly the need for the most careful scrutiny of methods of the food-processing industry which involve the addition of foreign substances to foods. The baking industry, in particular, has a responsibility to maintain the integrity of bread by demanding that all ingredients of the loaf must at all times be nutritious and wholesome.

Some experimental corroboration of the conclusion of the U.S. bureau of human nutrition and home economics, that the U. S. diet in general was considerably improved during World War II with respect to thiamin, riboflavin, niacin and iron because of the bread enrichment program, was provided in the report of N. B. Guerrant and O. B. Fardig of The Pennsylvania State college. These investigators showed in experimental work with growing animals, that dark breads and so-called milk breads, as produced commercially in the U.S., are inferior to both whole wheat and enriched breads in thiamin and riboflavin.

With the enactment of compulsory enrichment laws in Oklahoma and Kansas, there were in 1947 21 states plus the territories of Hawaii and Puerto Rico, which required the enrichment of white bread and flour. This movement to establish high nutritional standards for bread, also gained attention in other countries.

Leading bakers estimated that in the U.S. the gross sales of bakery products in 1947 reached an all-time high of nearly $3,000,000,000. (*See* also FLOUR.)

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**Bretton Woods:** *see* INTERNATIONAL MONETARY FUND.

## Brewing and Beer.

On March 1, 1947, all restrictio on the use in the United States the principal brewing grains—malt, corn and rice—were lifte and brewers found themselves, for the first time after Wor War II, in position to produce enough beer and ale to meet constantly rising demand.

Concurrently with the rise in production, sales of beer ar ale began to climb on a scale unprecedented in U.S. histor From a decrease of 1,179,000 bbl. for the first three months 1947 as compared with the corresponding period for 1946, sal rose until they exceeded the 1946 figure by 8,532,133 bbl. the end of the first 10 months, reaching a total of 74,552,5 bbl. and indicating a new all-time high of approximately 9 000,000 bbl. for the year.

Brewers had to revise their plans for unlimited productio however, when it developed, in September, that the food situ tion in Europe was becoming increasingly serious and that U. industries and individuals would have to make sacrifices b voluntarily cutting their grain usage and thus make more grai available for export to the needy countries. President Harry Truman appointed a Citizens Food committee and the brewin industry was requested to work with this group in evolving conservation program that would free substantial quantities edible grains for export without appreciably affecting industr production, employment or quality of the product.

The United States Brewers foundation, whose members pro duce more than 90% of the nation's beer and ale, immediatel created a grain committee to work with the government autho ities and presidential appointees in Washington. The immed ate result of the Washington meetings was acceptance of th foundation's voluntary program of grain conservation, extende over a 90-day period, calling for the following provisions:

(1) Reduction in corn usage by a total of 3,000,000 bu.

(2) Elimination of wheat, table grades of rice and sorghu grains or their products, as brewing ingredients. Wheat held b brewers or under contract was released for purchase to suc buyers as were indicated by government authorities.

(3) Elimination of the use of feed barley, the brewers restric ing themselves to malting barley, which is not normally used fo feed purposes because it brings a higher price to the farmer.

FRENCH WHEAT RESERVES being turned in by rural farmers complying with a government appeal during the bread shortage which became acute in France in April 1947. Daily rations were reduced to 250 grams on April 24

(4) Increasing recovery of such by-products as high-protein residual grains, used extensively for dairy cattle feeding, and yeast for the feeding of poultry. These by-products, recovered in the brewing process, reduce the brewing industry's net annual consumption of all grains to less than 50,000,000 bu., according to a statement by Secretary of Agriculture Clinton Anderson.

Following promulgation of the grain conservation program among all brewers, an Industry Advisory committee was named to work with the Citizens Food committee, later changed to the Cabinet Food committee, consisting of the secretaries of state, agriculture and commerce. Although the industry participation in the program was on a voluntary basis, brewers complying represented approximately 98% of the nation's production.

**Beer for Military Needs.**—A contribution to the increased beer supply for domestic needs was the lifting of the government order, effective March 1, 1947, which required brewers to set aside 3% of their grains for the production of beer for the use of the armed forces. The original order, during the war, called for earmarking 15% of the brewers' production for military use. The set-aside had been ordered after it had been established by service authorities that beer had been a valuable aid to morale and substantially contributed to the army's sobriety. With the gradual return of a large number of the military to civilian life, this set-aside was reduced to 5% on Dec. 1, 1945, to 4% on June 13, 1946, and 3% on Sept. 1, 1946. Another reason for the reduction in military requirements abroad was that some of the beer required for overseas was being supplied by breweries in occupied areas, requisitioned and manned by U.S. troops and civilian personnel.

**By-Products.**—The brewing process extracts only a portion of the nutrients in the raw grains. The brewing industry each year returns about 35% of the original grains to the farms in the form of protein-rich feed concentrate. These by-products, known as brewers' grains, contain about 75% of the feed value of the original grains.

The other important by-product is brewers' yeast, the richest known natural source of vitamins of the B complex, containing between 40% and 50% of high-grade protein. This was supplied in increasing quantity during the years 1942–47 both as a human nutrient and as a protein and vitamin supplementary feed for livestock and poultry to provide a balanced ration. Debittered yeast was used in army rations such as bread and crackers and in the enrichment of such food items as noodles and dehydrated soup. In addition to its use in baking products, it is also added in small quantities to candy bars, meat loaves, gravies, peanut butter, syrups and casserole dishes.

**Moderation and Law Enforcement.**—Close co-operation between brewers, wholesalers and retailers continued to be an integral part of the brewing industry's self-regulation program, which had its origin in 1938. This program is designed to promote moderation and sobriety and to maintain wholesome conditions wherever malt beverages are sold under licence. Trained investigators are utilized to observe the conduct of retail beer outlets and to report to law-enforcement authorities those licensees who fail to comply with all provisions of state regulations. Failure to correct conditions after warning usually leads to suspension or revocation of licence or, in cases that cannot be handled otherwise, shutoff of beer by brewers.

On the basis of approximately 250,000 inspections of retail beer establishments after the program was put into effect, more than 95% of the licensed premises were found to be operated in an orderly and wholesome manner.

**Sales Records.**—Following are the sales records in U.S. barrels (31 gal.) by fiscal years ending June 30: 1933 (85 days), 6,277,728; 1934, 32,266,039; 1935, 42,228,831; 1936, 48,759,840; 1937, 55,391,960; 1938, 53,926,018; 1939, 51,816,874; 1940, 53,014,230; 1941, 52,799,181; 1942, 60,856,219; 1943, 68,636,434; 1944, 76,969,764; 1945, 79,590,598; 1946, 81,286,821; 1947 (official but not audited). 84,353,412.

**Taxes.**—Federal excise and special taxes on beer for the fiscal year 1947 totalled $665,081,497, bringing the cumulative total after relegalization in 1933 to $5,438,690,682. State and local taxes and licence fees in 1947 were estimated at $180,000,000, raising the cumulative figure for that revenue to about $1,875,000,000.

From April 7, 1933, the date of relegalization, the combined public revenue from beer approximated $7,313,000,000. Beer was in 1947 taxed at $8 per barrel, contrasted with the federal tax rate of $1 per barrel from 1902 to 1914. There were no state taxes before prohibition. (*See* also LIQUORS, ALCOHOLIC.) (E. V. LH.)

**Bridge, Contract:** *see* CONTRACT BRIDGE.

## Bridges.

The world's longest spans of the various types built up to 1948 are listed in the following table.

*World's Longest Spans by Type of Bridge*

| Type | Bridge | Location | Year Completed | Span |
|---|---|---|---|---|
| Cable Suspension | Golden Gate | San Francisco | 1937 | 4,200 ft. |
| Transporter Bridge | †Sky Ride | Chicago | 1933 | 1,850 |
| Cantilever | *Quebec | Canada | 1917 | 1,800 |
| Steel Arch | Bayonne | New York | 1931 | 1,652 |
| Eyebar Suspension | *Florianopolis | Brazil | 1926 | 1,114 |
| Concrete Arch | Sando | Sweden | 1943 | 866 |
| Continuous Truss | Dubuque | Mississippi river | 1942 | 845 |
| Simple Truss | *Metropolis | Ohio river | 1917 | 720 |
| Continuous Girder | Cologne | Rhine river | 1948 | 605 |
| Vertical Lift | *Cape Cod Canal | Massachusetts | 1935 | 544 |
| Wichert Truss | Homestead | Pittsburgh | 1937 | 533½ |
| Swing Span | *Fort Madison | Mississippi river | 1927 | 525 |
| Tubular Girder | *Britannia | Menai straits | 1850 | 460 |
| Timber Span | †Wettingen | Switzerland | 1758 | 390 |
| Bascule | *Sault Ste. Marie | Michigan | 1914 | 336 |
| Masonry Arch | Plauen | Saxony | 1905 | 295 |
| Single Leaf Bascule | *16th Street | Chicago | 1919 | 260 |
| Concrete Girder | Villeneuve | Seine river | 1939 | 256 |

*Railroad bridge. †Not standing.

**United States.**—The Bronx-Whitestone bridge in New York city was modified and stiffened in 1947 at a cost of $1,300,000 by the addition of 14-foot high trusses on top of the original 11-ft. stiffening girders. Aerodynamic oscillations of 18 in. were reduced to 9 in.

Immediate construction of a second vehicular crossing of San Francisco bay, at a cost of $134,468,000, was recommended in 1947 by a joint board of army and navy officers. The proposed plan was a combination low-level bridge, under-water tube and filled causeway, a total length of more than six miles from San Francisco to the Alameda shore. An alternate crossing, recommended by the California Toll Bridge authority, about 200 feet north of the Transbay bridge and similar to it in design, was estimated to cost $105,000,000. The California Toll Bridge authority in Nov. 1947 approved both for construction, at a total cost of $239,468,000.

Proposed construction of the Delaware River bridge (suspension type) at Wilmington, Del., was approved by the secretary of war in 1947.

The U.S. army engineers in 1947 approved construction of the proposed $30,000,000 bridge over Chesapeake bay to connect Baltimore with the eastern shore of Maryland.

Construction of the seven main piers of the new Mississippi river bridge at Memphis, Tenn., was completed in May 1947. The design of the main cantilever structure comprises spans of 433, 621, 621, 790 and 359 ft., with 2 approach truss spans of 435 ft.

A new toll vehicular bridge across the Mississippi river between East St. Louis, Ill., and St. Louis, Mo., was begun in 1947 at a contract cost of $6,490,000. The new structure is of reinforced concrete and steel cantilever type, 7,700 ft. long, and carrying 5 highway lanes and 2 sidewalks. The main span is approximately 1,000 feet, flanked by 2 500-ft. spans.

A $6,000,000 bond issue was approved in 1946 for the construction of a state-owned toll bridge over the Connecticut river between Old Lyme and Saybrook, Conn.

The U.S. navy department approved construction of a $6,000,000 low-level highway bridge over the York river at Yorktown, Va.

Preliminary work of borings, surveys and design studies was started in 1947 on the proposed $27,000,000 toll bridge over the Mystic river between Chelsea, Mass. and the Charlestown section of Boston.

The Chain-of-Rocks canal bridge near St. Louis, to carry a relocation of U.S. highway 66 over the proposed Chain-of-Rocks canal, was under construction 1946–47 at a contract cost of $1,585,000.

The historic Eads bridge (completed 1874) at St. Louis, Mo., which was the first bridge across the Mississippi river, was modernized in 1946–47 at a cost of $300,000.

The $1,153,000 foundation contract for the new high-level bridge across the Delaware-Chesapeake canal at Chesapeake City, Md., was completed in 1947. The highway structure, 3,954 ft. long, was designed to cross the canal with a steel tied-arch of 540-ft. span providing 140 ft. clear height above the water.

A new $2,000,000 railroad bridge one-half mi. long was completed in 1947 for the Baltimore and Ohio railroad at Point Pleasant, W.Va. With a main truss span of 480 feet, the bridge crosses the Kanawha river near its junction with the Ohio river and replaces a 16-year-old structure at the site.

A steel bowstring truss bridge of novel streamlined design was completed in 1947 on Oregon's highway across the Santiam river between Salem and Albany, with a 240-ft. centre span and side spans of 180 ft.

The Twelfth Street bridge over the Kaw river in Kansas City, Kan., was partially destroyed when 1945 floodwaters undermined and overturned one of its piers. Reconstruction of the bridge in 1946–47, at a cost of $330,000, included replacing the overturned pier, rebuilding a second river pier and rebuilding of one 200-ft. span and 140-ft. of the centre span of a 3-span 600-ft. long deck cantilever.

Construction of the foundations and the nine main piers of the South Capitol street crossing over the Anacostia river in Washington, D.C., was completed early in 1947. Bids for the superstructure were double the engineer's estimate of $1,000,000 and were rejected. The design was of plate-girder construction, with the main crossing 854 ft. long, including a 386-ft. swing span at the main channel.

Using 24 steel girder spans up to 161 ft. long, a $2,000,000 highway bridge, 2,693 ft. long, 66 ft. wide and 70 ft. high, was completed in 1947 across the Feather river at Marysville, Calif.

An unusual design was represented by the semipermanent railway-highway bridge under construction in 1947 at the Garrison damsite in North Dakota. Carrying an all-steel deck on steel girders, this 1,350-ft. structure was supported on tubular steel piles, 24 in. in diameter and 100 ft. long, each driven to a 150-ton resistance. For maximum future salvage of the steel in the spans, all field connections except main girder splices were bolted with automatic locking nuts instead of being riveted.

The $1,500,000 Piney Bluff bridge, spanning the Altamaha river on U.S. highway 1 between Baxley and Lyons, Ga., constructed in 1947, is 13,115 ft. long and consists of steel girder spans on concrete piers and a series of concrete girder spans on concrete pile bents.

The $5,000,000 bridge connecting Terminal Island and Long Beach, Calif., a U.S. navy project under construction in 1947, included a 240-ft. vertical lift span of record width (two 35-ft. roadways) and record height of lift (from 50 to 175 ft. above water). Construction of the freeway providing access to the bridge, at an additional cost of $9,000,000, was under the supervision of the state highway department.

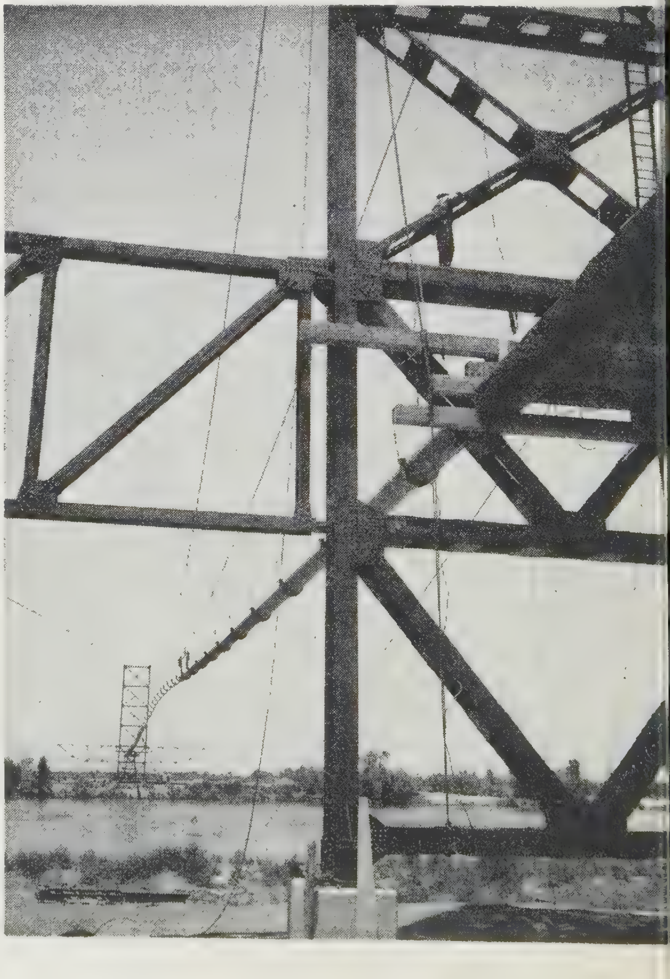
Plans were completed in 1946 for the construction of a 368-ft. span vertical lift bridge at Sault Ste. Marie to replace an old swing span of the International Railway bridge built in 1888. Total cost of the project, including removal of the swing span and Bridge Island, was estimated to exceed $1,000,000.

**Germany.**—Of the 55 pre-World War II bridges that crossed the Rhine (22 railroad bridges, 22 highway bridges and 11 po toon highway bridges), 9 had been replaced by temporary mi tary bridges and 24 by semipermanent reconstruction in 194 The railroad crossing at Brisach was rebuilt for highway traffi The highway bridge at Strasbourg was replaced by a laminat timber bridge of modernistic design. The railroad bridge Strasbourg was replaced with shorter plate girder spans on ten porary piers. The highway and railway bridges at Maxau we each replaced by five truss spans on a single set of tempora piers. At the highway and railway bridge at Spire, only o span was raised and saved. At Mannheim the railway brid was replaced and the highway bridge was scheduled for ear rebuilding. The famous highway bridge at Worms was n scheduled for rebuilding. The railway bridge at this city, hov ever, was replaced with five spans. The Coblenz-Horcheim rai way bridge was back in service on the original piers, and th Coblenz-Pfaffendorf highway bridge had also been rebuilt.

The Cologne-South railway bridge was back in service in 194 Also back in service was the Dusseldorf-Hamm railway bridg with two original arches and two German military spans. Th Dusseldorf-Oberkassel highway bridge was replaced by 4 300-f spans. The Baerl railway bridge lost only the end span and wa back in service in 1947. The 611-ft. centre span was saved fro falling by a safety pier placed under its mid-point by the Ge mans as an air-raid precaution.

The SKR trusses, a German design for military bridges, we used extensively in Rhine bridge rebuilding. With 20-ft. panel the web arrangement and depth were varied to suit the spa with divided Warren web, K-web and Z-web for 20-, 40- an

HAZARDOUS WORK of cradling the "Biggest Inch" pipe line from a suspensio bridge over the Colorado river at Blythe, Calif. Designed to pipe natural ga from Texas to southern California, the project was scheduled for completio late in 1947



o-ft. depths, respectively.

The Frankenthal bridge, whose two continuous girder spans f 543 ft. each were by far the longest girder spans in the world, vas never completed by the Germans because of shortage of teel during World War II.

The war-wrecked Cologne-Deutz highway bridge (a self-nchored suspension bridge with a central span of 605 ft. and ide spans of 302 ft., completed 1915) was replaced with a deck irder continuous cellular bridge on the old piers. The 605-ft. pan established a new world's record for girder spans.

An unusual floating Bailey bridge was built in 1947 by the British royal engineers over the Rhine at Duesseldorf. About 980 of its 2,391 ft. total length was placed on floats, the spans esting on towers providing a vertical shipping clearance of 27 t. and a horizontal clearance of 100 ft. During floods, the enire bridge would be towed away to a safe harbour.

**Italy.**—Some 2,944 bridges on the highways, plus 39 mi. of masonry bridges and 21 mi. of iron or steel bridges on the railoads, were wrecked in World War II. Steel shortages coninued to delay rehabilitation in 1947. The 150-ft. high Sagitario viaduct near Sulmona—originally built of brick but reduced to a pile of rubble by German demolition squads—was ebuilt in concrete in 1947, with 17 arches of more than 30 ft. pans. In the highway bridge over the Tiber near Montecastelli, 210-ft. concrete arch was substituted for 3 90-ft. brick arches.

**Hungary.**—Work proceeded during 1947 on reconstruction f the Franz-Josef bridge over the Danube river at Budapest. This steel cantilever, dating from 1897, was to be the first of he city's bridges restored to service. The Horthy bridge, a coninuous truss completed in 1937, was scheduled to be rebuilt f possible in the original design.

The famed Margaret bridge, a stone spandrel-arch structure built in 1876 to span the Danube at Budapest, was under reconstruction in 1947, replacing the six 269-ft. stone arches with teel.

**France.**—Among France's many hundreds of restored raiload bridges, the one at Nogent-sur-Marne, ten miles east of Paris, was notable as an entirely new structure, whereas the majority of the war-damaged bridges were merely patched and ebuilt. The four original 165-ft. masonry arches of the Nogent bridge had been reduced to unusable rubble by demolition harges. The new bridge was an imposing double-track strucure of three concrete arch spans of 260, 230 and 225 ft. The bridge was constructed with the aid of a 950-ft. span cableway.

After being war-wrecked (1940 and 1944) and rebuilt twice (1942 and 1947) the Eauplet bridge across the Seine upstream rom Rouen again carried all the main line trains between Paris nd Le Havre.

The 354-ft. central arch (reinforced concrete) of the Rhône iver highway bridge at Vienne, France, constructed in 1947, vas said to have the flattest curve at the centre of any similar tructure in the world—only 18 ft. rise on a 207-ft. length. This lat curve, with the radius at the centre reaching 657 ft., was dopted to give an especially wide clearance for river traffic. The centring was hung from a temporary three-hinged steel rch, with a large cableway to place the concrete. Ten 50-ton ydraulic jacks inserted at the crown were used to decentre the rch and induce its precalculated dead load stress.

Ten thousand highway bridges and 5,000 railroad bridges were vrecked or damaged in France during World War II. Timber restles were used to by-pass the wrecked highway spans while masons, aided by hand winches and not much else, rebuilt the bridges to their original outlines. The famous arch bridge over he Loire at Blois, built in 1724 by Jacques Gabriel, was retored to its original lines.

A new bridge over the Loire at Orleans, France, was of reinforced concrete and contained 1 arch of 155 ft. and 10 of 123 ft. It replaced 15 stone arches of 80 ft., 10 of which were completely destroyed during the war.

THE BRONX-WHITESTONE BRIDGE, spanning the East river in New York city, showing its widened roadway and added stiffening trusses. Reconstruction work on the bridge was completed in 1947

The Montlouis bridge over the Loire at Vouvray was completely rebuilt from the ruins of its twelve 82-ft. arches.

About 20 prestressed concrete bridges were built in France in 1947, and 20 more that had been designed were awaiting money and materials. This type was adopted for the large saving in steel. The longest single span, 181 ft., was in the Luzancy bridge over the Marne.

**Other Countries.**—Spanning the Hawkesbury river in New South Wales, Australia, a new steel highway bridge 2,000 ft. long was completed in 1946. A new steel railroad bridge, 2,764 ft. long, over the same river, was completed in 1947.

Construction of a $5,000,000 high-level bridge 5,500 ft. long over the Burdekin river in Queensland was authorized in 1947, following foundation tests and design studies in 1946. The bridge was planned as a dual rail and highway structure, to consist of ten main truss spans, each 250 ft. long, with approach trestles.

An unusual bridge, combining steel and concrete truss members, was completed in 1947 at Tordera, Spain, in the province of Barcelona. In the three deck-truss spans of 148, 177, and 148 ft., the top chords are of reinforced concrete while the bottom chords and the diagonal web members are of steel. The diagonals are of V-form, dispensing with transverse bracing below the deck.

To speed up traffic between Montreal, Quebec, Canada, and the Lachute district, work was started in 1947 on the construction of the new $1,500,000 St. Eustache bridge to replace the old De Bellefeuille span over the River of the Thousand Isles.

A light suspension bridge over the Minero river at Pauna in Boyaca department, Colombia, collapsed in 1947, with an estimated death toll of 25.

The first railroad bridge over the Tigris river was under construction in 1947 by British engineers south of Baghdad, Iraq. The 7 span concrete and steel bridge, carrying a metre-gauge railway line and an 18-ft. roadway, was undertaken to provide through railway freight connections from the oil fields of Iran to Turkey, Mosul and Basra.

The first aluminum bascule bridge in the world was planned in 1947 by British engineers to be erected in the harbour at Sunderland, on the northeast coast of England just south of Newcastle. The proposed double-leaf bascule was designed as a combination highway and railroad bridge, to provide a clear waterway of 90 ft., and to carry a moving load of 70 tons.

A reinforced concrete arch bridge over the Mond river in Udaipur state, India, with a main span of 175 ft. and a total length of 501 ft., was completed in 1946. The concrete hangers were cast integrally with the floor beams to form inverted rigid frames, to aid in resisting lateral wind force. (*See* also Roads and Highways.) (D. B. S.)

**Briquettes, Fuel:** *see* Fuel Briquettes
**British Borneo:** *see* North Borneo.

**British Columbia.** British Columbia ranks third in area among the nine provinces of Canada and occupies the most westerly position. The crown colonies of Vancouver Island (1849) and of British Columbia (1858) united in 1866, and on July 20, 1871, joined the Canadian confederation. The province has an area of 366,255 sq.mi., of which 6,976 sq.mi. are water, and is bounded on the west by the Pacific ocean and the panhandle of Alaska; on the north by the 60th parallel; on the east by the Province of Alberta; and on the south by the Straits of Juan de Fuca and the 49th parallel.

The population on June 1, 1947, was estimated to be 1,044,000 (1941 census, 817,861). The population is predominantly of British origin—70% at the time of the 1941 census. The 1941 census indicated 443,394 urban dwellers and 374,467 rural dwellers. The principal ports and chief urban centres—Greater Vancouver (1941, 351,491), Greater Victoria (75,218), the capital, and New Westminster (21,967) are all located in the southwestern portion of the province. Based on the distribution of ration books, in 1946 the population was: Greater Vancouver, 495,767, Greater Victoria, 97,822, Greater New Westminster, 43,586.

**History.**—In the second session of the 21st legislative assembly (Feb. 11, 1947–April 3, 1947) Herbert Anscomb, minister of finance, reported revenue collected for the fiscal year ending March 31, 1946, amounted to $46,183,468; expenditures had been $38,041,605; the net debt at Dec. 31, 1946, was $132,648,564. Anticipated revenues were $58,888,930 and expenditures $58,781,335 for the fiscal year 1947–48. Measures passed by the assembly included: an act to authorize and implement an agreement between the dominion and the province, involving a five-year tax agreement; the Fur Farm act, enabling the government to administer the fur-farming industry; the Industrial Conciliation and Arbitration act, respecting the right of employees to organize and providing for mediation, conciliati and arbitration of industrial disputes; the British Columb Highway act, enabling the government to borrow $5,000,0 for the purpose of highway and bridge construction.

*Economic Activity in British Columbia, 1945–47*

| | Unit | 1945 | 1946 | 1947 Prelimina Estimate |
|---|---|---|---|---|
| AGRICULTURE: | | | | |
| Total value of production | $ | 103,679,430 | 117,827,400 | 120,700,0 |
| Livestock . . . . . . | $ | 13,152,000 | 13,926,000 | 14,800,0 |
| Poultry products . . | $ | 13,364,000 | 14,722,000 | 16,100,0 |
| Dairy products . . . | $ | 21,230,578 | 20,179,400 | 20,900,0 |
| Fruits and vegetables | $ | 26,761,436 | 34,800,000 | 33,400,0 |
| Field crops . . . . | $ | 23,679,000 | 28,100,000 | 29,000,0 |
| Miscellaneous . . . | $ | 5,492,416 | 6,100,000 | 6,500,0 |
| FISHERIES: | | | | |
| Total value of production | $ | 44,531,858 | 43,817,147 | 45,000,0 |
| Pack of canned salmon | cases | 1,739,308 | 1,348,137 | 1,500,0 |
| FORESTRY: | | | | |
| Total value of production | $ | 147,655,000 | 173,471,370 | 225,000,0 |
| Timber scaled . . . | M.B.M. | 3,081,235 | 3,193,665 | |
| Paper production . . | ton | 334,362 | 342,754 | |
| MINING: | | | | |
| Total value of production | $ | 63,343,949 | 71,807,951 | 100,000,0 |
| Lead . . . . . . . . | $ | 17,674,884 | 23,489,335 | |
| Zinc . . . . . . . . | $ | 19,431,921 | 21,143,086 | |
| Coal . . . . . . . . | $ | 6,454,360 | 6,220,470 | |
| Gold . . . . . . . . | $ | 7,150,451 | 4,797,602 | |
| INTERNAL TRADE: | | | | |
| Index of wholesale sales | 1935–39=100 | 226.5 | 271.9 | 29 |
| Index of retail sales . | 1935–39=100 | 190.9 | 221.5 | 24 |
| Index of retail department stores . . . . . | 1935–39=100 | 194.3 | 228.2 | 25 |
| Railway freight loaded | ton | 8,399,597 | 8,171,456 | 10,500,0 |
| Consumption of electric power . . . . . . | 000 kw. hr. | 2,788,577 | 2,820,118 | 2,900,0 |
| Construction, building permits . . . . . . | $000 | 24,672 | 42,866 | 40,0 |
| Bank debits . . . . . | $000 | 4,416,364 | 5,367,594 | 6,500,0 |
| Index of employment . | 1926=100 | 175.1 | 166.6 | 19 |
| Salaries and wages paid | $000 | 383,700 | 403,162 | 430,0 |

Premier John Hart announced in August that old-age pe sioners in British Columbia would receive a maximum pensi of $40 a month made retroactive to May 1, 1947. On Oct. Premier Hart announced his retirement from the leadership the Provincial Liberty party. At the close of 1947, members the provincial executive council, or cabinet, and their portfoli were: Byron I. Johnson, premier and president of the executiv council; H. Anscomb, finance; G. S. Pearson, provincial secr tary, health and welfare; E. C. Carson, public works; E. T Kenney, lands and forests; W. T. Straith, K.C., educatio F. Putnam, agriculture; G. S. Wismer, K.C., attorney gener and labour; R. C. MacDonald, mines, municipal affairs; L. H Eyres, railways, trade and industry, fisheries.

**Education.**—During the school year ending June 30, 194 130,605 students were enrolled in the elementary (89,647 junior high (23,057), superior (2,949), and high (14,952 schools of the province. Teaching staffs comprised 2,931 teachers in elementary, 889 in the junior high and 684 teachers i superior and high schools.

**Communication.**—Total highway mileage as of March 3 1946, excluding the Alaska highway, amounted to 22,027 mi of which 9,541 mi. were surfaced, 9,758 mi. were improved eart 2,727 mi. were unimproved earth roads. By the end of 194 the new highway extending from Prince George to Dawso Creek, connecting with the Alaska highway at that point wa well under way, and the 81-mi. Hope Princeton highway ha moved forward.

Railway mileage in 1945 amounted to 3,886 mi. of single trac

During 1946 approximately 4,316,952 tons of cargo wer loaded at British Columbia ports for foreign countries whil 1,751,922 tons of cargo from foreign countries were unloade at local ports. In the same year, the total number of telephones 179,371, included 62,107 on automatic switchboards.

**Manufacturing, Agriculture, Mineral Production.**—Preliminary provincial departmental estimates for the year 194 indicated that the net value of production in all of the primary industries surpassed the comparative totals for 1946; the details are shown in the table. (G. T. H.)

**British East Africa.** The term British East Africa covers the territories of Kenya, Uganda, Tanganyika (mandated territory, now under United Nations trusteeship) and the Zanzibar protectorate; Somaliland may also be included for purposes of convenience. Kenya: area 224,960 sq.mi.; pop. (est. Dec. 1945) 4,064,675; capital: Nairobi (pop. 108,900); chief port: Mombasa (pop. 95,000). Uganda: area 93,981 sq.mi.; pop. (est. 1944) 3,956,654; capital: Entebbe. Tanganyika: area 362,688 sq.mi.; pop. (est. 1944) 5,499,681; capital: Dar es Salaam. Somaliland: area 68,000 sq.mi.; pop. (1944 est.) 700,000; capital: Berbera. Zanzibar Protectorate (including the islands of Zanzibar and Pemba off the coast of Tanganyika): area 1,020 sq.mi. (Zanzibar island, 640 sq.mi.); pop. (1945 est.): 250,000 (Zanzibar, island, 150,000); capital: Zanzibar, town (est. 50,000). The great majority of the population throughout British East Africa is of African descent, Kenya, and to a lesser degree Tanganyika, differs from the other territories in containing substantial European and Asiatic communities. The population of Zanzibar also includes a substantial Indian element. In Kenya the European community is estimated at about 23,700, Indians at 75,100 and Arabs at 26,200. Europeans in Tanganyika, including Polish and other refugees, number approximately 16,000; Asiatics (including Indians and Arabs) about 46,500. Many different languages are spoken in East Africa; but the dialect commonly known as Swahili (an admixture of Arabic, Persian and various African tongues) is used to some extent as a *lingua franca* throughout the whole region. The framework of the administration in most territories is of the normal British colonial pattern. Executive authority is vested in a governor appointed by the crown and assisted by executive and legislative councils. The system of indirect rule, or administration through properly constituted native authorities, is widely employed. In Zanzibar the government is administered, under the advice of a British resident, by the sultan of Zanzibar, a ruler of the Arab Al-Busa'id dynasty which has reigned in the island for more than two centuries. Governors: Kenya, Sir Philip Mitchell (appointed 1944); Uganda, Sir J. Hathorn Hall (appointed 1944); Tanganyika, Sir William Battershill (appointed 1945); Somaliland, under military administration; resident in Zanzibar, Sir Vincent Glenday (appointed 1946).

**History.**—In the political and constitutional sphere the outstanding question that came under discussion in 1947 in respect to East Africa was that of interterritorial organization as between Kenya, Uganda and Tanganyika. The three territories form a solid geographical bloc, they maintain a common customs and excise tariff (with free trade *inter se*) and they are served by interlocking communications systems. Proposals for interterritorial reorganization had been published in Dec. 1945. Revised proposals, following upon discussions of the earlier plan, were published in Feb. 1947. In broad outline, they provided for the establishment of (1) an East African high commission consisting for the time being of the officers administering the governments of Kenya, Uganda and Tanganyika; (2) an East African central assembly; and (3) an executive organization supported in appropriate cases by interterritorial and consultative bodies. It was proposed that existing advisory and consultative bodies concerned with production and supply, industry, research and publicity should be retained; and that a new advisory board, a post and telegraph board and a transport advisory board should in due course be created. The revised proposals were endorsed by a majority of each of the three local legislative councils; they were to be brought into effect at the beginning of 1948 for an experimental period of four years.

A conference of African governors was held in London in Nov. 1947, under the secretary of state's chairmanship, in which the governors of both East and West Africa took part. This conference discussed African affairs under the three main heads of (1) political and administrative, (2) economic and (3) social. It followed upon a conference of colonial officials held at Cambridge the preceding August, and it prepared the way for a conference to be held in 1948, at which elected representatives of the African peoples would be brought into the discussion.

Among the economic questions arising during the year none was more important than that of the East African groundnut scheme. A comprehensive paper on the subject was published by the British government in Feb. 1947, embodying the report of the special mission sent in the previous year to investigate the practicability of the mechanized production of groundnuts in east and central Africa. The government accepted the view of the mission that the scheme was a practicable one and could be carried out on a large scale. They considered that the most efficient instrument for its execution would be "a government-owned and -financed corporation created by statute with clearly defined powers and duties and with its own separate organization and a responsible board of directors answerable to the government but with the fullest scope for initiative."

There was much other activity in the economic field. A report known as *The Uganda Electricity Survey, 1947* was published in the summer of 1947. Its recommendations, which were submitted to the Uganda legislative council for approval, provided for the construction of a hydroelectric power station at Owen Falls (Lake Victoria) capable of generating 75,000 kw. The estimated cost exceeded £4,000,000. It was considered that, in addition to increasing the production of power, the scheme would result in substantial economies. Progress was made with the construction of a new meat-canning factory in Tanganyika, the establishment of which had been under consideration since 1942. The factory would not only relieve the pressure upon the existing Athi River factory in Kenya, but would provide a market and a channel of outlet whereby livestock surplus to the internal consumer requirements of Tanganyika could be readily disposed of. Grants sanctioned during the year under the Colonial Development and Welfare act included £20,000 for agricultural research in East Africa; £29,000 for experiments with DDT and other insecticides; £300,000 for Makerere college (Uganda); £117,000 for hydrological research in Uganda; and £140,000 for the development of the forest resources of Tanganyika.

A strike of African employees, affecting about 15,000 persons, occurred at Mombasa (Kenya) in Jan. 1947. It was announced in February that an ordinance had been enacted in Kenya providing for compensation to workmen for injuries suffered in the course of their employment. An application from the East African governors' conference for assistance toward a scheme (estimated to cost £1,775,000) for the construction of East African main trunk roads was approved in principle. A Town and Country Planning bill was introduced in the Uganda legislative council.

**Finance and Trade.**—Currency throughout British East Africa is controlled by the East African Currency board in London. The standard coin is the East African shilling. A note issue is also maintained. In Somaliland the Indian rupee is in circulation as well as the East African shilling. Estimated revenue (1946): Kenya £9,020,000; Uganda £3,891,000; Tanganyika £4,996,000; Somaliland £770,000; Zanzibar £718,000. Expenditure: Kenya £8,720,000; Uganda £3,566,000; Tanganyika £4,778,000; Somaliland £770,000; Zanzibar £741,000. Imports (1946): Kenya and Uganda £22,649,000; Tanganyika £8,195,000; Zanzibar £1,978,-

000. Exports: Kenya and Uganda £20,594,000; Tanganyika £9,360,000; Zanzibar £2,164,000. The resources of all the British East African territories are in the main agricultural, though minerals are assuming a rapidly increasing importance in Tanganyika. Kenya, with altitudes varying from sea level to more than 9,000 ft., provides soil suitable for a wide range of crops. Coffee, maize, sisal and pyrethrum (a valuable insecticide) are all grown in substantial quantities and figure prominently in the domestic exports of the colony. There is also a large export trade in animal products (hides and skins). Cotton is the chief export product of Uganda. The principal exports of Tanganyika include sisal, hides and skins, coffee, cotton and gold. The discovery of diamonds and lead in the territory points to a further source o mineral wealth. Somaliland is for the most part a pasture country; settled cultivation is rare and production loosely organized. The only exports of any importance are skins and livestock. The agricultural produce of Zanzibar for export purposes is confined in the main to cloves and coconut products. The clove industry has long been the backbone of the local agricultural economy. (J. E. Sh.)

**British Empire.** The governments of the British empire and the governors and premiers were as follows on Dec. 31, 1947:

*British Empire*

| Country | Area Sq. mi. (approx.) | Population (000's omitted) | Capital | Status | Rulers, Governors and Premiers |
|---|---|---|---|---|---|
| *Europe* | | | | | |
| Great Britain and N. Ireland | 93,371 | 48,367* | London | Kingdom | George VI, King<br>Prime Minister of Great Britain: C. R. Attlee<br>Governor of Northern Ireland: Earl Granville<br>Prime Minister of Northern Ireland: Sir Bas Brooke |
| Channel Islands | 75 | 79† | St. Helier<br>St. Peter Port | Part of kingdom of Great Britain and N. Ireland | Jersey: Lt. Gen. Sir A. E. Grassett<br>Guernsey: Lt. Gen. Sir Philip Neame |
| Eire | 26,602 | 2,953‡ | Dublin | Republic associated with the British Commonwealth of Nations | President: Sean O'Kelly<br>Prime Minister: Eamon de Valera |
| Gibraltar | 2 | 20§ | Gibraltar | Colony | Lt. Gen. Sir Kenneth Anderson |
| Isle of Man | 221 | 51§ | Douglas | Part of kingdom of Great Britain and N. Ireland | Air Vice-Marshal Sir Geoffrey Bromet |
| Malta | 122 | 285† | Vallettc | Colony | Sir Francis Douglas |
| *Asia* | | | | | |
| Aden and Perim | 80 | 86‡ | | Colony | Sir Reginald Champion |
| Aden Protectorate | 112,000 | 630§ | | Protectorate | |
| Bahrein Islands | 213 | 90‖ | Manama | Protectorate | A. C. Galloway (Brit. political agent) |
| Borneo: | | | | | |
| North Borneo (with Labrian) | 29,417 | 310† | Sandakan | Colony | Edward Twining |
| Brunei | 2,226 | 41† | Brunei | Protectorate | W. J. Peel (Brit. resident) |
| Sarawak | 50,000 | 600† | Kuching | Colony | Sir Charles Arden Clarke |
| Burma | 261,749 | 16,824‖ | Rangoon | Dependency | Sao Shwe Thaik (Provisional president) |
| Ceylon | 25,332 | 6,651‡ | Colombo | Colony | Sir Henry Monck-Mason Moore |
| Cyprus | 3,572 | 435¶ | Nicosia | Colony | Lord Winster |
| Hong Kong | 391 | 1,072♀ | Victoria | Colony | Sir Alexander Grantham |
| India | 1,221,000 | 320,000† | Delhi | Dominion | Earl Mountbatten of Burma<br>Premier: Pandit Jawaharlal Nehru |
| Malaya: | | | | | |
| Malayan Union | 50,962 | 4,124‖ | Kuala Lumpur | Protectorate | Sir Edward Gent |
| Singapore | 1,282 | 1,435‖ | Singapore | Colony | Sir Franklin Gimson |
| Pakistan | 361,000 | 70,000† | Karachi | Dominion | Mohammed Ali Jinnah<br>Premier: Liaquat Ali Khan |
| Palestine | 10,159 | 1,750¶ | Jerusalem | Mandate | Lt. Gen. Sir Alan Cunningham, High Commissioner |
| *Africa* | | | | | |
| Anglo-Egyptian Sudan | 967,500 | 6,591♂ | Khartoum | Condominium | Sir Robert Howe |
| Basutoland Protectorate | 11,716 | 590§ | Maseru | Protectorate | Sir Evelyn Baring, High Commissioner |
| Bechuanaland Protectorate | 275,000 | 284‡ | Mafeking | Protectorate | |
| Gambia | 4,074 | 221□ | Bathurst | Colony | A. B. Wright. |
| Gold Coast, including British Togoland | 91,843 | 3,963♂ | Accra | Colony and protectorate;<br>Brit. Togoland: trusteeship territory | Sir Gerald Creasy |
| Kenya | 224,960 | 4,065¶ | Nairobi | Colony and protectorate | Sir Philip Mitchell |
| Mauritius (and Dependencies) | 807 | 433° | Port Louis | Colony | Sir Donald Mackenzie-Kennedy |
| Nigeria, including British Cameroons | 372,674 | 22,000¶ | Lagos | Colony and protectorate;<br>Brit. Cameroons: trusteeship territory | G. Beresford Stooke |
| Nyasaland | 47,949 | 2,231† | Zomba | Protectorate | G. W. T. Colby |
| Rhodesia, Northern | 290,320 | 1,678† | Lusaka | Protectorate | Sir Gilbert Rennie |
| Rhodesia, Southern | 150,333 | 1,778* | Salisbury | Self-governing colony | Maj. Gen. Sir John N. Kennedy<br>Premier: Sir Godfrey M. Huggins |
| St. Helena, Ascension and Tristan da Cunha | 126 | 5♀ | Jamestown | Colony | George Andrew Joy |
| Seychelles | 156 | 35† | Victoria | Colony | Dr. Percy Selwyn-Clarke |
| Sierra Leone | 27,925 | 2,000§ | Freetown | Colony and protectorate | Sir Hubert Stevenson |
| Somaliland Protectorate | 67,936 | 700° | Berbera | Protectorate | (Under military administration) |
| South-West Africa | 317,725 | 321‖ | Windhoek | (See Trusteeship Territories) | Col. P. I. Hoogenhout, Administrator |
| Swaziland | 6,705 | 187‡ | Mbabane | Protectorate | Sir Evelyn Baring, High Commissioner |
| Tanganyika | 362,688 | 5,499° | Dar-es-Salaam | Trusteeship territory | Sir William Battershill |
| Uganda | 93,981 | 3,957° | Entebbe | Protectorate | Sir John Hathorn Hall |
| Union of South Africa | 472,550 | 11,392‡ | Pretoria (seat of government)<br>Cape Town (seat of legislature) | Dominion | Major G. B. van Zyl<br>Premier: Field Marshal Jan C. Smuts |
| Zanzibar (and Pemba) | 1,020 | 250¶ | Zanzibar | Colony and protectorate | Sir Vincent Glenday (British resident) |
| *America* | | | | | |
| Bahamas | 4,400 | 69▲ | Nassau | Colony | Sir William Murphy |
| Barbados | 166 | 193‡ | Bridgetown | Colony | Sir Hilary Blood |
| Bermuda | 19 | 34¶ | Hamilton | Colony | Sir Ralph Leatham |
| British Guiana | 89,480 | 376‡ | Georgetown | Colony | Sir Charles Woolley |
| British Honduras | 8,867 | 59‡ | Belize | Colony | Edward Hawkesworth |
| Canada | 3,694,863 | 12,582* | Ottawa | Dominion | Field Marshal Viscount Alexander of Tunis<br>Premier: W. L. Mackenzie King |
| Falkland Islands and Dependencies | 7,681 | 3▲ | Port Stanley | Colony | G. M. Clifford |
| Jamaica | 4,765 | 1,289‡ | Kingston | Colony | Sir John Huggins |
| Leeward Islands | 423 | 109‡ | St. John | Colony | W. A. MacNie (acting governor) |
| Newfoundland and Labrador | 152,734 | 318♂ | St. John's | Colony, constitution suspended | Sir Gordon Macdonald |
| Trinidad and Tobago | 1,980 | 558‡ | Port of Spain | Colony | Sir John Shaw |
| Windward Islands | 821 | 252‡ | St. George's | Colony | Sir Arthur Grimble |
| *Australia and Oceania* | | | | | |
| Commonwealth of Australia | 2,974,581 | 7,581+ | Canberra | Dominion | William John McKell<br>Premier: Joseph Benedict Chifley |
| Fiji | 7,055 | 260* | Suva | Colony | Sir Brian Freeston |
| New Guinea | 93,000 | 675♀ | Rabaul | Trusteeship territory | Col. J. K. Murray, Administrator |
| New Hebrides | 4,633 | 43‖ | Vila | Condominium | Sir Brian Freeston, High Commissioner |
| Nauru | 8 | 1* | | Trusteeship territory | Mark Ridgway, Administrator |
| New Zealand | 103,416 | 1,793* | Wellington | Dominion | Lt. Gen. Sir Bernard Freyberg<br>Premier: Peter Fraser |
| New Zealand Dependencies | 519 | 20‖ | | | |
| Norfolk Island | 13 | 1□ | | Australian dependency | Administrator: Maj. Gen. Sir Charles Rosenthal |

*British Empire (Continued)*

| Country | Area Sq.mi. (approx.) | Population (000's omitted) | Capital | Status | Rulers, Governors and Premiers |
|---|---|---|---|---|---|
| *Australia and Oceania (Continued)* | | | | | |
| acific Islands (Solomon, Gilbert and Ellice, Tonga, Pitcairn Isls.) | 12,997 | 169• | | Colonies and protectorate | Sir Brian Freeston, High Commissioner |
| apua . . . . . . . . . . . . | 90,540 | 339♀ | Port Moresby | Part of Commonwealth of Australia | H. L. Murray, Administrator |
| Western Samoa . . . . . . . | 1,133 | 71□ | Apia | Trusteeship territory | Lt. Col. F. W. Voelcker, Administrator |

*Est. 1947. †Est. 1946. ‡Census 1946. §Est. 1939. ‖Est. 1941. ¶Est. 1945. ♀Est. 1940. ♂Est. 1942. □Census 1945. ◇Est. 1944
▲Est. 1943. +Census 1947. •Estimates 1938–45.

**British Guiana.** The only British colonial territory on the mainland of the South American conti-ent. It is bounded on the north by the Atlantic ocean, on the outh and southwest by Brazil, on the east by Surinam, and on he northwest by Venezuela. Area: 89,480 sq.mi.; pop. (1946 ensus): 376,146, including about 164,000 East Indians, 137,000 Negroes, 9,500 aborigines, 8,450 Portuguese and 3,650 Chinese. Chief towns: Georgetown (cap. 94,358); New Amsterdam (9,588). Religions (1931 census): 192,340 Christians (the Church of England being the largest separate community) and 18,593 non-Christians (mostly Hindus). Executive authority s vested in a governor appointed by the British crown and ssisted by an executive and a legislative council. The legisla-ive council consists of the governor (as president) and 3 other fficial members, 7 nominated members and 14 elected mem-ers. The executive council includes four officials and five non-fficials. Governor: Sir Charles Woolley (appointed 1946).

**History.**—Economic questions were the main preoccupation n British Guiana during the year 1947. In the past the colony vas mainly dependent upon sugar, but it was recognized that in uture there would be a need for a more diversified form of conomy. A sketch plan of development was drawn up in 1943, vith the object of ensuring the best possible use of the colony's atural resources and of encouraging a greater degree of self-ubsistence. The program contemplated a total expenditure of 2,500,000 spread over a period of 20 years. In 1946, after the llocation of funds under the Colonial Development and Wel-are act, 1945, was announced, the British Guiana government et up a committee under its economic adviser to draw up a etailed program of development for the colony. This program ad not been completed in 1947, but in the meantime a number f projects were already in course of execution, with financial ssistance under the act. By the end of 1945 grants were made o a total value of more than £1,000,000 for irrigation and rainage projects. A further grant of £81,127 for the same pur-ose was made in May 1947. In Jan. 1947 it was announced hat the economic potentialities of British Guiana and British Honduras (*q.v.*) were to be re-examined, and that, as a first tep, a commission would be appointed to inquire into the possi-ilities of settlement in those territories, taking into considera-ion the requirements of the existing population and the need to rovide outlets for surplus populations from the West Indian slands as well as for persons displaced from their homes in Europe as a result of the war. The commission was duly ap-ointed and proceeded with its investigations. The special prob-ems of the largely undeveloped interior of British Guiana con-inued to engage the attention of an interior development com-nittee set up in 1944. Other questions under investigation in-luded the possibilities of hydroelectric development, the expan-ion of fisheries and the promotion of secondary industries in eneral. The development of air transport was under active ex-mination. Questions of labour and the development of trade nions were also much to the front.

**Finance and Trade.**—The currency of British Guiana is terling, the monetary unit of account being the local dollar at he fixed statutory rate of $4.80 to the £. Revenue (1946) 2,218,187; expenditure £2,820,711. Imports (1946) £5,597,000; exports £5,634,000. The major products of the colony are sugar and bauxite, in both of which commodities there is a large export trade. Other articles of export are gold, diamonds, wood and timber, balata (a kind of gutta-percha) and copra. (J. E. Sh.)

**British Honduras.** A British colony on the east coast of Central America, bounded on the north, east and south and west, respectively, by the Yucatan peninsula, the Caribbean sea and Guatemala. Area (including certain islands): 8,867 sq.mi.; pop. (1946 census): 59,149. Languages: English, Spanish and Maya. Capital and principal port: Belize (pop. 21,837). Executive authority is vested in a governor appointed by the British crown and assisted by an executive and a legislative council. The legislative council, as constituted in 1936, consists of the governor as president, three ex officio and two nominated members, two unofficial members nominated by the governor and six unofficial members elected by five constituencies. The executive council consists of the governor and official and unofficial members. Governor in 1947: Edward Gerald Hawkesworth.

**History.**—The Development Planning committee for British Honduras produced its report early in 1947. The report contained recommendations for the development of the economic resources of the colony for the next five to ten years, and for an expanded program of social services. A delegation from British Honduras visited London during the year. They were received by the secretary of state for the colonies, who discussed with them the political and economic conditions and aspirations of the colony. Experiments in rice production, and in other branches of agricultural activity, were carried out locally. The long-standing boundary dispute with the republic of Guatemala continued, throughout the year, to form the subject of correspondence. between the British and Guatemalan governments. The proposal that the question should be referred to an international court of arbitration had not been carried into effect by the end of November. The dispute remained unresolved at the end of 1947. British Honduras, like the other British "continental" territory in the Caribbean region (British Guiana), took part in the conference held in Jamaica in Sept. 1947 to consider the question of closer union between the British Caribbean territories (*see* JAMAICA). Substantial grants from the British treasury were sanctioned in 1947, under the Colonial Department and Welfare act, for purposes of road construction in British Honduras. A grant of £43,425 was allocated in May for the road from Belize to Cayo in the interior; and a further grant of £114,500 was approved in the following July for the construction of a road from Belize to Hector Creek.

**Finance and Trade.**—The monetary unit is the local dollar, equal in theory to the U.S. dollar but in practice closely linked to sterling. Revenue (1946): £514,000; expenditure £542,000. Imports (1946) £1,683,000; exports £1,296,000. The natural resources of the colony consist almost entirely of agricultural and forest products.

The export of mahogany, for long the main basis of the trade of British Honduras, had undergone considerable diminution. Other articles of export include fruit, chicle (an essential raw material of chewing gum) and copra.

(*See* also GUATEMALA.) (J. E. SH.)

**British Isles:** *see* GREAT BRITAIN & NORTHERN IRELAND, UNITED KINGDOM OF.

## British Legion.

Membership in 1947 was more than 1,000,000. In addition the women's section numbered nearly 500,000. Branches exceeded 5,000 and more than 4,000 service committees administered to the needs of ex-service men and women. Although the annual income from Poppy day was almost £1,000,000, reserves built up during the war years were being drawn on to meet demands on the benevolent fund, so that expenditure was £250,000 over income. There were 6,500,000 men and women who served in World War II added to the 5,000,000 of World War I, who with their dependents were entitled to assistance from the legion.

The acquisition of eight large houses with grounds was completed; some for the use of the elderly, others for convalescents. The legion sanatoria continued their work of treatment and aftercare. Ex-service men paralyzed by spinal injuries and others suffering from psychoneurosis were subjects of special study and assistance. The legion also set up in 1947 for a year's trial a unit for the intensive treatment of rheumatic diseases. The results in 300 cases were so satisfactory that the ministry of health took over the unit, transferred it to the North-West hospital, London, and agreed to open similar units elsewhere. The legion's work on pensions benefited thousands of ex-service men and women throughout the country. During the year Sir Ian Fraser, M.P., was elected president and Lt. Col. Gordon Larking, national chairman. (J. C. As.)

**British Malaya:** *see* MALAYAN UNION AND SINGAPORE.
**British Pacific Islands:** *see* PACIFIC ISLANDS, BRITISH.
**British Possessions in the Mediterranean:** *see* CYPRUS; GIBRALTAR; MALTA.
**British Somaliland:** *see* BRITISH EAST AFRICA.

## British South African Protectorates.

Under this heading are grouped the three British protectorates of Bechuanaland, Basutoland and Swaziland, of which certain essential statistics are given in the table. *See* BRITISH EMPIRE for population and capital towns. High commissioner: Sir Evelyn Baring. For other territories of British South Africa, *see* SOUTH AFRICA, THE UNION OF.

**History.**—After the impetus given to production and service by wartime demands, peacetime development schemes in these protectorates were slow in getting under way, particularly if viewed through the eyes of the native soldier who had to readjust himself to his old surroundings. It would be long, for example, before plans against soil erosion could make themselves felt, and meanwhile the population pressure in Basutoland and Swaziland became worse.

In Feb. 1947, Sir Godfrey Huggins, prime minister of Southern Rhodesia, went to London to arrange for the nationalizati of the Rhodesia-Bechuana-Union railway line. It was hoped relieve the owners from the necessity of finding new capit estimated at £20,000,000 of old debenture debt and £6,000,o new money for re-equipment purposes. Britain refused to burd Northern Rhodesia or Bechuanaland with part of this sum b agreed to assist in raising a loan of £30,000,000, Bechuanala guaranteeing up to £1,500,000 of any deficit. The previous ow ers, the Rhodesia Railways trust, were paid in cash the equiv lent of about 25 years of possible dividends; *i.e.*, £3,150,00 Bechuanaland itself was represented on the control authori of the nationalized line.

The three protectorates were visited by King George VI du ing his tour of South Africa. An elaborate and colourf parade was held at Maseru, where many thousands of nati horsemen attended the *pitso*, or council of state, and witness the investiture of their queen, Mantsebo Seeiso, with the Ord of the British Empire. This took place on March 12, the n tional holiday. It was estimated that 100,000 natives took pa in this ceremony. In Swaziland the royal party did not visit t capital, Mbabane; the paramount chief received them instead Goedegun; the king was given an opportunity of seeing a for of about 4,000 Swazi warriors in their own setting. The visit the largest (if not best-developed) protectorate, Bechuanalan was limited to a crossing by train. The chiefs of Bechuanalan continued to protest against the penetration of the Union South Africa into the mandated territory of South-West Afric They still hoped that either Britain or the United Nations itse would take it in trusteeship and thus enable a railway link-u of their land-locked country with the Atlantic; this could b effected by a continuation of the line from Gobabis, the prese railhead in South-West Africa, via Ghanzi, the European settl ment 200 mi. away and well inside Bechuanaland, to Matetsi Southern Rhodesia, thus skirting Ngamiland (where there sufficient rainfall) and opening up the Ngwato reserve (whe coal had been found but could not be mined): only thus coul Chief Tshekedi hope to introduce home industry to his countr The refusal of the Union of South Africa to surrender its co trol of South-West Africa came, therefore, as a severe blow t Bechuanaland; the protectorate feared that it would rema without any proper outlet to the Atlantic and would be burdene with an additional 500 mi. of frontier, behind which the Union native policy of segregation, etc., would become permanent.

(F. W. PK.)

*British South African Protectorates*

| Territory and Area in sq.mi. | Principal Products (in short tons) | Imports and Exports (in £) | Road and Rail | Revenue and Expenditure (in £) | Education Elementary and Secondary |
|---|---|---|---|---|---|
| BASUTOLAND 11,716 | (1945–46)<br>wheat 32,010<br>maize (1944) 70,000<br>wool (1944 export) 4,243 | (1942)<br>imp. 1,033,328<br>exp. 459,509 | rds. 502 mi. | (1945–46)<br>rev. 723,934<br>exp. 672,234 | (1944)<br>European schools 7, scholars 85; government and mission schools 922, scholars 85,429 |
| BECHUANALAND c. 275,000 | gold and silver (1945): value £95,202 | In customs union with South Africa; no accurate figures available | rds. 2,048 mi.<br>rly. 502 mi. | (1944-45)<br>rev. 315,000<br>exp. 301,800 | (1945)<br>European schools 12, Negro 3, native 130; scholars c. 6,000 |
| SWAZILAND 6,704 | gold (1940) 0.037<br>tin ore (metal content) (1940) 110<br>maize (1938) 6,490 | In customs union with South Africa | rds. 654 mi. | (1945–1946)<br>rev. 305,490<br>exp. 462,551 | (1946)<br>European schools 7, scholars 495; Negro 3, scholars 191; native 204, scholars 10,833 |

## British West Africa.

The term includes the four Britis colonial territories on the west coa of Africa, viz: Nigeria, the Gold Coast, Sierra Leone and th Gambia. (The former-mandated territories of British Togolan and the British Cameroons are administered as trusteeship terr tories as part of the Gold Coast and of Nigeria, respectively. Unlike the three main East African territories (Kenya, Ugand and Tanganyika) the four West African colonies are not co tiguous, being separated by tracts of French colonial territor and depending in the main upon sea transport for their com munications *inter se*. Nigeria area 372,674 sq.mi.; pop. (194 est.) 22,000,000; chief towns Lagos (cap. 126,108), Ibada (387,133), Kano (89,162), Og bomosho (86,744), Iwo (57, 191). Gold Coast: area 91,84 sq.mi.; pop. (1942 est.) 3,962, 692; chief towns: Accra (cap 78,858), Kumasi (47,054), Se kondi (23,847), Tamale (21, 303). Sierra Leone: area 27,92 sq.mi.; pop. (1939 est.) 2,000,000; capital: Freetown (1945 est.): 87,000, Gambia: area 4,074 sq.mi.; pop. (1945 census) 220,509; capital: Bathurst (21,152). The great majority of the population of British West Africa is of African descent. For the most part they are pagan in religion, though the bulk of the inhabitants of the northern provinces of Nigeria are Moslem. The nearest approach to a *lingua franca* in West Africa is Hausa (an African language with a considerable infusion of Arabic words), but it is far from being understood everywhere. Each territory has its own constitution: in all four territories executive authority is vested in a governor (appointed by the British crown) who is assisted by executive and legislative councils. The system of indirect rule is widely employed. Governors: Nigeria, G. Beresford Stooke (appointed 1947); Gold Coast, Sir Gerald Creasy (appointed 1947); Sierra Leone, Sir Hubert Stevenson (appointed 1941); Gambia, A. B. Wright (appointed 1947).

**History.**—A notable feature of the year 1947 was the development of closer co-operation between British West Africa and neighbouring countries under French and Belgian colonial administration. Arthur Creech Jones, the British secretary of state for the colonies, laid special emphasis on this development in a speech delivered in the house of commons on July 29, 1947, during a debate on colonial affairs. "We have been developing," he said, "direct collaboration with the other colonial powers, and an important step forward in our co-operation with France and Belgium was taken at a meeting in Paris between representatives of the three governments towards the end of May." Agreement was reached at the Paris meeting on a three-year program of conferences in technical matters between the British, French and Belgian colonial authorities. A program of eight such conferences—to be held in various African centres—was arranged, some of them to be preceded by preliminary discussions in London, Paris or Brussels. They would range over a wide field, covering such subjects as soil conservation, rural economy, nutrition, labour, education, health and the campaign against insect pests. An Anglo-French communications conference took place at Dakar in May 1947. It was attended by technical experts from all four British West African territories and from the territories of French West Africa, the Cameroons and Equatorial Africa. The British colonial office and the ministry of overseas France were represented; Portuguese "observers" were also present. (For the African governors' conference of Nov. 1947 *see* BRITISH EAST AFRICA.)

On the economic side, there were several important developments. The report of a mission appointed to inquire into the production and transport of vegetable oils and oil seeds produced in the British West African colonies was published during the year. The report recommended a number of improvements in methods both of production and of transport. It was announced in Feb. 1947 that an investigation into the hydroelectric potentialities of the Volta river (Gold Coast) had been in progress for some months and that the result was expected to become available in a year's time. A statement was made in the same month regarding the establishment by the Nigerian government of a Cameroons development corporation under legislation enacted in the previous December. The corporation was to concern itself, in the first instance, with banana cultivation in the Cameroons, but would proceed later to deal with other local products. Large-scale grants to Nigeria were sanctioned under the Colonial Development and Welfare act in the course of the year. They included £781,883 for agricultural development, £570,171 for education, £358,113 for forestry and £330,280 for veterinary services. Smaller grants included £57,750 for the expenses of a nutrition field working party in the Gambia and £29,000 for agricultural machinery in the same territory.

The new constitution for Nigeria, sanctioned in 1946, came into force on Jan. 1, 1947. It was formed with the object of promoting constitutional unity under a strong central government, while retaining a large measure of local autonomy in the principal regions. It provided for the establishment of regional councils as a means of bridging the gulf between the people and the central government, of decentralizing powers and of giving the native administrations a recognized place in the constitutional machine. The new legislation council (which had an unofficial and African majority) held its first meeting in March 1947 following upon meetings of the newly formed regional councils in January and February. The revised constitution was criticized in some quarters as not sufficiently democratic.

**Finance and Trade.**—The unit of currency throughout British West Africa is the pound, maintained at par with sterling by the West African Currency board operating in London. Revenue (1946): Nigeria £13,717,000; Gold Coast £6,222,000; Sierra 416,000; Gold Coast £6,091,000; Sierra Leone £1,989,000; Gam- Leone £2,198,000; Gambia £610,000. Expenditure: Nigeria £13,- bia £560,000. Imports (1946): Nigeria £25,685,000; Gold Coast £17,464,000; Sierra Leone £3,961,000; Gambia £949,000. Exports: Nigeria £25,358,000; Gold Coast £20,362,000; Sierra Leone £2,644,000; Gambia £696,000. As in the case of East Africa, the resources of the British West African territories are primarily agricultural; but the area also contains important mineral deposits (tin in Nigeria, gold and manganese in the Gold Coast and diamonds in Sierra Leone). Apart from tin and rubber, the main articles of export from Nigeria are cocoa, groundnuts, palm kernels, palm oil and hides and skins. In the Gold Coast the staple crop, and by far the largest article of export, is cocoa. There is also a considerable export trade in gold and manganese. Sierra Leone's main exports are diamonds and palm kernels. The predominant export crop of the Gambia is the groundnut. (J. E. SH.)

**British West Indies:** *see* BAHAMAS; BARBADOS; JAMAICA; LEEWARD ISLANDS; TRINIDAD; WINDWARD ISLANDS.

**Broadcasting:** *see* RADIO; TELEVISION.

**Bromine.** The United States production of bromine reached a peak figure of 51,056 short tons in 1944 but declined to 39,855 tons in 1945 and 21,392 tons in 1946. The drop in 1945 was the first to occur since the early 1930s when the use of bromine was greatly expanded for the production of antiknock compounds for gasoline. More than 80% of the 1946 output of bromine was used for antiknock compounds and during World War II the percentage was even higher. (G. A. RO.)

**Brookings Institution:** *see* SOCIETIES AND ASSOCIATIONS.

**Broomcorn.** The U.S. broomcorn crop of 1947 was estimated at 32,800 tons, compared with 43,500 tons in 1946 and an average of 41,920 tons in 1936–45. Acreage planted in 1947—226,000—was nearly 30% below that of 1946; the yield of 290 lb. per acre was about the same as in 1946. Hot, dry weather reduced the crop in Oklahoma and Kansas. The leading producing state, as usual, was Oklahoma; Colorado had an average crop, one-third less than in 1946. The Texas crop was above average. Broomcorn prices were higher than in 1946 and fairly steady. (J. C. MS.)

**Brozovich or Broz, Josip (Tito)** (1892– ), Yugoslav statesman and soldier, was born in 1892 in the village of Kumrovec, near Zagreb, son of a blacksmith. He served as a private in the Austro-Hungarian army in World War I and in 1915 went over to

MARSHAL TITO (right) escorting Georgi Dimitrov, Bulgarian prime minister, past an honour guard on the latter's arrival in Belgrade July 27, 1947. The leaders met to confer on political and economic affairs

the Russians. Prisoner of war until 1917, he joined the Red army and fought with it against anticommunist Russian armies. In 1920 he was sent by the Comintern to Yugoslavia to organize the Communist party there. He was arrested many times, and in 1928 he was charged with conspiracy and sentenced to six years' imprisonment. Released in 1934, he went to Moscow, but soon returned to Yugoslavia to supervise the activities of the illegal Communist party. In 1936 he was sent to Paris and helped to organize the transport to Spain of volunteers of many nations joining the international brigades. In 1937 he became secretary general of the Yugoslav Communist party and remained in the country, using many aliases. When World War II started, he was in Belgrade as Slavko Babich, engineer. After the Germans attacked the U.S.S.R. he started guerrilla warfare in Yugoslavia, mainly in Bosnia. In Nov. 1942, using now the pseudonym of Tito, he organized a Yugoslav committee of liberation which formulated a program for a federal Yugoslavia. In the first months of 1945 all Yugoslavia was liberated and on March 7, 1945, Tito, who in the meantime had appointed himself marshal, became officially prime minister and minister of defense of Yugoslavia and commander-in-chief of its armed forces. In March 1946 he made a state visit to Warsaw and Prague, in Nov. 1947 to Sofia and in December to Budapest and Bucharest, signing on each occasion a bilateral treaty of friendship and mutual aid. Addressing the convention of the Union of Ex-Freedom Fighters in Belgrade, on Sept. 30, 1947, he said that the Truman doctrine was "nothing else but an endeavour to provoke war in Europe."

**Brunei:** *see* NORTH BORNEO.

**Bryn Mawr College.** A resident college for women at Bryn Mawr, Pa. In 1947 Bryn Mawr added to its academic program courses in problems of political and governmental reconstruction in postwar Europe, and the epoch of scientific rationalism, and the departments of biology and geology introduced a new interdepartmental course the development of scientific thought. The latter course covers the development of scientific ideas and techniques in chronological sequence, and their origins, interrelationships, and impact on other intellectual activities of various periods. Under the Mary Flexner lectureship, Arnold J. Toynbee, author of *A Study of History,* was in residence at the college for six weeks and gave a series of six public lectures on "Encounters Between Civilizations," which lectures were to be incorporated in the final volumes of his book. (For statistics of endowment, enrolment, faculty, library volumes, etc., *see* UNIVERSITIES AND COLLEGES.) (K. E. M.)

**Bubonic Plague:** *see* PLAGUE, BUBONIC AND PNEUMONIC.

**Buckwheat.** The U.S. buckwheat crop in 1947 was estimated at 7,334,000 bu., compared with 7,124,000 bu. in 1946 and an average of 6,954,000 bu. during 1936–45. Acreage was increased about 33% to 518,000, but the yield was lower—14.2 bu. per acre compared with 18.2 bu. in 1946. Prices rose steadily from $1.39 per bushel in Feb. 1947, to $1.85 in July and $2.01 in December. Buckwheat had declined in importance and was grown chiefly as a catch crop in unfavourable seasons. About two-thirds of the crop was used for livestock feed and less than one-third was sold for meal or for mixed feeds. (J. C. Ms.)

*U.S. Buckwheat Production in Leading States, 1947, 1946 and 10-year Average 1936–45*

(In thousands of bushels)

| State | 1947 | 1946 | 10 yr. average | State | 1947 | 1946 | 10 yr. average |
|---|---|---|---|---|---|---|---|
| Pennsylvania . . | 1,938 | 2,394 | 2,299 | Wisconsin . . . | 330 | 266 | 220 |
| New York . . . | 1,526 | 2,147 | 2,289 | Indiana . . . . | 252 | 90 | 146 |
| Ohio . . . . . | 651 | 340 | 258 | Illinois. . . . . | 208 | 80 | 78 |
| Minnesota . . . | 648 | 588 | 365 | Tennessee . . . | 160 | 165 | 46 |
| Michigan . . . . | 641 | 243 | 401 | West Virginia . | 140 | 152 | 231 |

**Budget, National.** The U.S. budget submitted to congress by Pres. Harry S. Truman on Jan. 12, 1948, recommended expenditures for the fiscal year 1949 of $39,669,000,000 and revenues of $44,477,000,000. The corresponding figures for the preceding fiscal year were $37,728,000,000 and $45,210,000,000. Thus, the budget was based on the expectation that government expenditures would increase over those of fiscal 1948 by a little less than $2,000,000,000, while government revenues would decrease by almost $750,000,000.

For national defense alone, an estimate of $11,025,000,000 was presented, the largest single item among the various categories of government expenditures. By contrast, the estimated expenditures on national defense in fiscal 1948 were $10,746,000,000. This increase was accounted for mainly by three items: increased procurement of aircraft; provision of $400,000,000 for universal military training and increased expenditures for military stock-piling. These three items together amounted to considerably more than the increase shown in the budget, as there were decreases in terminal-leave payments and other World War II liquidation expenses.

The other two major items in the budget associated with previous wars or the prevention of future wars were veterans' services and benefits and international affairs and finance. The budget proposals for the latter item showed a substantial increase to $7,009,000,000, compared with $5,533,000,000 in fiscal 1948. By far the largest item of international expenditures was the European recovery program (*q.v.*) known as the Marshall plan. In addition, expenditures for foreign relief and for aid to the occupied areas were expected to increase largely because of higher prices, the poor crops in Germany and the damage to

Table I.—*Summary of Budget Receipts and Expenditures, United States*

Based on existing and proposed legislation

| Description | Actual, 1947 | Estimate, 1948 | Estimate, 1949 |
|---|---|---|---|
| udget receipts: | | | |
| Direct taxes on individuals | $20,408,000,000 | $22,793,000,000 | $23,322,000,000 |
| Direct taxes on corporations | 9,676,000,000 | 9,548,000,000 | 10,158,000,000 |
| Excise taxes | 7,270,000,000 | 7,320,000,000 | 7,476,000,000 |
| Employment taxes: | | | |
| Existing legislation | 2,039,000,000 | 2,409,000,000 | 2,493,000,000 |
| Proposed legislation | — | — | 350,000,000 |
| Customs | 494,000,000 | 394,000,000 | 378,000,000 |
| Miscellaneous receipts | 4,831,000,000 | 4,373,000,000 | 2,322,000,000 |
| Deduct: | | | |
| Appropriation to federal old-age and survivors insurance trust fund: | | | |
| Existing legislation | 1,459,000,000 | 1,627,000,000 | 1,672,000,000 |
| Proposed legislation | — | — | 200,000,000 |
| Appropriation to health insurance trust fund: | | | |
| Proposed legislation | — | — | 150,000,000 |
| otal budget receipts | 43,259,000,000 | 45,210,000,000 | 44,477,000,000 |
| udget expenditures: | | | |
| National defense | 14,280,000,000 | 10,746,000,000 | 11,025,000,000 |
| Veterans' services and benefits | 7,370,000,000 | 6,632,000,000 | 6,102,000,000 |
| International affairs and finance | 6,540,000,000 | 5,533,000,000 | 7,009,000,000 |
| Social welfare, health and security | 1,379,000,000 | 1,960,000,000 | 2,028,000,000 |
| Housing and community facilities | 403,000,000 | 113,000,000 | 38,000,000 |
| Education and general research | 76,000,000 | 77,000,000 | 387,000,000 |
| Agriculture and agricultural resources | 1,248,000,000 | 614,000,000 | 905,000,000 |
| Natural resources not primarily agricultural | 628,000,000 | 1,179,000,000 | 1,626,000,000 |
| Transportation and communication | 587,000,000 | 1,563,000,000 | 1,646,000,000 |
| Finance, commerce and industry | 237,000,000 | 372,000,000 | 190,000,000 |
| Labour | 120,000,000 | 97,000,000 | 116,000,000 |
| General government | 1,318,000,000 | 1,473,000,000 | 1,157,000,000 |
| Interest on the public debt | 4,958,000,000 | 5,200,000,000 | 5,250,000,000 |
| Refunds of receipts | 2,897,000,000 | 2,049,000,000 | 1,990,000,000 |
| Reserve for contingencies | — | 120,000,000 | 200,000,000 |
| Adjustment to daily treasury statement basis | 464,000,000 | — | — |
| otal budget expenditures | 42,505,000,000 | 37,728,000,000 | 39,669,000,000 |
| xcess of budget receipts | 754,000,000 | 7,482,000,000 | 4,808,000,000 |

apanese agriculture caused by extensive storms. It was further ointed out by the president that the obligations of the United tates in Europe would be increased because the United Kinglom could no longer pay the dollar costs of supplies needed or Germany.

Veterans' benefits and services comprised one of the few najor items of the budget to show a significant decline from 948 to 1949. As compared with the total of $6,632,000,000 or the 1948 fiscal year, the budget recommendations for 1949 mounted to $6,102,000,000. Essentially, the president exlained the reduction in expenditures in terms of reduced needs ather than as a limitation of the benefits to be available to eterans. He did recommend, however, that the Veterans' dministration be given authority to prevent the provision of training for avocational or leisure time activity at high cost to he government and without commensurate benefit to veterans." t was expected that college, school and job training would each a peak in fiscal 1948 with an average of 2,250,000 vetrans enrolled, while for fiscal 1949 the average enrolment vould decline to 1,730,000. In addition, the number of vetrans drawing unemployment and self-employment allowances vas expected to decline from 625,000 to 390,000. On the other and, various aspects of aids to veterans were expected to reuire increased expenditures. It was estimated that claimants or compensation and pension payments to veterans and to their ependents would increase slightly and that higher prices would equire greater expenditures for hospital construction and oprating expenses of medical services.

Under the general category of social welfare, health and ecurity, the president made broad recommendations, involving n increase in expenditures from $1,960,000,000 in 1948 to 2,028,000,000 in fiscal 1949. He recommended that coverage nder the old-age and survivors insurance program be extended to all gainful workers including agricultural and domestic employees, farmers and other self-employed persons. He asked for provision of a national system of health insurance and improved facilities for public health and medical care. With respect to unemployment compensation, the president suggested that coverage be extended to employees of small business and as many other groups as feasible and, in addition, requested that federal aid under public assistance programs be broadened to include general assistance and allotment of federal grants in order to relate them to the financial resources and needs of each state.

As the broadening of the social insurance schemes was coupled with recommendations for higher taxes, not only expenditures but receipts would increase. For the immediate future, the increases in payroll contributions would be larger than the increases in benefits, a situation which the president considered useful as an anti-inflation measure.

Budgeted outlays for housing and community facilities were reduced substantially in the 1949 budget to $38,000,000 from the previous year's figure of $113,000,000. The reduction came primarily in smaller outlays on war housing and veterans' reused housing, as well as from smaller obligations to be undertaken by the Reconstruction Finance corporation. On the other hand, the president proposed legislation on a long-range housing program and requested an appropriation of $40,000,000 for that purpose. This program was based on the belief that both private enterprise and local agencies require greater assistance from the government in order to provide adequate housing on a continuing basis for all segments of the population. The appropriation requested for the fiscal year 1949 was expected only to prepare the way for loans and grants at a later time for such programs as low-rent housing, urban redevelopment, farm housing and large-scale rental housing.

Under the general category of education and general research, the budget showed a sharp increase in federal expenditures. Whereas these amounted in 1948 to only $77,000,000, it was proposed that these outlays for 1949 be increased to $387,000,000. While there were minor increases in the existing programs relating to education and general research because of rising costs and the expansion of some activities already authorized by congress, the bulk of the increase was accounted for by new programs proposed by the president. The most important, quantitatively, was a proposal to provide grants to the states for the improvement and extension of elementary and secondary education. The other proposal concerned the creation of a national science foundation which had already been agreed to in principle by congress but not in a form which was acceptable to the president.

Although the budget message emphasized that agriculture was in the best financial condition in history, with both farm prices and farm income at record levels, it was anticipated that greater expenditures under the category of agriculture and agricultural resources would be required. The increase shown in the budget was from $614,000,000 in 1948 to $905,000,000 for the fiscal year 1949. According to the budget message, this change was principally the result of the erratic character of expenditures for the supply and purchase programs of the Commodity Credit corporation. Supplementary material was provided to show that the contract to purchase Cuban sugar largely accounted for net expenditures of $264,000,000 in the fiscal year 1947 and that the subsequent sale of this sugar was largely responsible for the net receipts that were expected for fiscal 1948. Since these net receipts would not recur in 1949, they made a substantial difference between the total expenditures shown for the two fiscal years.

In other respects, the president was expecting agricultural expenditures to be reduced. He proposed a change in legislation with respect to the parity formula and the level of price support for agricultural products which would effect a saving of $50,000,000, and also recommended a reduced scale of payments to farmers under the conservation and land use program. It was emphasized that the high level of agricultural prices would mean that only small cash outlays would be needed for the programs designed to support prices of agricultural products and regularize supplies. Small increases were requested for the Farmers Home administration and for the Rural Electrification administration, the activities of both of which had been drastically curtailed during World War II.

Table II.—*Government Receipts and Expenditures—Great Britain*

(£ millions)

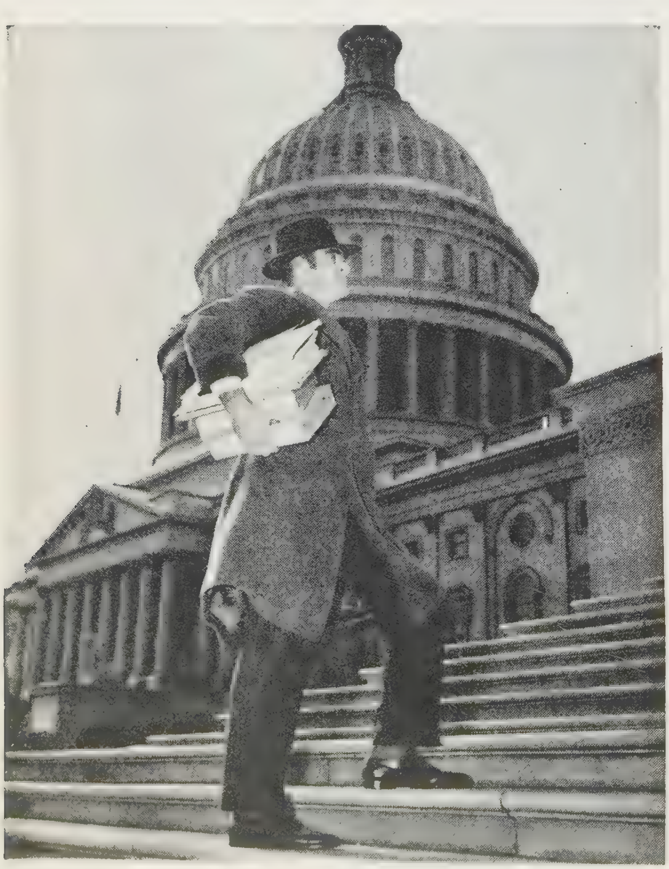
| Receipts | Actual receipts 1946-47 | Estimate for 1947-48 |
|---|---|---|
| Income tax | 1,156 | 1,150 |
| Surtax | 76 | 80 |
| Death duties | 148 | 155 |
| Stamps | 38 | 40 |
| Profits tax | 32 | 200 |
| Excess profits tax | 325 | |
| Other inland revenue | 1 | 1 |
| | 1,777 | 1,626 |
| Customs | 621 | 666 |
| Excise | 564 | 634 |
| | 1,184 | 1,300 |
| Motor duties | 49 | 50 |
| Total tax revenue | 3,010 | 2,976 |
| Sales of surplus war stores | 156 | 95 |
| Receipts for trading services | 59 | 55 |
| Wireless licences | 10 | 11 |
| Crown lands | 1 | 1 |
| Receipts from sundry loans | 27 | 21 |
| Miscellaneous | 78 | 270 |
| Total ordinary revenue | 3,341 | 3,429 |

| Expenditures | Exchequer issues 1946-47 | Esti 194 |
|---|---|---|
| Interest and management of national debt | 499 | |
| Payments to North Ireland exchequer | 20 | |
| National land fund | 50 | |
| Other consolidated fund services | 9 | |
| | 578 | |
| Supply services: | | |
| Defense votes* | 1,653 | |
| Civil votes (excluding ministry of supply [Defense]) | 1,652 | 1, |
| Revenue departments | — | |
| Total supply | 3,332 | 2, |
| Total ordinary expenditures | 3,910 | 3, |
| Self-balancing revenue and expenditure: | | |
| Post office | 131 | |
| E.P.T. refunds (part deducted for tax) | 151 | |

Slight discrepancies in totals are due to rounding figures.

*Including, in 1946–47, the whole expenditure charged on ministry of supply vote; but in 1947–48, excluding the civil portion of ministry's expenditure.

For the government's programs and services relating to natural resources other than agricultural, the budget showed an increase in expenditures of about $450,000,000 above the level of $1,179,000,000 estimated for fiscal 1948. The increased expenditures were concentrated in three governmental functions respecting natural resources. The largest of these, accounting for more than $200,000,000, was an increase to the Atomic Energy commission. The second was an increase requested for the flood control program, part of the civil functions of the army corps of engineers. Congress had previously provided for an acceleration of this program. The budget figure was stated as the amount required to carry forward projects under way in fiscal 1948.



COPIES of Pres. Truman's 1947 budget message being delivered to congress on Jan. 10 by Herbert Miller, record clerk of the White House

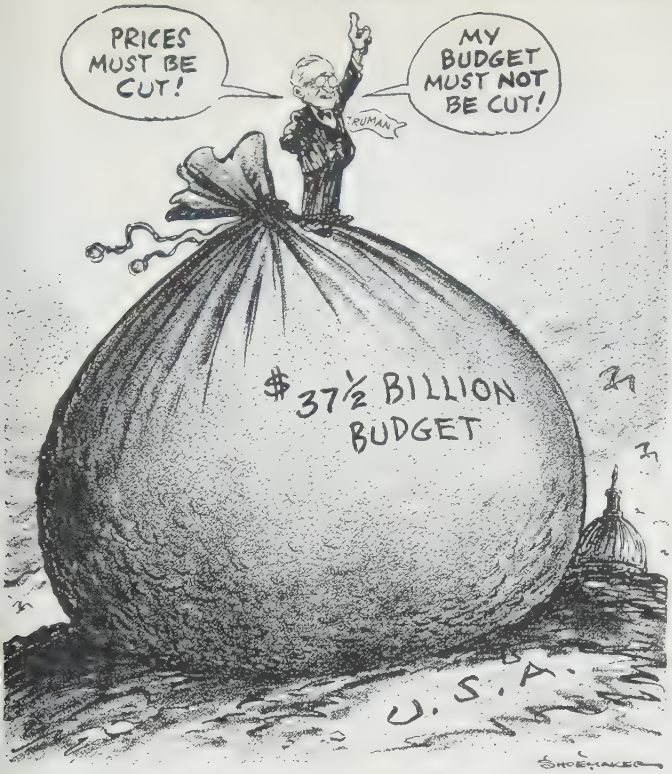
The third item was for the continuance of projects bei carried out by the bureau of reclamation, at a rate which wou yield irrigation and power benefits without undue delay.

In the field of transportation and communication, the crease requested was relatively small considering the magnitu of total expenditure and was requested in order to expand t activities of the Public Roads administration and the Ci Aeronautics administration. Offsetting decreases under this ge eral function were the result of lower construction activity f the coast guard and reduced activities of the maritime comm sion.

One of the few functional components of the budget to sh a substantial decline was finance, commerce and industry, which expenditures of $372,000,000 were to be reduced $190,000,000. This decline was in essence a bookkeeping ent since it arose primarily because of the payment in 1948 of w damage insurance profits to the miscellaneous receipts of t treasury. So far as the substantive items under this catego of expenditures were concerned, however, the trend was ge erally upward. The most important item concerned expend tures to finance proposed anti-inflation legislation. There w also a recommendation that funds be provided the departme of commerce to conduct a new census of business and oth surveys. A small increase was requested for various activiti connected with labour, largely designed to restore some of t reduction that was effected by congress in the preceding yea The expenses for general government operations were litt changed, apart from the costs of handling surplus proper disposal.

Despite the fact that there was a decrease in the public de in 1948 and a further decrease anticipated for fiscal 1949, was expected that interest on the public debt would contin to rise slightly. This was essentially caused by a shift in t composition of the debt away from the types of securiti carrying lower rates to securities carrying higher interest rate Other factors accounting for the increase in interest costs we the greater age of savings bonds carrying higher accrual rat of interest and the increase in short-term interest rates whic occurred during 1948.

As already noted, a decline in total budget receipts was anti ipated on the revenue side of the president's budget, from $45 210,000,000 in 1948 to $44,477,000,000 in fiscal 1949. Th president stated that the estimate of receipts assumed continu tion of a high level of business activity and of national incom and, furthermore, assumed that any further inflation would held in check by an effective anti-inflation program. Hence, th decline in budget receipts was not to be due to any significa change in tax revenues but resulted principally because of a


PRICES MUST BE CUT!
MY BUDGET MUST NOT BE CUT!
TRUMAN
$37½ BILLION BUDGET
U.S.A.
SHOEMAKER

"DOUBLE TALK" was what Pres. Truman's 1947 policy for domestic finances sounded like to Shoemaker of the *Chicago Daily News*

estimated reduction of $2,000,000,000 in miscellaneous receipts from the sales of surplus property. The question of a general reduction in taxation was dismissed on the grounds that a substantial budget surplus was one of the most effective weapons in fighting inflation. The president had recommended that the personal income tax be reduced by $40 for each taxpayer and for each of his dependents, and he repeated in the budget message his belief that some readjustment was required to afford relief to many families suffering hardship from the tax structure. However, the proposed reduction in the personal income tax was to be offset by an increase in the corporation income tax or by the imposition of an excess profits tax so that government revenues would be unchanged.

Since the revenues of the government were expected to be greater than its expenditures, it was anticipated that a sizable surplus would be available for a further reduction of the public debt. There had been a small surplus in the fiscal year 1947, and for fiscal 1948 a substantial surplus was estimated, amounting to $7,482,000,000. For the following fiscal year, the budget surplus was estimated at $4,808,000,000. The president stated that, as long as employment and income were at record levels, full opportunity should be taken to apply this surplus to debt retirement.

(*See* also DEBT, NATIONAL; INCOME AND PRODUCT, U.S.; TAXATION; UNITED STATES.)

**Great Britain.**—The budget of Great Britain for the fiscal year 1947-48 showed little change on the revenue side and a further decline on the expenditure side. Revenues were expected to total £3,429,000,000, as compared with £3,341,000,000 in fiscal 1946–47. Some minor changes in taxes were proposed which were expected to raise the revenue total to £3,451,000,000.

On the expenditure side of the budget, the only significant change was a further marked cut in outlays for national defense. This item had already been reduced in the fiscal year 1946–47 to £1,653,000,000 as against £4,410,000,000 during the last war year. Estimated expenditures were to be cut to £899,000,000. If account was taken of the proposed tax changes, the budget showed a surplus of approximately £270,000,000. (M. GT.)

**Buhl Foundation:** *see* SOCIETIES AND FOUNDATIONS.

## Building and Construction Industry.

Steadily rising costs and several acute materials shortages raised havoc with the construction industry in 1947. In spite of these factors the volume of residential and industrial construction increased, but commercial construction declined. According to the bureau of labour statistics there were 89,300 more home units started in the first nine months of 1947 than in the same period in 1946, bringing the total started in this period to 615,000. Greatest progress was made in home completions which reached 576,000, doubling those in the first nine months of 1946. Whereas single family or row houses started in 1946 took from seven to nine months to complete, most houses of this type were completed in four or five months in 1947.

It was estimated that by the end of October, $11,938,000,000 had been spent for construction of all types, including public and private and new and major repair work. This was 25.8% above expenditures in the first ten months of 1946. But this dollar volume rise reflected spiralling construction costs and therefore could not be interpreted as a proportionate increase in amount of building.

The comparatively large industrial program consisted in the first six months chiefly of completions of contracts let in 1946 when materials supply seemed to be easing and the full impact of uncontrolled costs had not been felt. New contracts did not materialize in sufficient volume to bring about the usual seasonal rise in industrial expenditures normally occurring between August and September, but industrial starts rose in the fall. Public expenditure flowed mainly into new schools, highways, flood control and irrigation works.

Increases in the volume of home building did not follow the normal seasonal curves. There was a marked slump in the spring, usually the season for increased starts, and there was a marked increase in the late summer and early fall when the number of starts usually decline. The spring slump was occasioned by a buyers' panic because of higher prices. In New York city, home building shrank from 1,120 new dwelling units

*Estimated Construction Expenditures, First Ten Months of 1946 and 1947*

| Type of Construction | Expenditures (in millions) first ten months 1947* | 1946 | Percentage of change from 1946 to 1947 first ten months |
|---|---|---|---|
| Total construction | $11,938 | $9,489 | +25.8 |
| New construction† | 10,275 | 7,998 | +28.5 |
| Private construction | 7,871 | 6,283 | +25.3 |
| Residential building (nonfarm) | 3,779 | 2,528 | +49.5 |
| Nonresidential building (nonfarm) | 2,602 | 2,746 | − 5.2 |
| Industrial | 1,436 | 1,352 | + 6.2 |
| Commercial | 692 | 948 | −27.0 |
| All other | 474 | 446 | + 6.3 |
| Farm construction | 410 | 320 | +28.1 |
| Public utilities | 1,080 | 689 | +56.7 |
| Public construction | 2,404 | 1,715 | +40.2 |
| Residential building | 163 | 268 | −39.2 |
| Nonresidential building (except military and naval facilities) | 402 | 269 | +49.4 |
| Industrial‡ | 25 | 72 | −65.3 |
| All other | 377 | 197 | +91.4 |
| Military and naval facilities | 162 | 155 | + 4.5 |
| Highways | 953 | 573 | +66.3 |
| Sewer and water | 250 | 156 | +60.3 |
| Conservation and development | 307 | 194 | +58.2 |
| All other public | 167 | 100 | +67.0 |
| Minor building repairs§ | 1,663 | 1,491 | +11.5 |
| Residential building (nonfarm) | 531 | 443 | +19.9 |
| Nonresidential building (nonfarm) | 605 | 630 | − 4.0 |
| Farm | 527 | 418 | +26.1 |

*Preliminary.

†Estimates of new construction were prepared jointly by the Bureau of Labor Statistics and the Office of Foreign and Domestic Commerce, and include expenditures for new construction, major additions, and alterations.

‡Excludes expenditures to construct facilities used in atomic energy projects.

§Covers privately financed structural repairs of the type for which building permits are generally required, and also maintenance work on farms.

Source: *Construction*, Series release Nov. 8, 1947, U.S. Dept. of Labor, Bureau of Labor Statistics.

started in March to 630 started in April. (April 1946 had 2,650 starts in the same area.)

Rumours that selling prices would soon drop were halted by the fact that construction costs continued to rise. Prospective buyers saw no actual prospect of lower prices and feared constantly rising prices so by July there was a new wave of buying which continued through the fall. The 85,700 new permanent homes started in July broke records of 20 years' standing and approached the 1925 all-time high. The new buying wave encouraged builders to make an unusual number of fall starts. Private builders marked a high never before reached in September by starting at least 88,000 new permanent homes.

It was estimated that 825,000 new dwelling units were started in 1947 in areas where building permits recorded construction. It was also estimated that a large number of units were built in peripheral districts surrounding urban communities where building permits were not required. Many of these homes, built by individuals for their own use (often by themselves with the assistance of family and friends) were stopped during construction because of high costs which exceeded the amount of money the family could afford or because of material shortages.

The greater number of the estimated 825,000 units started were in suburban areas, small towns and villages where land costs were more favourable.

By October there were four acute material shortages—nails, millwork, gypsum-lath and soil pipe. These shortages slowed construction and their continuance threatened stoppages in many areas. An active "gray market" evidenced itself. Because price controls had been repealed and no law was violated, "gray" was used instead of "black" to describe this market where nails and millwork could be bought at extortionately high prices from merchants and salesmen and others who had previously not sold them at all or to any great extent. Nails could be bought from concerns which did not previously handle nails, but traditional dealers could not get them. The regular price for nails in October was just under $5.00 a keg; the gray market price ranged from $7.70 to $14 a keg. Some builders were using aluminum nails at 60 cents a pound. The following explanations were given for the gray market in nails:

1. Many manufacturers of nails, in their endeavour to secure scrap steel, paid for it in nails and not in cash. Then these nails found their way into the gray market.

2. Many prefabricators who had to curtail or close down were putting products which they were holding in warehouses upon the market at high prices.

3. Steel manufacturers were not producing the nails that the market required because nails were not a profitable item of production.

Rough shop lumber prices mounted. While some old-line lumber producers held them in line, others skyrocketed them. One company sold No. 3 shop and better kiln-dried ponderosa pine at $71.50 per 1,000 delivered, while another sold it at $130 a thousand F.O.B. mill, which meant that when it was kiln-dried and delivered the price was about $172 per 1,000.

Retail lumber dealers were short of millwork because millwork manufacturers had to curtail production for lack of lumber. Many attributed the millwork lumber shortage to lack of boxcar facilities to deliver the lumber to the mills.

The gypsum-lath shortage was caused by shortages of paper and of plant facilities. Fuller production was anticipated for 1948 because two new plants were completed in 1947.

Material shortages, however, were not the only cause of construction difficulty nor the only price booster. There was a general rise. Material prices had risen 17% from Oct. 1946 when OPA controls were lifted to Dec. 1946. From Dec. 1946 to April 1947 they rose another 13%. In his message to congress on the domestic economy on Nov. 17, President Harry Truman stated that, "Since the middle of 1946 . . . buildi materials have gone up 42%."

Wage rates of union workers in the building trades advanc 15% in the year ending July 1, 1947, and continued to ri Employment in the construction industry rose to about 1,92 000 in September, a rise of 10% over Sept. 1946.

Labour difficulties were emphasized in the press. On Feb. 1947, President Truman announced a no-strike, no-locko agreement between the Associated Contractors of America a the Building and Construction Trades department of the Ame ican Federation of Labor for settling labour disputes in t home, highway, heavy and specialized construction fields. Th agreement probably avoided some strikes but it was not entire successful. Fear of repeated wage rises caused contractors pad bids for contemplated public construction, making cos prohibitive to public agencies. In an effort to remove this fa tor of uncertainty the mayor of New York city started negoti tions to obtain a two-and-one-half year wage stabilization agre ment in the New York building industry. Negotiations starte early in the year were reported "progressing" in mid-Novembe Builders complained more bitterly of the effect of labour slo downs than of high hourly rates.

Apprentice-training programs increased 26% with 2,608 trai ing plans in action in September and 103,640 apprentices training.

There were more vocal protests than usual against restri tive building codes which forced unnecessary expenditures, b not many local codes were changed.

The National Electrical Contractors association and the I ternational Brotherhood of Electrical Workers set up the Na tional Electrical Benefit board to operate the first industry-wid pension plan in the building field to which employers woul contribute.

In May congress eased the space restrictions on new housin from 1,500 to 2,000 sq.ft. In June congress passed the Wolco decontrol bill which removed all construction restrictions. Hav ing failed to pass any new legislation to encourage new con struction to alleviate the acute housing situation, congres authorized a 14-member joint senate-house committee to in vestigate housing. Starting in September, the committee unde the chairmanship of Representative Ralph Gamble of Ne York and the vice-chairmanship of Senator Joseph R. McCarth of Wisconsin held hearings in every section of the country

THE CALIFORNIA CABIN, a small prefabricated house popular in the south western U.S. during 1947. The basic three-room unit consisted of six standar ized sections and could be completed by one man in six days. Most wall spac was window

REFABRICATED concrete parts of Airey houses, at a supply yard in Essex,
ngland; 20,000 of these dwellings, which came in two styles, were on gov-
rnment order in 1947, to ease the British housing shortage

hairman Gamble listed as "primary questions" confronting the
ommittee the following: cost factors and cost reduction in
ousing; taxation of real estate; effect of existing housing legis-
ation on the shortage and high cost of housing; slum clearance;
isabled veteran housing; organization of enterprise in housing;
nultiple-unit housing construction; building codes; capital sup-
ly and financing of housing; distribution and stocking of build-
g materials; rural housing; and effects of purchaser pressure
or housing.

Representative Ralph W. Gwinn of New York headed the
ouse labour subcommittee investigating malpractice charges
gainst unions and other segments of the building industry.
his committee also circuited the country, holding hearings.

These various committees were expected to report and to
nake recommendations to congress early in 1948. (*See* also
usiness Review; Housing; United States.)

Bibliography.—Reports of the Bureau of Labor Statistics, Housing
nd Home Finance Agency, the National Committee on Housing; *The
rchitectural Forum.* (D. Rn.)

**Great Britain.**—The cold weather of the first three months
f 1947 restricted work very seriously and disposed at once of
ne setting of ambitious targets. The long dry summer and fine
utumn, however, enabled good progress to be made with the
rge numbers of houses started in the previous year and the
nonthly totals of houses completed rose steadily from 8,975 in
Iarch to 17,608 in September. Attention continued to be
ocused on the building of houses, although nearly half the
bour force of the industry continued to be engaged on indus-
ial building whose progress was, in the main, comparable to
nat of housing.

Output of individual operatives remained a source of com-
aint for those responsible for production. Questions of wages and incentives were earnestly debated throughout the year in the joint industrial council of the industry until, in October, it was announced that an increase of 3*d.* per hour had been agreed and a return to a payment-by-results scheme arranged. It was, however, by no means clear that a method had been found of overcoming the many obstacles to the satisfactory working of such a scheme.

Employers in London adopted a training-within-industry scheme to assist with the training of foremen; and, at all levels in the industry, increasing interest was shown in this work.

Supplies of materials continued to be very uncertain. The loss of production during February and March affected building materials very seriously with the result that, when building could start again, it was hampered by shortage of supplies. Steel for large buildings was scarce and it was not unknown for dollars to be spent in importing steel for high priority building.

Finally, the arrangements to meet the economic crisis indicated that the building labour force would be reduced and the building program lightened. The end of the year, therefore, found the outlook less certain than in the immediate postwar period, though there were many who felt that there was gain as well as loss in spreading the expansion of the industry over a longer period. (D. A. G. R.)

**Bulganin, Nikolai Alexandrovich** (1896– ), soviet politician and army officer, was a textile worker before the revolution. At the start of World War II he was chairman of the Moscow city soviet and was made a member of the city's military council after the German invasion.

Thereafter, his rise in the soviet state hierarchy was rapid. Enjoying the confidence of Premier Joseph Stalin, he was made a lieutenant general in the red army in 1942. Later he was promoted to an army general, and in late 1944 he was given the post of vice-commissar of defense. On Nov. 22 of that year, he was also made a member of the Soviet Union's 18-man defense council.

Shortly after taking his new post, Bulganin was dispatched to Poland to co-ordinate red army strategy in that theatre. In this post, he was said to have demonstrated his competence as a military "trouble-shooter," and in 1946, after the war, he was made vice-minister of the armed forces and was also elected to the politburo, the "super-cabinet" generally credited with running the soviet state machinery.

On March 3, 1947, Stalin stepped down as minister of the armed forces because of "the excessive pressure of his main work" and named Bulganin as his successor; two days later, Bulganin was also made a deputy premier.

**Bulgaria.** A republic in the eastern part of the Balkan peninsula. Area: 42,796 sq.mi.; pop. (census 1946): 7,022,206. Chief towns (pop. 1946): Sofia (cap. 434,888); Philippopolis (Plovdiv) (125,440); Varna 77,792; Russé (Ruschuk) (53,420); Burgas (43,684); Stara Zagora (37,057); Sliven (35,553). Religion: mainly Greek Orthodox, with about 800,000 Moslems. President of the republic: Mincho Neychev; prime minister: Georgi Dimitrov.

**History.**—A two-year plan for the Bulgarian economy was introduced at the January session of the *Sobranie*. Special emphasis was laid on the electrification schemes for the country. During the two-year period 12 thermoelectric and 16 hydroelectric centres and 16 transformer subcentres were to be set up. A dam was opened in March at Koprinka which would feed three power stations totalling 50,000,000 kw.hr., and in the August trade treaty with the U.S.S.R. it was stated that the latter would deliver one power station to Bulgaria. The two-year plan paid great attention to agriculture. By the end of 1948 Bulgaria was to have 50 machine tractor stations, and in the same period the number of labour co-operatives (voluntary collective farms) was to be doubled.

The food situation was difficult, a result of the heavy drought of 1946. Bread rations were reduced in January, March and June. In April price reductions of industrial goods were decreed, varying from 10% to 30%, doubtless in the hope of giving the peasants a further incentive to part with their produce. In March all bank notes over the value of 200 leva had to be handed in. The governor of the National bank put forward a claim to examine foreign missions' accounts. Bulgarian foreign trade during the year was principally with the U.S.S.R. which in exchange for tobacco and raw materials supplied some industrial equipment and "technical assistance." Prices were as usual kept secret.

On June 6 Nikolai Petkov, president of the Agrarian party, was arrested and charged with "conspiring with subversive foreign and domestic elements to overthrow the existing government." On June 11 the U.S. government issued the first of a series of protests, pointing out that Petkov "has evoked deep sympathy in the United States because he has openly fought for the acceptance and perpetuation of civil liberties in his own country—principles that were agreed to at Yalta, that underlie the terms of the armistice with Bulgaria, and that Article II of the peace treaty signed with Bulgaria was designed to protect and insure." Next day 23 deputies of the Agrarian party, charged with being "tools" of their imprisoned leader, were forced to resign from the national assembly.

After a nominal trial in the soviet manner, Petkov was found guilty of conspiracy and sentenced to death on Aug. 16. Both the U.S. and British governments protested to Lt. Gen. Alexander Cherepanov, acting chairman of the Allied (Soviet) Control commission, terming the trial a "gross miscarriage of
tice." Gen. Cherepanov replied that he was powerless to in
vene, since the trial was a "purely internal Bulgarian aff
On Aug. 23 the U.S. ambassador to Moscow, W. Bedell Sm
delivered a note to the soviet government requesting immed
consultations among the three Yalta powers with a view
staying Petkov's execution. The soviet reply reiterated Ch
panov's position and expressed "full respect and confide
toward the Bulgarian court set up by the Bulgarian people
guardian of justice." Great Britain supported the United St
in rejecting the soviet reply. Petkov was hanged on Sept.
At the request of the communists, the national assembly
meanwhile dissolved the Agrarian party and prohibited its
deputies from engaging in further political activity. The l
opposition in Bulgaria was thus reduced to the impotent So
Democratic party, represented by 8 deputies in an assem
totalling 465. Both the socialist and Agrarian newspapers
been suppressed the preceding June.

Two weeks after the execution of Petkov the trial of G
Kyril Stanchev began. Stanchev had played a prominent par
organizing the revolution of Sept. 9, 1944, which caused B
garia to break with Germany, and had commanded with disti
tion one of the Bulgarian armies that had subsequently fou
with the Allies. Stanchev was tried for conspiracy, and
ceived a sentence of life imprisonment.

The British government recognized the Bulgarian governm
on Feb. 13, and the United States resumed full diplomatic r
tions with Bulgaria on Oct. 1. On Aug. 25 the Bulgarian par
ment ratified the peace treaty. Bulgarian spokesmen, howev
repeatedly stated that they had not renounced the claim to p
of the Aegean coast. Bulgaria's relations with Greece were u
formly bad, as shown by the whole course of the U.N. inve
gations on Greece's northern frontier. With Yugoslavia re
tions were good; in August Dimitrov visited Marshal Tito, a
a mutual assistance pact was drafted between the two countr
This provided for abolition of visas, co-ordination of rail a
other communications and of electrification policy, and the
nunciation on the part of Yugoslavia of $25,000,000 worth
reparations. The pact also provided for "agreed activity" w

BULGARIAN CITIZENS turning in royalist currency for new government b
notes, which were placed in circulation on March 10, 1947

egard to "the frequent frontier provocations of Greek monrcho-fascists," and "a Danube river regime which concerns only iparian Danubian states." On Nov. 29, when Tito revisited Dimitrov in Bulgaria, the treaty of mutual assistance was signed. On Dec. 14, during a visit to Bulgaria of the Albanian prime minister, a similar treaty was signed by Dimitrov and Enver Hoxha. Dimitrov announced that Bulgaria would conclude mutual assistance treaties also with Rumania, Hungary, Czecholovakia and Poland.

On Dec. 9, when the new constitution came into force, Mincho Neychev was elected president of the republic and Vasil Kolarov, the provisional president, was appointed foreign minister in the new Dimitrov cabinet. (H. S-W.; L. We.)

**Education.**—Elementary and secondary (1940–41): kindergarten schools 256, scholars 12,465; primary schools 5,568, scholars 662,952; secondary schools 2,260, scholars 376,091; vocational schools 421, scholars 50,803; special schools 16, scholars 2,940. Higher education (1942): superior institutions 12, scholars 15,576; University of Sofia, teaching staff 430, students 9,744.

**Finance.**—Revenue (est. 1946) 42,910,000,000 leva. Money and note circulation (Feb. 1947) 44,457,000,000 leva; bank deposits (1947) 109,500,000,000 leva. No current rate of exchange.

**Trade and Communication.**—Foreign trade: imports (1946) 17,514,000,000 leva; imports (Jan.–June 1947) 7,581,000,000 leva; exports (1946) 14,942,000,000 leva; exports (Jan.–June 1947) 9,184,000,000 leva. Roads (1945) 13,870 mi.; railways (1945) 2,402 mi.; radio sets (1945) 195,645; telephones (1945) 38,842.

**Industrial and Agricultural Production.**—Production (July 1946–June 1947) in short tons: coal 1,096,106; iron and steel 23,322; cotton 18,105. Harvest (1946) in short tons: wheat 1,638,389; rye 159,331; barley 1,799,388; oats 101,235; maize 492,828; tobacco 41,837; rice 11,255; sugar beets 243,026; sweet sorghum 56,615; soya 91,346; cotton (seed) 10,624, (yarn) 4,517; hemp (seed) 2,156, (yarn) 3,207; flax (seed) 374, (yarn) 488; beans 74,074; potatoes 52,082; lucerne 214,207; pimentos 143,313; tomatoes 89,797. Harvest (1947), preliminary estimates: wheat and rye 1,322,800; other grain crops 941,800. Industrial production index (1947) 135 (1937=100). Unemployed (May 1947) 23,200.

**Bureau of Standards, National:** *see* Standards, National Bureau of.

**Burma.** A British dependency, lying on the eastern side of the Bay of Bengal between India, China and Siam, which from Jan. 4, 1948, was to be an independent state, the Union of Burma. Area: 261,610 sq.mi.; pop. (est. 1941): 16,823,798. Chief cities (1941): Rangoon (cap. 500,800); Mandalay (163,527); Moulmein (70,000). Languages: Burmese and English; religion: Buddhist (85%). Provisional president, Sao Shwe Thaik, the Shan chief of Yawnghwe; prime minister, Thakin Nu.

**History.**—In Dec. 1946 the British government invited Burmese political leaders to London and a delegation of six, headed by U Aung San, carried on discussions in London in Jan. 1947. An agreement, which U Saw (Myochit party) and Thakin Ba Sein (Dobama Asi-Ayon party) refused to sign, was reached that the interim government should be conducted generally in the same way as the interim government of India and that a constituent assembly should be elected directly. At the elections held in April the Anti-Fascist People's Freedom league had a sweeping majority; several minor parties boycotted the election. In February a conference of frontier peoples was held at Panglong, in the Southern Shan States, and an agreement was reached on measures for co-operation between the Burmese and the frontier peoples.

The constituent assembly began its deliberations in June and adopted a resolution that the constitution should be that of an independent sovereign republic to be known as the Union of Burma. A goodwill mission headed by Thakin Nu went to London in June and their conversations with the British government turned principally on the arrangements for the transfer of power and the future relations between Burma and Great Britain. The British government agreed that the interim government should become the provisional government of Burma until the transfer should be completed and that the senior member of the cabinet should be designated prime minister and the other members ministers. It was also agreed that a treaty should be drawn up and that missions should be exchanged to deal with defense and other matters. On July 19 seven members of the executive council, including U Aung San, were assassinated in the council chamber. A new government was at once formed headed by Thakin Nu, president of the constituent assembly. Former Premier U Saw and many others were arrested; the country remained quiet.

The constituent assembly held its second session in July and completed its work in September. Thakin Nu paid another visit to London and signed a treaty on Oct. 17. The Union of Burma was to come into being on Jan. 4, 1948, on the transfer of power by the British in accordance with the 1947 act providing for the independence of Burma.

The union would have a president, a prime minister and other ministers, a chamber of deputies and a chamber of nationalities. The Shan state, the Kachin state and the Karenni state would form constituent units of the union. There would also be Karen and Chin affairs councils. The constituent units would be autonomous in certain spheres of government and they and the councils would have ministers in the union government.

The president would be elected by the two chambers in joint session. The president would appoint the prime minister on the nomination of the chamber of deputies. The prime minister and the members of his government would depend on a majority in the chamber of deputies. The life of the chamber of deputies, of probably about 250 members, would be four years unless dissolved earlier by the president. The chamber of nationalities was to have 125 members. Rights of equality, freedom, religion, culture, and education, rights to constitutional remedies and economic rights were written into the constitution. It was also provided that the state should direct its policy toward operation of all public utility undertakings and exploitation of all natural resources in the union by itself or local bodies or by peoples' co-operative organizations.

At the end of 1947 Burma was still suffering seriously from the physical results of World War II, and recovery was hampered by lawlessness in various areas—figures for murder, dacoity and robbery were high—and by strikes. The cost of living, though falling, was still at an index figure of 300 to 400 (1941 = 100) for food, clothing and miscellaneous items. On the other hand, roads and transport were improving, exports of rice and timber were rising steadily, and ministers spoke confidently of a speedy return to normal. (J. Ce.)

**Education.**—In 1940, total number of institutions 27,015, scholars 851,922; primary schools 5,679, scholars 384,060; middle 1,018, scholars 139,190; high 399, scholars 94,353; special 1,172, scholars 19,190; unrecognized institutions 18,745, scholars 212,663; university (Rangoon) 2,365 students; art college (Mandalay) 101.

**Finance.**—Budget (actual 1946–47): revenue Rs.283,840,700, expenditure Rs.429,207,500; (est. 1947–48): revenue Rs.319,403,000, expenditure Rs.356,357,000. Exchange rate: rupee (Rs.1) = 1*s.* 6*d.* (30.155 cents U.S.); one crore = 10,000,000 rupees; one lakh = 100,000 rupees.

**Trade and Communication.**—Overseas trade in merchandise (April 1940–March 1941): imports £22,162,500; exports, including re-exports, £41,535,000. Communication (1940): roads for motor traffic, all weather, 6,811 mi.; seasonal 5,661 mi.; railways 2,060 mi.; inland waterways (approx.) 1,300 mi.

**Agriculture and Mineral Production.**—Production (1940–41) (in short tons): rice 6,720,000; groundnuts 179,200; sesamum seed 80,640; cotton 14,560; tobacco 53,435; teak 491,486. Minerals (1939): petroleum 331,069,920 U.S. gal.; (in short tons) tin concentrates 6,093; tungsten concentrates 4,863; tin tungsten concentrates 6,264; refined lead 85,120; antimonial lead 1,322; zinc concentrates 66,640; copper matte 8,887; nickel speiss 3,244; silver 6,175,000 troy oz.; gold 1,206 troy oz. Estimates for 1946–47 (in short tons): Rice (in husk) 4,357,600; groundnuts (in shell) 112,000; sesamum 34,000; cotton (lint) 4,100. Mineral production was still very small owing to destruction caused by the war.

**Buses:** *see* Automobile Industry; Electric Transportation; Motor Transportation.

**Business Review.** The year 1947 in the United States witnessed marked business expansion, an unprecedentedly high level of employment, rapidly rising prices and widespread antilabour feeling. Progress was made toward the better adjustment of the various sectors of the economy, and many of the retarding and disruptive factors of 1946 were less pronounced. There were fewer production delays occasioned by short supplies of strategic materials and parts, and a marked reduction in work stoppages caused by labour troubles and strikes. Most of the remaining wartime controls over the economy were removed, and new curbs were put on labour. The tempo of business activity was accelerated, reflecting continued high consumer demand in spite of rapidly advancing prices. Bank debits, an indicator of business activity, as reported by the board of governors of the federal reserve system, for the first 10 months of 1947 were 14% above the same period in 1946, and 29% above 1944.

In spite of the many tangible signs of returning business normality and peacetime prosperity, however, the year was characterized by surprise at the continued high level of business activity, uneasiness as to future prospects, and an emerging fear of inflation, which fear became a dominant concern during the second half of the year as the price rise gained momentum, bank loans expanded, consumer credit mounted, and the Marshall plan for aid to Europe approached realization. Reflecting this concern, President Truman late in the year urged the congress to concern itself with anti-inflation legislation, in effect, to re-establish some economic controls. Among the controls which the president strongly urged were: regulation of consumer and bank credit, and the distribution of commodities basically affecting the cost of living or industrial production; extension and strengthening of rent control; use on a selective basis of rationing and price control for essential cost of living items and essential industrial products; extension of authority over exports and transportation and continuation of the grain conservation program of the department of agriculture. On Dec. 9 the congress passed its own version of an anti-inflation measure, which extended the controls over exports and transportation and continued the grain conservation program, but for the rest, recommended a system of voluntary controls.

**Commodity Prices.**—Prices, both wholesale and retail, continued to rise throughout 1947 with only minor interruptions. The bureau of labour statistics index of wholesale commodity prices, other than foods and farm products, which stood at 105.6 in June 1946 rose to 124.7 by Dec. 1946, and stood at 137.3 by Aug. 30, 1947. Wholesale food prices which stood at 112.9 in June 1946 rose to 160.1 by Dec. 1946 and to 172.1 by Aug. 30, 1947. The index of farm products at wholesale rose from 140.1 to 168.1 between June and Dec. 1946 and by Aug. 30, 1947, had reached 181.7. For the year 1947, wholesale prices of commodities other than farm and food products averaged 23% above those of 1946, 37% above 1944, and 66% above 1939.

Retail prices followed wholesale prices upward. The consumers' price index of the bureau of labour statistics rose fr 133.3 to 153.3 between June and Dec. 1946 and by Aug. 1 had reached 160.3. Increases in food, clothing and house f nishings prices accounted for the bulk of the rise. The f index rose from 145.6 to 185.9 between June and Dec. 1946 a by Aug. 10, 1947 had climbed to 196.5. The rise in cloth prices, while less spectacular, was nevertheless substantial. T clothing price index rose from 157.2 to 176.5 between June a Dec. 1946 and to 185.9 by Aug. 30, 1947.

Factors on the demand side contributing to the very ra rise in prices once price controls were removed were (1) large volume of accumulated consumer demand, accompan by a large and widely distributed volume of purchasing pov arising from the high level of operations; (2) expansion in c sumer credit; (3) resumption of inventory accumulation, es cially at the distributive level; (4) European relief and rec struction requirements, reflected in the tremendous increase exports; and (5) on the supply side, the slowness in the upwa trend in industrial production during 1947. (*See* also Pr Administration, Office of; Prices.)

Of all the major wartime price controls, rent control was t only one which remained in 1947, but by the middle of 19 it, too, had been relaxed somewhat. The act passed by c gress in late June 1947 provided for the extension of fede control of residential rents until March 1, 1948, and placed t administration of the act in the office of the housing expedit This act removed controls from hotels and tourist accommo tions, newly-built housing commenced on or after Feb. 1, 19 and from all dwellings which at no time during the period F 1, 1945, to Jan. 31, 1947, inclusive, were rented as housi accommodations. This new rent law permitted rents to be creased 15% above the existing maximum, providing the lar lord and tenant mutually agreed on a lease extending throu Dec. 1948.

The act also provided for local advisory boards with auth ity to increase rents, or order decontrol on an area basis, su ject to revocation within 30 days by the housing expedit Evictions were made subject to state laws. The act also moved all controls over building materials and constructi except over the use of materials for amusement or recreatio purposes. The continuation of rent control was directly relat to the short supply of dwelling units, and the slowness wi which the construction industry was building new dwelling uni

Although residential construction was higher in 1947 than 1946, it lagged far behind the demand for new houses. (*S* also Building and Construction Industry; Housing.)

**National Income.**—The growth in U.S. national income r

"STILL IN SESSION," a cartoon by Illingworth in the *Daily Mail* (London reflecting the gloomy crisis involving shortages, strikes and other problem shadowing both nationalized and private industries in Great Britain througho 1947 ected the high level of business and industrial activity, and e growth in disposable personal income accounts, in part, for e pressure on prices. During the first quarter of 1947, national come was being produced at the annual rate of $197,600,000,00; during the second quarter at the rate of $200,100,000,000. isposable personal income after federal, state and local taxes, uring the first quarter of 1947, was at the rate of almost 170,000,000,000 per year, and by the third quarter it was at e rate of $178,700,000,000. Personal consumption expendiures were at the rate of $166,000,000,000 per year during the ird quarter, and personal savings had dropped to $12,700,00,000. (*See* INCOME AND PRODUCT, U.S.)

**Industrial Production.**—Industrial production continued to pand throughout 1947, but the rate of expansion was low, in ew of the relative freedom, as compared with 1946, from rikes, the more adequate supply and flow of raw materials and arts, the increase in foreign demand and the large effective nsumer demand. The final removal of price controls, except n rents, late in 1946 was not followed by further rapid rise in dustrial production in 1947 from the high levels reached by e end of 1946. In point of fact, the expansion in the physical olume of industrial production during 1946, while price con-ols remained, was far greater than in 1947 after price con-ols had been lifted. During the first 10 months of 1946, there as a gain of 28 points in the federal reserve board's adjusted dex, and even after a November-December drop, there was a ain of 24 points for the year, from 156 to 180. In Jan. 1947, e index rose to 184 and hovered around 185 through August, sing to 190 in September and to 192 in October. Both durable d the nondurable goods industries slumped after the first uarter rise in 1947, the nondurable decline beginning in March, d the durable in April. By Sept. 1947, the nondurable goods dex stood at 171, 5 points below January, and the durable ods index stood at 216, also 5 points below Jan. 1947. All of e durable goods industries, except iron and steel, were producing no more or less in Sept. 1947 than they were producing January, and the increase in the iron and steel production dex was only 3 points, from 192 in January to 195 in Septemer. The lumber products and the stone, clay and glass prod-cts industries maintained a fairly constant level of production uring the first three quarters of 1947, slightly above the level ey had reached by the end of 1946. The machinery and the ansportation equipment industries fell below their first quarter ghs during both the second and third quarters of 1947. Of ten ajor nondurable goods industry groups, only four expanded roduction during the first three quarters of 1947—leather and ather products, tobacco products, printing and publishing and etroleum and coal products. Production in the chemical prod-cts industries and in the paper products industries was fairly onstant throughout the first three quarters of 1947, at a level ightly higher than that reached by the end of 1946. Produc-on declined in the textiles, manufactured goods products, alcoolic beverages and rubber industries during the first three arters of 1947, with the most marked decline occurring in the xtiles and the rubber products industries; the seasonably adsted textiles index dropped from 172 in January to 158 in eptember; the rubber products index, from 247 in January to 2 in September. (*See* also articles on separate industries.)

**Consumer Credit.**—The last wartime control on consumer edit under regulation W, administered by the Federal Reserve oard, expired on Nov. 1, 1947, in accordance with the resoluon of congress approved on Aug. 8, 1947. The extensive sysm of consumer credit control embodied in regulation W was troduced in Sept. 1941 as part of a program to control inflaonary pressures on prices as consumer's goods became scarcer. ollowing the end of the war, there was some relaxation in the extensive system of consumer credit controls embodied in regulation W. Until Nov. 1, 1947, however, a major part of the system of controls was retained by continuing the controls on instalment credit which prescribed minimum down payments and repayment terms. This was considered necessary because of the continued scarcity of the types of goods for the purchase of which instalment credit is primarily used, and, also, because of the general pressure on prices that was not removed by the ending of the war. In spite of the various restrictions on consumer credit, however, and the great increase in personal spendable incomes, the volume of consumer credit had expanded steadily throughout 1946 and 1947. By the end of Sept. 1947, one month before the lifting of the final restriction on instalment credit, the amount of consumer credit outstanding had risen to $11,400,000,000—an expansion of $6,600,000,000 from the wartime low in 1944 and $1,500,000,000 higher than the prewar peak in 1941.

RETAIL MERCHANTS of Newburyport, Mass., voluntarily cut prices 10% after Pres. Truman's appeal of April 10, 1947. Although other U.S. communities adopted the "Newburyport Plan," retailers of Newburyport abandoned it on May 20 because of wholesale price levels

Under the conditions of supply and demand that prevailed in 1947, the expansion in consumer credit was an added inflationary force. However, the expansion that had occurred in the whole economy mitigated considerably the inflationary influence of consumer credit expansion, for the volume of consumer credit, even at the high level of Sept. 1947, was lower relative to total personal consumption expenditures than at the previous peak in 1941—about 7% in Sept. 1947 as compared with 12% in 1941.

Of the various forms of consumer credits, instalment credit, the most volatile of all the types of consumer credit, showed the greatest increase during the first nine months of 1947. The volume of instalment credit at the end of Sept. 1947, however, was still slightly below the prewar peak in 1941, whereas total consumer credit was substantially above the prewar peak. (*See* CONSUMER CREDIT.)

Table I.—*States Enacting Specified Types of Industrial Relations Laws in 1947*

| Prohibition of closed shops or other types of union security agreements | Restriction of picketing and other strike activity | Prohibition of secondary boycotts | Restriction on jurisdictional disputes | Regulation of disputes in public utilities | Strikes by public employees | Registra and finan reports c labour uni |
|---|---|---|---|---|---|---|
| Arizona‡ | Arizona | California | California | Florida | Michigan | Delaware |
| Arkansas | Connecticut | Delaware | Massachusetts | Indiana | Missouri | New Ham |
| Delaware | Delaware | Idaho | Michigan | Massachusetts | New York | North Dak |
| Georgia | Georgia | Iowa | Missouri | Michigan | Ohio | |
| Iowa | Idaho | Minnesota | Pennsylvania | Missouri | Pennsylvania | |
| Maine* | Michigan | Missouri | Wisconsin | Nebraska | Texas | |
| Nebraska | Missouri | North Dakota‡ | | New Jersey | | |
| New Hampshire† | North Dakota‡ | Oregon | | Pennsylvania | | |
| North Carolina | Pennsylvania | Pennsylvania | | Texas§ | | |
| North Dakota‡ | South Dakota | Texas | | Virginia | | |
| South Dakota | Texas | Utah | | Wisconsin | | |
| Tennessee | Utah | | | | | |
| Texas | | | | | | |
| Virginia | | | | | | |

*Permits the making or maintenance of "union shop" contracts.
†Union security contracts are prohibited only with respect to employers having five or less employees.
‡Inoperative until voted upon by the people at the 1948 general election.
§Relates only to picketing and sabotage.
Source: *Monthly Labor Review*, U.S. dept. of labour, Sept. 1947, p. 279.

**U.S. Foreign Trade.**—The foreign trade of the U.S. in 1947 was characterized by a phenomenal increase in merchandise exports, largely financed by credit previously extended to other nations by the United States, and by a disturbing widening of the gap between merchandise exports and imports. Enunciation in early June of the Marshall plan for the systematic extension of aid to war-devastated countries for the rebuilding of their economies was of tremendous importance to the future of U.S. foreign trade and to the domestic economy as well. A further event of great importance to the future of the foreign trade of the U.S. was the conclusion on Oct. 30, 1947, at Geneva of the General Agreement on Tariffs and Trade, probably the most significant accomplishment to date under the Reciprocal Trade Agreements program. In relation to the foreign trade of the United States, the Marshall plan was important because it was concerned with rebuilding the productive capacities of countries so that there would be commodities available to export in payment for imports; the General Agreement on Tariffs and T was important because it was concerned with tearing down many artificial barriers to trade that had grown up over a pe of time, especially during the depression period, when count including the United States, were struggling to protect t domestic markets for their home industries, which were abl

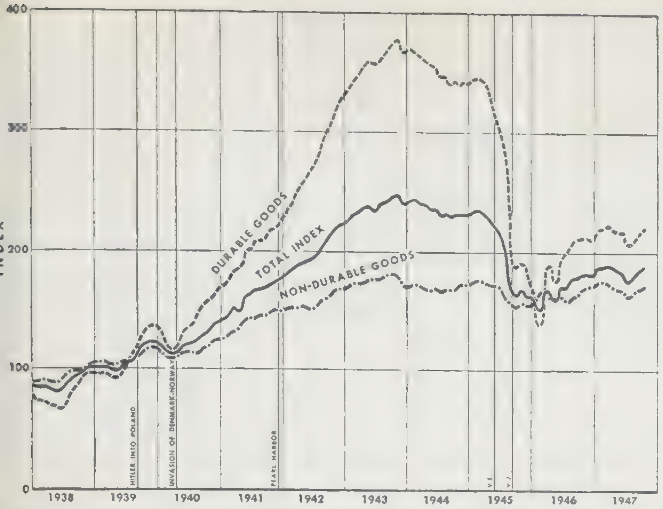
"THE UNTOUCHABLE" by Duffy of the *Baltimore Sun*. Speculation as to a possible business depression grew in 1947, as inflationary prices soared and real income dwindled

Table II.—*Business Indicators: Per Cent Change in Selected Business Indica United States, Selected Periods, 1939–1947*

| Business Indicator | Per Cent Change—First 10 mos. 1947 From the Same Period: 1939 | 1944 | 1946 | Per Chc O 1947 Oct. |
|---|---|---|---|---|
| General business: | | | | |
| Business activity[1] | + 62 | − 1 | + 12 | + |
| Bank debits[2] | +241 | + 29 | + 14 | + |
| Commercial failures[3] | − 77 | +166 | +229 | + |
| Personal income: | | | | |
| Salaries and wages[4] | +166† | + 5† | + 12 | + |
| Agricultural (marketing)[5] | +240‡ | + 44‡ | + 29‡ | + |
| Total[4] | +169† | + 19† | + 12 | + |
| Civilian nonagricultural employment[6] | + 43‡ | + 13‡ | + 7‡ | + |
| Unemployment[4] | − 73† | + 18† | − 3 | − |
| Employment and earnings—mfg.:[6] | | | | |
| Total: | | | | |
| Number employed | + 56 | − 9 | + 10 | + |
| Pay rolls | +227 | − 5 | + 23 | + |
| Per production worker: | | | | |
| Weekly earnings | +104 | + 6 | + 13 | + |
| Hourly earnings | + 91 | + 19 | + 13 | + |
| Hours per week | + 7 | − 11 | − (*) | |
| Industrial production (physical volume): | | | | |
| Durable goods[2] | +100 | − 39 | + 16 | + |
| Steel[7] | + 69 | − 7 | + 32 | + |
| Nondurable goods[2] | + 57 | + (*) | + 5 | + |
| Total[2] | + 69 | − 22 | + 10 | + |
| Value construction contracts awarded:[8] | | | | |
| Residential | +134 | +775 | − 3 | + |
| Nonresidential | +168 | +215 | − 7 | + |
| Public works and utilities | + 66 | +146 | + 12 | + |
| Total | +122 | +291 | − 2 | + |
| Distribution:[4] | | | | |
| Department store sales | +167 | + 54 | + 7 | + |
| Chain store sales | +161‡ | + 59‡ | + 20‡ | + |
| Total retail sales | +159 | + 57 | + 13 | + |
| Consumer credit outstanding—total[2] | + 68□ | +133□ | + 32□ | + |
| Wholesale prices: | | | | |
| Other than farm and food[6] | + 66§ | + 37§ | + 23§ | + |
| Prices received by farmers[5] | +190‖ | + 42‖ | + 20‖ | + |
| Total[6] | + 96§ | + 46§ | + 25§ | + |
| Retail prices: | | | | |
| Food[6] | +102 | + 41 | + 24 | + 1 |
| Total cost of living[6] | + 59 | + 26 | + 16 | + 1 |
| Prices paid by farmers (excl. taxes & int.)[5] | +100‡ | + 38‡ | + 23‡ | + 2 |
| Banking items of member banks:[2] | | | | |
| Loans | +150‖ | + 85‖ | + 26‖ | + |
| Investments in U.S. govt. obligations | +272‖ | − (*) | − 16‖ | − 1 |
| Total investments | +213‖ | + 4‖ | − 14‖ | − 1 |
| Money in circulation[2] | +305‖ | + 26‖ | + (*)‖ | + ( |
| Foreign trade (merchandise):[4] | | | | |
| exports | +402‡ | − 1‡ | + 56‡ | + 7 |
| imports | +155‡ | + 43‡ | + 20‡ | + 2 |
| Corporate profits after taxes | +240◊ | + 72◊ | + 36◊ | + 4 |

*Less than .5%. †On 12-month basis. ‡Nine months 1947 compared with same peri other years. §Year 1947 compared with other years. ‖Eleven months 1947 compa with same period other years. ¶Sept. 1947, compared with Sept. 1946. ♀Dec. 19 compared with Dec. 1946. ♂Nov. 1947, compared with Nov. 1946. □Estimated D 1947, compared with Dec. of the other years. ◊Average for first six months of 19 seasonally adjusted compared with annual average for other years. ▲Second quar 1947, compared with record quarter 1946.

Sources: [1]*New York Times.* [2]Board of Governors of the Federal Reserve system. [3] and Bradstreet, Inc. [4]U.S. department of commerce. [5]U.S. department of agricult [6]U.S. department of labour. [7]American Iron and Steel institute. [8]F. W. Dodge Corp.



INDUSTRIAL PRODUCTION of U.S. durable and nondurable goods, 1938–47, adjusted for seasonable variation (1935–39=100) (Source: Board of Governors of the Federal Reserve System)

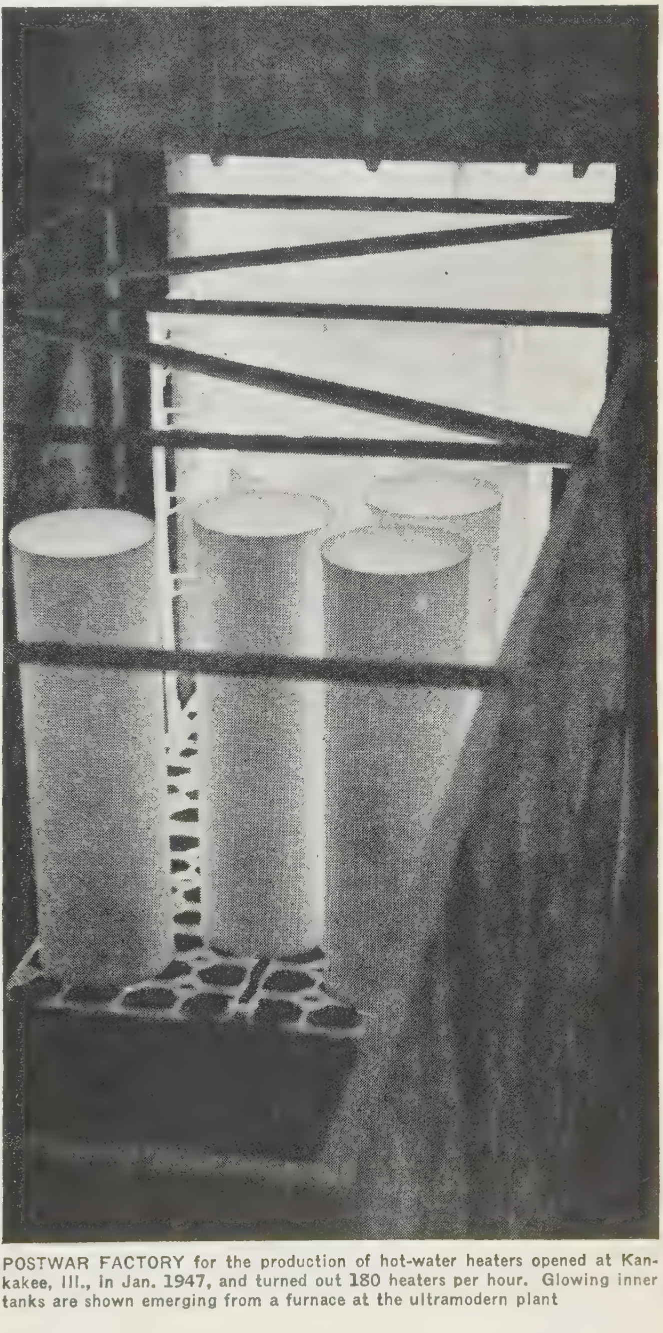
produce more than could be sold under the then existing conditions of consumer demand.

Supported, in large measure, by government credits which the U.S. had extended to countries in need of goods for rehabilitation and relief, the merchandise exports of the U.S. increased greatly throughout 1947. During each month of the first three quarters of the year, according to reports of the U.S. department of commerce, the value of merchandise exports exceeded $1,000,000,000, and the total for the 9-month period amounted to $10,800,000,000. The total for the year 1947 was just under $15,000,000,000. (*See* also European Recovery Program; International Trade.)

**Banking Developments.**—An outstanding development of 1947 in relation to the U.S. domestic economy was the great increase in deposits and currency held by individuals. After declining slightly during the first quarter of 1947, deposits and currency held by individuals rose steadily through the third quarter. At the end of Sept. 1947, the total of privately held deposits and currency stood at $166,000,000,000, which was $21,000,000,000 larger than when hostilities ceased in Aug. 1945, and $103,000,000,000 above the level of 1939. The major factor in the 1947 expansion in privately held deposits and currency was the growth in bank loans. In the first half of 1947, commercial and industrial loans increased by $800,000,000, about the same growth as occurred in the corresponding period in 1946, but after June 1947, there was an intensified demand for business loans and, according to the Federal Reserve board, such loans by reporting member banks increased $2,100,000,000 from June 25 through Oct. 29, 1947. This use of bank credit by business continued to grow in spite of the fact that business profits were at record levels in 1947 and liquid assets high. (*See* also Banking.)

**Company Earnings.**—Earnings of U.S. companies in 1947 reflected the record high levels of peacetime, production trade and national income and, in general, maintained the high level reached during the last quarter of 1946. In 1946, company earnings were characterized by a rapid rise quarter by quarter; n 1947, by a levelling off at the high level attained by the end of 1946. For the first 9 months of 1947, the combined net income of 375 leading corporations in the manufacturing, mining, trade and service industries amounted to $1,980,000,000, an increase of 77% from the corresponding period of 1946, according to a report of the National City Bank of New York. The magnitude of the increase was partly caused by the fact hat net incomes during the first half of 1946, while rising, were low relative to the last two quarters of the year, reflecting in part work stoppages caused by labour difficulties and strikes. The 9 months' net income of these corporations were at an annual rate of 16.2% on an aggregate capital and surplus of $16,300,000,000; the rate in 1946 was 10% on $15,000,000,000.

**Labour Legislation.**—The overshadowing event on the labour front in 1947 was the enactment by congress on June 23, over the veto of President Truman, of the Taft-Hartley Labor-Management Relations act. Widespread antilabour feeling had developed during 1946, a year replete with bitter labour-management controversies and paralyzing work stoppages from strikes. The emerging public defection was organized and exploited in the November political campaign by a majority of the Republican candidates seeking election. When the new, predominantly Republican congress met on Jan. 3, 1947, the drafting of new labour-union control legislation was high on its agenda. Concurrently with the legislative activity in the congress, state labour legislation was also being prepared. In 1947, 44 states met in regular legislative session, and 35 states



POSTWAR FACTORY for the production of hot-water heaters opened at Kankakee, Ill., in Jan. 1947, and turned out 180 heaters per hour. Glowing inner tanks are shown emerging from a furnace at the ultramodern plant

Table III.—*Wholesale Prices*

(1937=100)

| 1946 | Australia | Canada | Czechoslovakia | Denmark | France | India | Italy | Netherlands | Switz. | U.K. |
|---|---|---|---|---|---|---|---|---|---|---|
| Aug. . . . | 139 | 129 | 301 | 180 | 698 | 256 | 2791 | 237 | 194 | 163 |
| Sept. . . . | 139 | 129 | 303 | 181 | 727 | 256 | 3011 | 239 | 192 | 163 |
| Oct. . . . | 140 | 131 | 302 | 186 | 820 | 266 | 3176 | 241 | 195 | 163 |
| Nov. . . . | 142 | 132 | 311 | 187 | 810 | 275 | 3376 | 244 | 197 | 165 |
| Dec. . . . | 141 | 131 | 310 | 187 | 846 | 271 | 3677 | 245 | 197 | 166 |
| 1947 | | | | | | | | | | |
| Jan. . . . | 141 | 135 | 310 | 188 | 874 | 268 | 3754 | 247 | 196 | 167 |
| Feb. . . . | 142 | 140 | 308 | 189 | 889 | 273 | 3891 | 248 | 197 | 169 |
| March. . . | 143 | 142 | 310 | 188 | 860 | 276 | 4139 | 248 | 198 | 169 |
| April . . . | 146 | 145 | 304 | 190 | 847 | 276 | 4533 | 248 | 199 | 172 |
| May . . . | 147 | 148 | 304 | 192 | 946 | 274 | 5203 | 247 | 199 | 174 |
| June . . . | 148 | 151 | 304 | 193 | 904 | 275 | 5329 | 249 | 200 | 175 |
| July . . . | 148 | 153 | 310 | 198 | 882 | 280 | 5752 | 251 | 200 | 178 |
| Aug. . . . | 148 | 153 | 311 | 198 | 1004 | 283 | 5876 | 250 | 201 | 178 |
| Sept. . . . | 151 | 158 | 312 | 197 | 1096 | 281 | 6155 | 252 | 202 | 180 |
| Oct. . . . | | | 316 | 197 | 1122 | 282 | | | 207 | 183 |

Source: *Monthly Bulletin of Statistics*, Statistical Office of the United Nations.

Table V.—*Industrial Employment*

(1937=100)

| 1946 | Australia | Canada | S. Africa | U.K. | Norway | Cze slo |
|---|---|---|---|---|---|---|
| Aug. . . . . . . . . . | 149 | 161 | 144 | 101 | 114 | |
| Sept. . . . . . . . . . | 150 | 164 | 145 | 102 | 115 | |
| Oct. . . . . . . . . . | 150 | 165 | 145 | 103 | 115 | |
| Nov. . . . . . . . . . | 146 | 168 | 145 | 104 | 117 | |
| Dec. . . . . . . . . . | 146 | 170 | 144 | 104 | 117 | |
| 1947 | | | | | | |
| Jan. . . . . . . . . . | 148 | 167 | 143 | 105 | 117 | |
| Feb. . . . . . . . . . | 149 | 169 | 146 | 102 | 121 | |
| March . . . . . . . . . | 150 | 170 | 149 | 104 | 121 | |
| April. . . . . . . . . | 150 | 171 | 148 | 105 | 122 | |
| May . . . . . . . . . | 152 | 171 | 148 | 105 | 123 | |
| June . . . . . . . . . | 153 | 173 | 149 | 106 | 126 | |
| July . . . . . . . . . | 155 | 175 | 149 | 106 | 124 | |
| Aug. . . . . . . . . . | 156 | 177 | 147 | 106 | 125 | |
| Sept. . . . . . . . . . | 156 | 178 | | | 126 | |

Source: *Monthly Bulletin of Statistics*, Statistical Office of the United Nations.

enacted legislation which regulated and restricted union activities. Fourteen passed laws which had the effect of prohibiting closed-shop agreements. Restrictions were placed on the use of secondary boycotts and picketing. Special legislation was passed in some states to regulate labour relations in public ultilities.

Table I shows state action taken on various types of regulatory labour laws, or provisions.

(*See* also DEBT, NATIONAL; LAW; UNITED STATES.)

(V. B. B.)

**Great Britain, British Commonwealth and Europe.**—The basic factor in business conditions throughout the world during 1947 was the continued existence of an excess of demand over supply. The extent of this excess varied widely from country to country, according to the progress of the recovery of their system of production on the one hand and the degree of inflation of purchasing power on the other. Even in countries where inflation was practically nonexistent or moderate, and whose industries and agriculture had not suffered greatly from the war, there was an excess of demand, resulting from heavy buying by less favourably placed countries.

There was no indication yet in any country of the much-prophesied postwar slump. Rising prices caused by scarcity of goods did not appear to have resulted in consumers' strikes to any noteworthy degree. Nor did the majority of governments seek to correct excessive demand by means of deflation, beyond the degree achieved in some countries through reductions in government expenditure. To some extent France and Italy were experimenting with credit restrictions, but not nearly to an extent sufficient to bring about a slump similar to that experienced after World War I. In most countries the official monetary policies aimed at maintaining cheap and plentiful supplies of credit, to finance reconstruction or industrialization.

Under the circumstances the world-wide trend of rising prices was bound to continue. While in countries such as Great Britain, the British commonwealth, Switzerland, the Netherlands, etc., the rise was moderate and under control, in many European countries it assumed alarming proportions. Apart from the very marked rise in official prices, there were spectacular ri in black markets which continued to transact a very large p portion of the total trade in many countries.

Rising prices and large turnover continued to create an mosphere of high prosperity. Producers and merchants w able to earn large profits, even though in many cases these pr its were nominal rather than real, since stocks had to be repl ished at very high prices. Owing to scarcity of labour, r materials and fuel, rising prices did not cause general over-p duction, even though in some lines miscalculations by manuf turers resulted in surplus stocks which were not easily mark able.

Business prosperity in 1947 came to be threatened from a other direction. The suspension of the convertibility of sterli on Aug. 20 led to a widespread realization of the degree scarcity of hard currencies, and financially weak countries sorted to drastic cuts in their imports. Great Britain in partic lar, having spent, or lost through the effects of convertibili practically the whole of the proceeds of the U.S. loan of $3,75 000,000, had to discontinue almost completely its imports fro the dollar area. This dollar economy dealt a severe blow many branches of business, in particular to the automob trade. The price of second-hand cars slumped owing to the su pension of the basic ration of gasoline. The government's de sion to concentrate on an export drive meant that industr working mainly for the domestic market had to be deprived raw materials and even of man-power. Capital expenditure, to had to be severely curtailed, and many important public wor and the construction of new factories had to be suspended.

Most continental countries and British dominions had to fo low Britain's example in enforcing stringent import restrictio primarily against goods from the dollar area, but also agai luxuries, in the broadest sense of the term, from no matter wh source. Even countries such as Sweden and Canada, which fe strong enough at the beginning of 1947 to raise the exchan value of their currencies, found themselves threatened with exhaustion of their supplies of U.S. dollars by the summe There were only two countri in Europe, Switzerland and Be gium, which were unaffected the general trend. Among t British dominions, South Afri was in the strongest positio owing to its gold exports.

The progress of the reconstru tion of industries left much be desired. Few of the late E ropean belligerents approache prewar level. While the nu ber of workmen employed wa if anything, above the prew figure, their output per he

Table IV.—*Industrial Production*

(1937=100)

| 1946 | Belgium | Canada | Denmark | Germany Brit. Zone | Netherlands | Norway | Sweden | U.K.* |
|---|---|---|---|---|---|---|---|---|
| Aug. . . . . . . . . . . . | 73 | 139 | 99 | 35 | 74 | 101 | 104 | 105.5 |
| Sept. . . . . . . . . . . . | 78 | 141 | 101 | 34 | 80 | 108 | 106 | 115.6 |
| Oct . . . . . . . . . . . . | 85 | 146 | 103 | 35 | 92 | 108 | 107 | 113.9 |
| Nov. . . . . . . . . . . . | 80 | 153 | 104 | 35 | 91 | 114 | 108 | 116.1 |
| Dec. . . . . . . . . . . . | 79 | 155 | 105 | 30 | 84 | 108 | 108 | 111.8 |
| 1947 | | | | | | | | |
| Jan. . . . . . . . . . . . | 86 | 161 | 106 | 28 | 86 | 109 | 108 | 110.6 |
| Feb. . . . . . . . . . . . | 77 | 163 | 105 | 26 | 80 | 118 | 107 | 85.4 |
| March . . . . . . . . . . . | 83 | 164 | 98 | 30 | 90 | 113 | 107 | 98.4 |
| April . . . . . . . . . . . | 88 | 164 | 99 | 33 | 90 | 113 | 109 | 106.4 |
| May . . . . . . . . . . . . | 87 | 162 | 100 | 34 | 89 | 122 | 108 | 122.1 |
| June . . . . . . . . . . . | 84 | 163 | 102 | 34 | 92 | 122 | 109 | 117.1 |
| July . . . . . . . . . . . | 82 | 159 | 102 | 36 | 96 | 79 | 109 | 106.4 |
| Aug. . . . . . . . . . . . | 82 | 156 | 103 | 37 | 86 | 120 | 107 | 114.9 |
| Sept. . . . . . . . . . . . | | 162 | 104 | | | 120 | | 118.1 |

*(1944=100)

Source: *Monthly Bulletin of Statistics*, Statistical Office of the United Nations. Figures for the United Kingdom are taken from the *Financial Times* by kind permission.

as lower. On the other hand, British dominions, which under-ent a large degree of industrialization during the war, showed substantial increase of their industrial production.

The inadequacy of output in Europe in general was accom-anied by excessive consumption, as is indicated by the index f retail trade, Table VI. This was partly the result of inflation, nd partly of a more equal distribution of national incomes, be-ause of which the poorest classes were able to increase their onsumption. Under the influence of the growing political de-hand for them, wages and benefits from social services tended o increase.

Unemployment remained very low during the greater part of ne year, even though there were sharp temporary increases in ritain and other European countries owing to lack of fuel or aw materials.

Table VI.—*Retail Trade*

(1937=100)

| 46 | Australia | Canada | Denmark | Netherlands | Switzerland | U.K. |
|---|---|---|---|---|---|---|
| ug. . . . . . . . . . | 165 | 206 | 218 | 147 | 157 | 129 |
| pt. . . . . . . . . . | 178 | 199 | 219 | 147 | 177 | 135 |
| ct. . . . . . . . . . | 178 | 218 | 219 | 159 | 205 | 140 |
| ov. . . . . . . . . . | 199 | 235 | 249 | 232 | 224 | 146 |
| ec. . . . . . . . . . | 185 | 277 | 308 | 190 | 283 | 161 |
| 47 | | | | | | |
| n. . . . . . . . . . | 167 | 174 | 198 | 168 | 176 | 126 |
| b. . . . . . . . . . | 155 | 176 | 186 | 143 | 174 | 128 |
| arch . . . . . . . . . | 169 | 214 | 217 | 194 | 209 | 141 |
| pril. . . . . . . . . . | 193 | 215 | 221 | 215 | 220 | 141 |
| ay . . . . . . . . . . | 194 | 238 | 247 | 213 | 215 | 139 |
| ne . . . . . . . . . . | 186 | 224 | 222 | 186 | 201 | 142 |
| ly . . . . . . . . . . | 189 | 208 | | 220 | 195 | 136 |
| ug. . . . . . . . . . | | 215 | | 197 | 179 | 149 |
| pt. . . . . . . . . . | | 232 | | 192 | 199 | |
| ct. . . . . . . . . . | | | | | 231 | |

Source: *Monthly Bulletin of Statistics*, Statistical Office of the United Nations.

Government control continued to be a leading factor in busi-ess, especially in Europe. Its extent, far from lessening, ac-ually increased in the late summer and early autumn, as a esult of the dollar scarcity. In many instances the extent of fficial interference approached wartime level. Socialist legisla-on, too, continued in several European countries, especially in ritain where the nationalization of railroads and electricity ndertakings was passed by parliament. In countries beyond the iron curtain" proprietors of private enterprise were gradually queezed out of business by the relentless severity of anti-apitalist laws. Taxation of profits was further increased in everal countries.

The year 1947, nonetheless, was not bad from the point of iew of business activity. Profit possibilities were very favour-ble, especially in branches where prices were not officially xed. In most countries manufacturers and merchants had no fficulty in financing their business activities out of their own quid resources or with the aid of borrowed money. Govern-ents' efforts to balance their budgets made it possible for anks, for the first time since the beginning of World War II, to evote a large part of their resources to financing trade instead lending to treasuries. Owing to the ease with which stocks in eneral could be disposed of, and the high degree of liquidity at prevailed, the number of insolvencies remained very low. he main risk which producers had to run was not bad debts but dden changes in the situation through government interven-on or through lack of transport, fuel, materials or labour. (*See* so INTERNATIONAL TRADE; STRATEGIC MINERAL SUPPLIES; AGES AND HOURS; and articles on individual countries and dustries.) (P. EG.)

## utter.

Production of butter in the United States recovered partly in 1947 from the 40-year low record of 1946. otal output was estimated at 1,700,000,000 lb., compared with 501,000,000 lb. in 1946 and an average of 1,990,000,000 lb. uring 1940–45. With milk production about the same as in 46 and more cream available, butter production was well aintained during the first half of the year but declined sharply in August. Civilian consumption was estimated at about 11.5 lb. per capita, compared with 10.2 lb. in 1946 and an average of about 12 lb. during 1940–45. Less than 1% of total production was exported in 1946 and during the first half of 1947.

The price of butter to producers declined from 74.5 cents per lb. in Dec. 1946 to 63 cents in May 1947, then recovered to 84 cents in September. Retail prices ranged from 75 to 95 cents during the second half of the year. Storage stocks during 1947 were only about 50% of normal.

The increase in world butter production during 1947 reflected chiefly the rise in U.S. production. The severe drought in Europe caused a decline in milk production during midyear. In France, however, there was a marked increase in butter production. Estimates for the second quarter of 1947 also showed increases in Belgium and New Zealand.

(*See* also CHEESE; DAIRYING; MARGARINE; MILK.)

(J. C. MS.)

## Cabinet Members.

The following members of President Harry S. Truman's cabinet held office on Jan. 1, 1948.

| *Post* | *Name* | *State* |
|---|---|---|
| Secretary of State . . . | George C. Marshall . | Pennsylvania |
| Secretary of the Treasury | John W. Snyder . . . | Missouri |
| Attorney General . . . | Thomas C. Clark . . | Texas |
| Postmaster General . . | Jesse M. Donaldson . | Illinois |
| Secretary of the Interior . | Julius A. Krug . . . | Tennessee |
| Secretary of Agriculture . | Clinton P. Anderson . | New Mexico |
| Secretary of Commerce . | W. Averell Harriman . | New York |
| Secretary of Labor . . | Lewis B. Schwellenbach . | Washington |
| Secretary of Defense . . | James Forrestal . . . | New York |

**Great Britain.**—On Dec. 31, 1947, the British Labour cabinet was composed as follows:

| *Post* | *Name* |
|---|---|
| Prime Minister and First Lord of the Treasury | Clement Richard Attlee |
| Lord President of the Council . . . . . | Herbert Stanley Morrison |
| Secretary of State for Foreign Affairs . . | Ernest Bevin |
| Chancellor of the Exchequer . . . . . . | Sir Stafford Cripps |
| Minister of Defense . . . . . . . . | Albert Victor Alexander |
| Lord Privy Seal . . . . . . . . . . | Viscount Addison |
| Lord Chancellor . . . . . . . . . . | Viscount Jowitt |
| Secretary of State for the Home Department | James Chuter Ede |
| Secretary of State for the Colonies . . . | Arthur Creech Jones |
| Secretary of State for Burma . . . . . | The Earl of Listowel |
| Secretary of State for Commonwealth Relations | Philip John Noel-Baker |
| Secretary of State for Scotland . . . . . | Arthur Woodburn |
| Minister of Labour and National Service . | George Alfred Isaacs |
| Minister of Health . . . . . . . . . | Aneurin Bevan |
| Minister of Agriculture and Fisheries . . | Thomas Williams |
| Minister of Education . . . . . . . | George Tomlinson |
| President of the Board of Trade . . . . | James Harold Wilson |

(*See* also GOVERNMENT DEPARTMENTS AND BUREAUS.)

**Cacao:** *see* COCOA.

## Cadmium.

By the close of 1947 figures on the production of cadmium in the United States had not been reported for 1946, but after dropping from 4,390 short tons in 1944 to 4,192 tons in 1945, a further decline in 1946 was to be expected. Outputs were reported from other countries as follows for 1946, with 1945 figures in parentheses: Mexico 790 (1,161) short tons of cadmium content exported for treatment elsewhere; Australia 246 (about the same as 1945); Canada 380 (324); Poland 127 (54); other smaller 1946 outputs included Belgium 98 tons, France 53, Norway 28, Italy 25 and Belgian Congo 18 tons. (G. A. RO.)

## Cadogan, Sir Alexander George Montagu

(1884– ), British diplomat and statesman, was born on Nov. 25, and educated at Eton and Balliol college, Oxford. He entered the foreign office, in 1933 went to Peiping as minister, and in 1935 was appointed ambassador. He returned to London in 1936 to become deputy undersecretary of state for foreign affairs, and later permanent secretary.

In 1944 Sir Alexander headed the British delegation to the Dumbarton Oaks conference, and in 1945 attended the San Francisco conference. In Jan. 1946 he was appointed permanent British representative to the United Nations Security council, and also represented Britain at the general assemblies (leading the British delegates at the special assembly on Palestine, 1947), the atomic energy commission and the commission for conventional armaments.

The Security council, in the early months of the year, received a British complaint against Albania, and Sir Alexander spoke bitterly of the way in which a majority, having found the complaint substantiated, had been overruled by the application of the veto, and described the council as being "completely obstructed, sterile and impotent."

**Calendar of Events, 1947:** *see* pages 1–16.

**California.** The most southerly Pacific coast state of the United States, California acquired statehood on Sept. 9, 1850. It is popularly known as the "Golden state," and has an area of 158,693 sq.mi., of which 1,890 sq.mi. is water. The resident civilian population was 9,342,000 (U.S. bureau of census est. on July 1, 1946) or 36.2% more than the 1940 census. Chief cities (with increase over 1940 in parentheses) were: Los Angeles 1,805,687 (20.0%); San Francisco 827,400 (30.3%); Oakland 400,935 (32.7%); San Diego 362,658 (78.3%); Long Beach 241,109 (46.8%); Berkeley 100,024 (16.9%); Pasadena 98,279 (20.1%); Glendale 96,495 (16.8%); Richmond 93,738 (252.1%). The capital, Sacramento, had a population of 119,984 (19.9%).

**History.**—The chief officers of California in 1947 were Earl Warren, governor; Goodwin J. Knight, lieutenant governor; Frank M. Jordan, secretary of state; Thomas H. Kuchel, controller; Charles G. Johnson, treasurer; Roy E. Simpson, superintendent of public instruction, and Fred N. Howser, attorney general.

When the state legislative session ended in July, most of Governor Warren's proposed legislation for 1947 had been made into law. A $3,000,000,000 ten-year highway construction program was launched, the revenue to be raised from a 1½-cent increase in the gasoline tax, a $2 levy on new driver's licences and a raise in automobile licence plate fees from $3 to $6. The state highway patrol was reorganized, a state aviation commission was established and a seven-man recreation commission was set up. Provisions were made for state mediation of labour disputes, liberalization of workmen's compensation benefits and an increase in funds for veterans' housing. The state assembly also outlawed jurisdictional strikes in California and required California citizens convicted of sex crimes to register with local police chiefs.

In July former State Attorney General Robert Kenny began the first official Henry A. Wallace presidential boom. Repercussions were felt at the state meeting of Democratic leaders in August, when the group split into three factions—supporters of President Harry S. Truman; Wallace backers, led by Robert Kenny; and followers of James Roosevelt, chairman of the California Democratic Central committee. Governor Warren was mentioned prominently as a possible presidential candidate in 1948, and state Republicans pledged their support in behalf of his nomination.

State Senator Jack Tenney released a 374-page report of his committee on un-American activities early in March, which charged that a number of organizations within the state were under communist influence and suggested that tax-supported institutions be purged of communists.

**Education.**—Average daily attendance for 1946–47 was estimat have been 304,774 in unified districts, 735,312 in elementary di and 330,602 in high school districts. Public junior colleges en 47,976 students of which 18,700 were veterans. The seven state c showed an enrolment of more than 16,000 students. For the fall ser of 1947–48 the University of California reported a total of 4 full-time students for its 8 schools, of which 21,003 were veterans; 2 were enrolled at the Berkeley campus.

**Social Insurance and Assistance, Public Welfare and Related Progra** For 1946–47 the average monthly assistance payment for the 16 needy aged was $51.35 (total amount spent $103,466,900); the a monthly payment for the 6,314 needy blind was $60.20 (total a spent $4,576,440) and the average monthly payment for the 2 needy children was $29.52 (total amount $9,089,430). During the year 1945–46 payable claims for unemployment compensation amo to 766,938 (70,511 in 1943), and the benefits paid totalled $152,00

Total expenditures for the 6 adult penal institutions and their inmates amounted to $4,020,243 for 1946. For the same year, ex tures of the state youth authority totalled $2,710,387, the foll institutions being under its direction: 5 work camps for boys wit inmates, 3 schools for boys with 1,028 inmates, and 2 schools for with 303 inmates.

**Communications.**—Final automobile registrations for 1946 to 2,801,076. As indicated by a legislative report of 1946 there were 1 mi. of highway in the state system and state expenditures for high in 1946–47 amounted to $74,139,360 (1945–46, $41,858,875). Ex tures for county roads and highways in 1946–47 totalled $4,05 (1945–46, $201,491). California, in 1940, had 16,856 mi. of rai 2,768 mi. of that being electrified. Of the 328 airports in the state in 69 were municipally operated and 125 were commercial; there 2,820 mi. of federal airways within the state.

**Banking and Finance.**—Total assets of the 115 state-supervised (171 branch offices) reached an all-time high of $3,651,914,000 in (1945, $3,236,602,000). On Jan. 1, 1947, 111 California banks members of the federal reserve system. Total bank deposits in Calif at the end of 1946 amounted to $11,353,422,000 (1945, $10,625,383, The 106 state licensed savings and loan associations reported asse $331,210,409.75, an increase of 25.24% over 1945.

At the end of the fiscal year July 1, 1946, total tax collections i state amounted to $4,364,580,000 (1945, $4,362,193,000). For the fiscal year Californians paid the U.S. government $2,464,294,41 income taxes, which gave the state third rank in the amount of in tax paid into the federal treasury.

Total state revenue for 1946–47 was $571,677,261 (1945–46, $ 846,907.47); total expenditures for 1946–47 reached $487,85 (1945–46, $342,174,654.70); the current budget surplus in 1946–47 $83,819,460 (1945–46, $154,672,252.77) and the net bonded de the state as of Dec. 31, 1946, was $102,019,503.10.

**Agriculture.**—In 1946, as a result of favourable agricultural condi the aggregate tonnage of all California crops increased by 7% ove 1945 figure. Total farm value of the major crops produced in the was $1,531,744 in 1946 (1945, $1,251,399). Acreage of truck harvested increased from 611,080 ac. in 1945 to 675,690 ac. in The cash farm income in 1946 was $2,121,948,000 (1945, $1,872, 000) of which $609,245,000 was from livestock and products ( $561,260,000), $1,466,312,000 from crops (1945, $1,271,408,000) $46,391,000 from government payments (1945, $39,618,000).

Table I.—*Leading Agricultural Products of California, 1946 and 194*

| Crop | 1946 | 1945 | Value, 1 |
|---|---|---|---|
| Grapes | .......... | .......... | $238,90 |
| Hay, tons | 6,108,000 | 6,015,000 | 140,484 |
| Oranges, boxes | 43,458,000 | 44,580,000 | 140,477 |
| Cotton lint, bales | 458,000 | 353,410 | 72,645 |
| Barley, bu. | 46,066,000 | 41,608,000 | 65,874 |
| Potatoes, bu. | 47,010,000 | 36,700,000 | 63,464 |
| Tomatoes | .......... | .......... | 62,155 |
| Lettuce, crate (5 doz.) | 22,720,000 | 19,122,000 | 61,187 |
| Peaches, bu. | 888,000 | 30,836,000 | 60,00 |
| Prunes, tons (dry) | 205,000 | 226,000 | 52,480 |
| Beans (dry), bags (100 lb.) | 3,587,000 | 3,274,000 | 44,064 |
| Walnuts, tons | 59,000 | 64,000 | 34,810 |

**Manufacturing.**—The total estimated value of California manufact for 1946 was $7,443,600,000 (1945, $8,269,800,000). Retail sales creased from $6,876,299,000 in 1945 to $8,984,075,000 in 1946, estimates of new construction indicated a total of $1,430,400,000 1946 (1945, $686,700,000).

Table II.—*Principal Industries of California, 1946 and 1945*

| Industry | Value of Products (est.) 1946 | 1945 |
|---|---|---|
| Food and beverage products | $2,366,200,000 | $2,044,200 |
| Aircraft and shipbuilding | 761,800,000 | 1,735,100 |
| Petroleum products | 744,100,000 | 793,400 |
| Iron, steel and products | 514,300,000 | 577,800 |
| Machinery | 463,100,000 | 731,300 |
| Chemical and allied products | 352,000,000 | 269,100 |
| Printing and publishing | 335,800,000 | 274,800 |
| Lumber | 232,800,000 | 198,300 |
| Apparel manufacturing | 225,500,000 | 233,000 |
| Stone, clay and glass | 212,500,000 | 190,400 |
| Automobiles and equipment | 210,900,000 | 178,200 |
| Rubber and rubber products | 179,500,000 | 241,200 |

An average of 677,200 wage and salary workers was employed California industry during 1946, the largest number in any peace year (1,165,500 during the wartime peak of 1943). Total annual w for comparative years were $1,145,000,000 in 1946, $1,610,000,00 1945 and $366,000,000 in 1939.

**Mineral Production.**—Mineral production in 1946 was valued at $559,49,496, higher than in any previous year.

able III.—*Value of Principal Minerals Produced in California, 1946 and 1945*

| Product | Value 1946 | Value 1945 |
|---|---|---|
| etroleum | $386,812,146 | $342,756,767 |
| atural gas | 46,905,877 | 35,362,313 |
| ement | 32,403,081 | 23,469,027 |
| iscellaneous stone | 27,671,788 | 20,207,351 |
| old | 12,488,840 | 5,177,830 |
| rick and tile | 5,565,075 | 3,523,661 |
| ead | 2,227,157 | 1,247,410 |
| inc | 1,786,056 | 2,224,184 |
| uicksilver | 1,648,758 | 2,697,835 |
| opper | 1,357,131 | 1,883,206 |

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## alifornia, University of.

A state-supported, coeducational institution with headuarters at Berkeley, where the university was founded March 3, 1868, and with seven other campuses, at Los Angeles, San Francisco, Davis, Santa Barbara, Riverside, Mt. Hamilton and a Jolla. During 1947 construction began on projects authorized y the $95,147,000 permanent building program voted by the tate legislature, and university enrolment hit a new high of nore than 43,000 students registered on all campuses. To meet he needs of this student body while the permanent building rogram was under way more than 100 temporary structures vere erected on the major campuses to provide classrooms, aboratories and office space, and near-by wartime housing projcts were utilized for dormitory and apartment living quarters. On all campuses faculty and administrative staffs, as well as cademic offerings, were augmented. At Berkeley, particularly, he program in Asiatic and Slavic languages was increased in eeping with the coast's vital interests in the Pacific area, and n Los Angeles a new department of theatre arts was inauguated. Through special legislative appropriations, the college of griculture increased its research program by nearly $1,000,000, ts field work by more than $500,000 and its instruction by nore than $250,000. In the atomic research program, the giant 84-in. cyclotron, completed late in 1946, invaded a new domain f the atom. The great cyclotron, 10 times more powerful than ny other atom-smasher, dislodged as many as 30 particles from nucleus, where 2 or 3 is the usual number for other cyclotrons; roduced the most complete disintegrations of nuclei, comarable with cosmic ray phenomena, and verified for the first ime experimentally that subatomic forces operate between elenentary nuclear particles. A 300,000,000-electron volt synhrotron and a 40,000,000-ev linear accelerator neared compleion, and preliminary designs of a 10,000,000,000-ev "bevatron" or accelerating protons were announced. A unique wind tunnel or exploring the atmosphere between 70,000 ft. and 100 mi. bove sea level was under construction with funds from the ffice of Naval Research. A laboratory of experimental oncology as established by the medical school on the San Francisco ampus and the U.S. public health service as a part of an exanded university-wide cancer research program. At the Lick bservatory on Mt. Hamilton the 20-in. Carnegie astrographic amera found a new comet and a new asteroid, while new adances were made in the development of electronic astronomial observations. Operation of the university's Los Alamos N.M.) Scientific laboratory, where the atomic bomb was degned and made, was continued. University extension adult ducation programs turned increasingly to offerings designed for he adult who has been to college, with new refresher courses n law, medicine, engineering, business administration, dentistry nd similar fields. (For statistics of endowment, enrolment, aculty, library volumes, etc., *see* UNIVERSITIES AND COLLEGES.) (R. G. S.)

**Cambodia:** *see* FRENCH OVERSEAS TERRITORIES.

## Cambridge University.

The academic year 1946–47 opened with 5,018 men and 572 women undergraduates in residence; 844 men research students and bachelors and 93 women research students were also attached to the university. There were 1,487 masters of arts in residence, and 210 women members of the staff at Girton and Newnham. Two-thirds of the United Kingdom students had done national service before admission. A syndicate appointed for the purpose recommended that full membership of the university be conferred on women.

The parliamentary grant, which amounted to £350,000 for the year, was to be approximately doubled in the next five years. The prewar figure was £118,500. Industrial and other outside bodies contributed £80,000 for research.

Pembroke college celebrated its sixth centenary and Trinity college its fourth centenary. Two new heads of colleges were inducted: Dr. William Telfer (Selwyn) and Prof. Sir Lionel Whitby (Downing). Honorary degrees were conferred on Gen. Dwight D. Eisenhower, Field Marshal Viscount Montgomery of Alamein, Earl Wavell, Ernest Bevin and other public men. During the year ten chairs were filled: J. R. M. Butler, modern history; H. Jeffreys, astronomy; F. J. W. Roughton, colloid science; Dr. M. C. Knowles, mediaeval history; E. C. Ratcliff, divinity; W. I. B. Beveridge, animal pathology; Dr. A. J. Arberry, Arabic; R. O. Redman, astrophysics; O. R. Frisch, natural philosophy; H. S. Commager, American history.

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**Cameroons:** *see* BRITISH WEST AFRICA; FRENCH OVERSEAS TERRITORIES; TRUSTEE TERRITORIES.

## Camp Fire Girls.

During 1947 more than 360,000 girls in the United States, representing all races and creeds, enjoyed the recreational and educational activities of Camp Fire Girls, Inc. There were also Camp Fire groups in England, Canada, Alaska, El Salvador and the Philippine Republic. Serving three age levels, the youth agency provides the following groups: Blue Birds, for girls 7 to 10 years old; Camp Fire Girls, for the 10- to 15-year-olds, and the Horizon club, which serves the 15- to 18-year-old girls.

Each year, as program emphasis, Camp Fire proposes a national project in which every member may take part. The theme chosen is always one of current national interest, geared particularly to citizenship and service. "Going Places" was the special theme for 1947. The project offered a broad scope and unlimited frontiers for the girls to explore, both in the real and ideal world. It focused attention on global goodwill and community understanding. The members in pursuing the project went forward in every way—travel, knowledge, safety practices, science, service to others, nutrition ideas, world friendship and understanding.

By planning imaginary trips to foreign lands, Camp Fire Girls learned of other customs, other ways. Adapting the project to their long-established "pen pals" activity, they continued corresponding with children of other countries. Many Camp Fire groups became vitally interested in the living conditions of their foreign friends and "adopted" some of them, sending regular contributions of food, clothing, toys and money. Through this phase of their "going places" theme, Camp Fire Girls acquired an increased knowledge of the history, culture, customs and habits of their friends around the globe.

In line with citizenship and service aspects of the 1947 project, Camp Fire Girls inaugurated a "Better Breakfast" campaign.

As a conservative estimate, 25,000,000 persons throughout the nation were informed, through the campaign, of the health benefits derived from eating a nutritious and adequate breakfast.

Other highlights of Camp Fire's over-all program for 1947 included the new edition of the *Horizon Club Program Book* for senior members. Based on suggestions made by the Horizon club members themselves, and edited and written by the national program department, this publication went out to Horizon club members across the United States. It outlined the objectives of the Horizon club—development of personality, social experience, vocational exploration and service to others—all inspired by the ideals expressed in the law of the Camp Fire Girls: Worship God, Seek Beauty, Give Service, Pursue Knowledge, Be Trustworthy, Hold on to Health, Glorify Work, Be Happy.

*The Outdoor Book* was also published during the year. As outdoors craft was found to be the most popular of Camp Fire's seven crafts—home, creative arts, outdoors, frontiers (science), business, sports and games, citizenship—this publication was presented as a resource for leaders in planning outdoor activities for the girls. It includes chapters on: The Importance of Group Camping, Leadership in the Out-of-Doors; Outdoor Activities; Planning Your Trips; Safeguards; Clothing and Equipment; What About Food; Menus and Recipes; Fire Building; Camp Housekeeping; Year Round Activities; Outdoor Neighbours; Games, Songs and Programs.

The official magazine of the youth agency is *The Camp Fire Girl.* This is published monthly, except during July and August. It had in 1947 a monthly circulation of 17,500.

During 1947 the youth agency purchased a seven-story building at 16 East 48th street, New York, for use as national headquarters. Its former home was at 88 Lexington avenue.

Mrs. James C. Parker of Grand Rapids, Mich., was president of the National Council of Camp Fire Girls; Dr. Bernice Baxter of Oakland, Calif., vice-president; Earle W. Brailey of Cleveland, O., chairman of the board; Glenn O. Hoffhines of Creek, Mich., treasurer; and Mrs. Frank C. Love of Syra N.Y., secretary. Miss Martha F. Allen was national dir President Harry S. Truman was honorary president of the o ization, and Herbert Hoover, honorary vice-president.

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CAMP FIRE GIRLS planning an imaginary trip as part of their 1947 project, "Going Places." Actual travel experience was gained by many of the girls during organized trips throughout the year

## Canada, Dominion of.

A dominion of the British monwealth of nations (Statu Westminster, 1931, 22 Geo. V. c. 4) covering all of N America north of the United States except Newfound Labrador and Alaska. Canada is a federal union of nine inces united under the terms of the British North Americ (1867). The original provinces were Nova Scotia, New B wick, Quebec, Ontario; to those were added Manitoba, British Columbia, 1871; Prince Edward Island, 1873; Al and Saskatchewan, 1905. Outside the provincial bound are the Yukon and the Northwest Territories, under juri tion of the national government. Total area: 3,694,863 sq of which 228,307 sq.mi. are water. Capital is Ottawa (q Canada's 17th governor-general, Viscount Alexander of T took office April 12, 1946, succeeding the Earl of Athlone

**Population.**—(1941) 11,506,655; (1947 est.) 12,582, Montreal is the largest city, pop. (1946) 1,082,555. Provi capitals and their populations (1946 assessor's est. except Fredericton and Charlottetown, for which figures are census) in order of provinces listed above: Halifax (100,0 Fredericton (10,062); Quebec (183,441); Toronto (696,5 Winnipeg (231,203); Victoria (55,000); Charlottetown 821); Edmonton (111,745); Regina (56,520).

Population trends through 1947 were interesting. A scale post-World War II immigration policy got under Immigration offices were opened in the United Kingdom six immigration teams were sent to European displaced pers camps to interview prospective immigrants. The governme official policy was to welcome those who could contribute and strength to help Canada exploit its potentialities. Nov. 30, 64,895 immigrants had entered. The 1947 total estimated at 75,000 (1946: 71,719; 1945: 22,722). The lar single 1947 group was from the United Kingdom, 33,910 sons; displaced persons numbered 7,345. About 9,000 Canad resident in the United States returned home (1946: 5,177)

The first mass air-borne immigration took place when Polish girls were flown from Frankfort, Germany, to Que to work in a textile mill. The experiment was soon copied the province of Ontario which flew in 5,800 British immigra by the end of the year, and planned for 1,200 more.

**Constitution.**—During 1947 Canada moved further along road to nationhood. On Jan. 1 the Canadian Citizenship went into force, and for the first time residents became, legal and other documents, "Canadian citizens" rather th "British subjects." The Citizenship act also recognized right of women to decide their own nationality. They no lon automatically assumed the nationality of their husbands wh they married non-Canadians.

On July 1 the United Kingdom changed the title of dominion office in London to the "commonwealth relations fice," which further emphasized the fact that Canada was "oversea Dominion of the King, in exactly the same positi as Great Britain, the Metropolitan Dominion of His Majest

On Jan. 15 the privy council ruled that the Canadian parl ment could abolish appeals from the Canadian supreme co to the privy council. Canada had the power to interpret own laws, and need no longer rely on the judgment of Gre Britain.

A fourth constitutional step was taken on Oct. 1 when

IME MINISTER Mackenzie King (left) accepting certificate No. 1 conferring nadian citizenship during a ceremony at Ottawa on Jan. 3, 1947. Effective . 1, all native-born Canadians were automatically granted citizenship, while naining British subjects

tters patent" authorizing the governor-general to exercise, advice of the Canadian government, the king's powers in pect to Canada, were revised. It became legally possible for governor-general to sign treaties, to sign letters of credence ambassadors and to give assent to honours and awards, hout having to consult the king.

**Politics.**—The Liberal government under the Rt. Hon. W. L. ickenzie King remained in power. Three federal by-elections re held during the year in Montreal-Cartier (Que.), Halifax .S.) and York-Sunbury (N.B.), all won by the Liberals with ge majorities. At the end of the year the Liberals held 126 ts in the 245-seat parliament. Two seats were vacant. There re ten vacancies in the senate.

The Co-operative Commonwealth federation announced a ialization priority list. It "accepted in principle" the nanalization of banking, iron and steel, farm implements, meat king. Leading members of the C.C.F. advocated that nada's constitution, "drawn up for the horse-and-buggy s," should be streamlined.

That was also one of the proposals of the Social Credit party, ich desired a new allocation of powers and revenues between dominion and the provinces. Solon Low, federal Social edit leader, proposed legislation to compel political parties to close the sources of their funds. E. C. Manning, Social edit premier of Alberta, said that the Social Credit goal s "to establish a free economy in which the artificial barriers t restrict and sabotage production will be removed and in ich all production will be fully monetized."

The Bloc Populaire, founded in 1942, which won only three ebec legislative seats in the 1944 provincial election and two parliament in the 1945 federal election, broke apart when leader resigned.

The royal Canadian mounted police and the external affairs artment conducted investigations into communist activities. private bill to outlaw communist organizations was introduced in parliament but had not reached a vote by the end of the year.

**Government.**—The 3rd session of the 20th parliament began late in January and finished in mid-July. The 3rd session passed 78 public laws, all but one of which were government sponsored.

There were 31 new laws. Exportation from Canada of goods not in adequate supply was banned. A dominion coal board was set up to examine Canada's fuel situation. The Eastern Rockies Forest Conservation board was organized to construct, operate and maintain projects to conserve the forest and protect the watershed of that area. It was one of the most vital pieces of Canadian conservation legislation ever enacted. Redistribution changed the boundaries of many federal constituencies and increased parliamentary representation from 245 to 255, effective for the next general election.

The 3rd session made 46 amendments to existing laws. Most important were improvements in the marketing of grain, compulsory grading of flax fibres, banning of private sale of atomic energy inventions, suspension of the collection of excess profits from business. The National Defence act was revised to set up a defense research board, empowered to develop and improve Canada's military equipment. The 1947 budget made cuts averaging 29% in individual income tax.

The government announced a surplus of $541,693,160 for the first seven months of the 1947–48 fiscal year. Six members of parliament were appointed parliamentary assistants, bringing the total to ten.

The government began the 4th session of the 20th parliament on Dec. 5, instead of waiting until Jan. 1948, so as to take urgently needed steps to improve Canada's economic position. The government strategy was twofold. The long-range plan was to ratify the Geneva trade treaties, so that Canada's export trade could be expanded. The short-range plan was to pass legislation banning excessive imports from the United States, because Canada's supply of United States dollars for such imports was inadequate. When parliament adjourned on Dec. 19 it was still discussing the short-range plan.

**External Affairs.**—Speaking in New York city on Oct. 31 at a Canadian club reception, Prime Minister King said that Canada would increasingly be "one of the great influences for world co-operation and peace." Events of 1947 underlined this trend. Canada was active and aggressive at United Nations meetings. On Sept. 30 Canada was elected to the Security council. A Canadian resolution that the Russian plan for an international atomic control commission was not adequate was approved. Another Canadian resolution condemning war propaganda and advocating peace-mongering was unanimously accepted. Canadian delegates were instrumental in getting Russia and the United States to adopt a compromise on the Palestine issue and thus broke the deadlock.

Although the United Nations Relief and Rehabilitation Administration (U.N.R.R.A.) program was terminated, Canada's aid to war-torn Europe and Asia did not cease. In August the government provided $11,000,000 in post-U.N.R.R.A. relief to Greece, Italy and Austria. A $5,000,000 grant was made to the International Children's Emergency fund. Toward the end of the year the Canadian Council for Reconstruction through the United Nations Educational, Scientific and Cultural organization was set up, with the object of raising $5,000,000 voluntarily in Canada to help restore education in Europe.

On Nov. 6, after seven months of study, terms were made public under which Canada would admit Newfoundland as tenth Canadian province. The island was promised full provincial status and benefit of all normal and special services rendered by the federal government to the people of Canada generally. Newfoundlanders were still discussing the terms at the end of 1947, and a May 1948 plebiscite was in prospect.

**United States and Canadian Relations.**—In June Pres. Harry S. Truman visited Ottawa and scored a striking personal triumph. His broadcast speech to parliament was a bold statement on the Truman doctrine, and he received a great ovation when he said: "We intend to support those who are determined to govern themselves in their own way, and who honor the right of others to do likewise."

Canada-United States wartime co-operation for defense of North America continued as a permanent peacetime policy. At special conferences Canadian and United States military experts exchanged ideas on developments in the armament field. Parliament permitted United States troops in Canada in peacetime to have their own military courts for disciplinary measures.

The 1945 air agreement between the United States and Canada was revised permitting carriers additional landing rights in each other's country. Canada extended its consular service to practically all large U.S. cities. On Dec. 15 it was announced that U.S. investments in Canada totalled $4,446,000,000, which was 4 times as great as those in any other single country.

**Dominion-Provincial Relations.**—In an effort to extend the wartime tax agreements, when the 1946 conferences failed, the federal government proceeded to sign five separate provincial agreements. Early in Jan. 1947 this plan ran into difficulty when New Brunswick felt that bargains between the dominion and British Columbia and Prince Edward Island were more favourable provincially than its own. The dominion called a new conference with the five signing provinces and offered a new formula which increased the subsidies to take the place of the income and corporation taxes. It was finally agreed to by all except Ontario and Quebec. In July the government bill to implement agreements with seven provinces passed parliament.

Parliament also passed special government legislation cancelling $55,416,164 of relief debts built up by British Columbia, Alberta, Saskatchewan and Manitoba during the depression. All provinces signed agreements under the amended Old Age Pension act, passed at the third session, which increased social welfare payments.

**Economic Controls.**—Throughout the year there was stant removal of price ceilings, and retained ceilings we the most part revised upward. Sugar, first commodity ra on July 1, 1942, was the last commodity derationed on N 1947. The withdrawal of subsidies was compensated by prices. On Nov. 1 the cost-of-living index stood at on Jan. 2, 1947, the index had stood at 127. Soaring food caused the reimposition of ceilings on canned fruits and tables, but the government went no further along rec than warning about profiteering and food speculation.

When a western Canadian housewives' 30-day buyers' in May had little effect in curbing price rises, 50 na women's organizations held an Ottawa convention and fo the Canadian Association of Consumers. The new body vided a focal point for consumers' price representations recommendations to the government.

The government faced a national economic crisis. U States coal, oil and basic steel continued to be vital to Can industrial life, but it required U.S. dollars to purchase On Dec. 31, 1945, Canada had U.S. exchange reserves tot $1,500,000,000. By Dec. 31, 1946, these had dropped to 250,000,000, and by Nov. 17, 1947, to $500,000,000. Canadian dollar equals $1.00 U.S.) For various reasons C dians were purchasing more heavily from the U.S. than A icans were purchasing from Canada. The government t fore placed an import prohibition on many U.S. commod Others were admitted only on a quota basis. Canadian ple travel in the U.S. was limited to $150 annually. A 25% cise tax was placed on nonessential consumer goods largely from U.S. components. U.S. branch plants in Ca were encouraged to manufacture parts for completed ar made by their industry in the United States.

During the year some important changes were mad Canada's retailing practices. The government announc program of size and quality standardization of textiles, and shoes, plumbing fixtures, domestic weighing scales, ar other items. Dealers were required to state what kind of an provided the fur for a coat, no matter what fancy nam might be given. The department of trade and commerce also given power to say how certain goods would be packa displayed and sold.

**Employment.**—The number of persons working in Canad 1947 approached one-half the dominion's population. supply was high. In mid-October there were 102,000 oper registered with the national employment service compared 92,000 applications for jobs. At the peak of 1947 industrial seasonal activity, only 1.4% of Canada's total labour f was unemployed. On Oct. 1 the number employed in leading industries was 9% higher than at the same date in

Production throughout 1947 was so great that salaries wages during the first half of the year amounted to $2,8 000,000, an increase of $410,000,000 over 1946. More half the increase occurred in the manufacturing and tra groups, in which average weekly earnings rose steadily to $37.37 at Oct. 1, almost 13% higher than at Oct. 1, Farm wage rates on May 15 were at the highest levels that month in any year since statistics became availabl 1940.

However, taking a complete cross section of Canadian ployment, the average income of individual wage earners not increase so much as the total labour income, because number of paid workers increased so greatly. The rise living prices offset part of the increase in workers' incom

**Labour.**—Unions showed considerably more restraint in than in 1946. Up to the end of October there were only trikes, costing 2,400,000 man-working days. In the same eriod of 1946, strikes cost 4,500,000 man-working days.

In June the government introduced in parliament an Industrial Relations and Disputes Investigation act to codify its wn wartime legislation for 250,000 workers in interprovincial ndustries, which were under federal jurisdiction. The revision mbodied few new features, but the government expected it to ecome a model for provincial legislation. At the end of 1947, he bill was still in the committee stages.

**Industry.**—During the first five months of the year the flow f production was at a rate nearly 9% above the same period n 1946. Consumption of primary power continued to rise and n the first ten months of 1947 was 21% higher than in the imilar 1946 period. The gains in industrial production were due partly to a larger factory and mill-working force, and to edistribution of labour, but the most important factor was he greater and steadier flow of basic materials (chiefly steel) or durable goods. In the first ten months production of pig ron rose 47% and steel 30% over 1946. While gold production or the first eight months of 1947 was 7% greater than the ame period for 1946, the monthly average was considerably ess than the 1935-39 period. To stimulate production the government offered a subsidy to be paid on full production for the irst year and on partial production in the next two years of new mine's life. While there were 1947 production advances ver 1946 in copper (23%) and nickel (26%), there were production drops in zinc (13%), lead (12%) and silver (12%). Canada's important hematite iron ore mine at Steep Rock, Man., exceeded its 1947 production target by 10%, when it delivered 1,206,248 tons.

In the first four months of 1947, Canada's forest industries roduced about one-third of Canada's total export; 21% of he exports in the period were for pulp and paper alone. Newsprint production for the 11 months of 1947 increased 7% over he same months of 1946.

The value of all construction completed and in progress in 947 totalled $1,000,000,000. It was the largest amount ever pent in a year in Canada. The construction program was also more varied than previously. Despite these facts, there were notable deficiencies in housing and road building.

Dividend payments by Canadian companies in November vere $15,565,790 (Nov. 1946: $8,032,725; Nov. 1945: $6,562,652).

**Business and Finance.**—Although signs of deferment in consumer spending began to appear in July, total business turnover confounded the economic prophets who had predicted recession by midsummer. Department store buying for the first eight months of 1947 was 14% higher than for the 1946 period.

At the end of 1946 Canadians had $3,850,000,000 cash in banks, or about $300,000,000 more than in 1946; but the rate of saving was slower. Canada's first peacetime saving-bond issue went on sale on Oct. 15, 1946, and by July 31 Canadians had purchased and retained $471,708,350 of them. Between April 1 and Oct. 31, 1947, the national revenue department collected $175,000,000 more tax money than the budget had stimated.

Despite this buoyant situation, there were 402 commercial failures in the first nine months of 1947, compared with 147 in he same 1946 period. Defaulted liabilities totalled $7,100,000, 67% higher than in 1946. The government moved to investigate price-fixing combine operating in the dental-supply field, and began a preliminary investigation of prices in the baking industry.

**Food and Agriculture.**—Grain production dropped in 1947. Estimates (1946 revised estimates in brackets) placed wheat t 340,800,000 bu. (413,700,000 bu.), oats 282,700,000 bu. (371,100,000 bu.), barley 141,500,000 bu. (148,900,000 bu.), rye 13,200,000 bu. (8,800,000 bu.), mixed grain 35,700,000 bu. (53,000,000 bu.), flax 11,500,000 bu. (6,400,000 bu.). Beet-sugar tonnage dropped 18%. While the 1947 wheat crop had a value of $399,000,000 at the farms, a reduction of about $74,000,000 from 1946, the gross value of all principal field crops at farms was estimated to be $1,287,000,000, since the decline in volume was offset by price increases. It was about 3% more than 1946 and fifth highest in the 39-year-old field crop records. Net farm cash income for 1947 was estimated at close to the 1946 figure of $1,270,000,000.

The Canadian Wheat board continued to wield its emergency powers, which enabled it to pay farmers an initial $1.35 per bushel for wheat and sell it to other countries at world prices. The exception was the Canadian contract with the United Kingdom, where the price was the $1.35 per bushel. However, the price under the contract was increased during the year to $1.55 per bushel, which meant another $200,000,000 for farmers. Late in December the government announced that agreement had been reached with the United Kingdom providing not only for the continuance of the wheat agreement but also for the supplying of livestock products and raw materials.

**External Trade.**—There was continuing strong demand for Canadian products abroad, financed in part by credits ($327,508,000 to seven countries during the first seven months of 1947), which resulted in record peacetime totals for export trade. The figure was $4,920,000,000 for the first nine months of the year.

The peak of Canada's activities for trade expansion was its work at Geneva when Canadian delegates met with 25 nations to draw up a framework of general agreement on tariff and

PRES. TRUMAN with Prime Minister Mackenzie King at Ottawa in June 1947, during the first state visit of a U.S. president to Canada

trade. The Canadian delegation was in the forefront of the fight for removal of detrimental trade practices. More than 100 trade agreements were signed by the participating nations. Canada itself made 17 such agreements, which gained a reduction on a long list of manufactured goods and on many basic products of the farm, forest, fishery and mine.

Canadian delegates attended the Havana World Trade conference at the end of the year and pressed hard for complete acceptance of the International Trade organization charter, drafted at the preparatory conference in Geneva.

**Defense.**—The first important defense announcement came on Jan. 9, when 25 duplicated services in the 3 armed forces were consolidated, thus saving $250,000,000 annually. On Feb. 14 parliament approved an amendment to the Militia bill which limited the size of Canada's permanent peacetime army to 30,000 officers and men. The training program for reserves involved 40,000 additional men.

Air force changes included the reorganization of the dominion into two air commands instead of five, special glider training and the use of jet fighters and helicopters.

Naval strength was to be 7,500, though the actual strength fell about 700 short of that. Naval reserves were set at 6,000. Ships and men were divided between the two coasts. The aircraft carrier "Warrior" was retired to England in reserve and

EXPERIMENTAL STATION at Fort Churchill, Manitoba, showing the signal headquarters there of the Canadian army. The U.S.-Canadian military base was maintained in 1947 for cold-weather testing of equipment

replaced by the winterized aircraft carrier "Magnificent."

During the year the three armed services co-operate n
combined training at a joint air school. A triservice de e
college was organized at Kingston, Ont., to train senior of s
only. The course covered military, economic and indu l
organization. Cadet colleges for the three armed forces e
set up.

In November Canadian army medical officers began rece g
instructions on the treatment of atomic-bomb casualties.

**Transportation.**—Special legislation in parliament autho d
the crown-owned Canadian National railways to make $18,
000 of additions and betterments to its equipment and
chase $41,500,000 worth of new equipment. Reorganizatio
the Canadian Pacific railway established an autonomous Pa
region, which recognized the radical differences between op
tions in prairie territory and those in mountainous terri
The C.P.R. ordered $47,000,000 worth of new locomot
gondolas, freight and express cars; to facilitate freight han
in Montreal, it began expansion of terminal facilities and c
tion of the first "hump retarder" yard in Canada.

Both railways faced rising operating costs, and applied to
board of transport commissioners for permission to incr
freight rates 30%. The board travelled 7,000 mi., sat 150
and took 5,500,000 words of testimony. The hearings cl
Dec. 17 with a decision pending.

The crown-owned Trans-Canada Air Lines added 1,200
to its Canadian routes, extended service to 6 additional ci
and carried 50% more passengers and 35% more freight t
in 1946. A direct Toronto-Winnipeg route was establis
T.C.A.'s transatlantic Prestwick (Scotland) route continued
full operation, while a new weekly service was inaugurated
Shannon, Eire. T.C.A. also entered into an air pact
Portugal.

The government established a Canadian maritime com
sion, authorized to study Canada's coastal and transocean s
ping, and make comparisons with other countries.

**Communications.**—Despite materials shortages, the num
of telephones increased, and the mileage of telephone lines
tended. The board of governors of the Canadian Broadcast
corporation approved the construction of two new private ra
stations (which brought the number to 125). For the f
time in Canada, electric power wires were used to carry t
phone conversations. The experiment was in a sparsely sett
area of Quebec, through which a hydro service ran. To se
still more isolated areas in northern Manitoba, the Manit
Telephone system began the installation of a radio-teleph
service to mining communities and Hudson's Bay company f
trade posts. Two-way frequency modulation radio commu
cation was used to co-ordinate the activities of a major sum
log drive in northwestern Ontario. Power line repair crews
Nova Scotia were similarly equipped to speed operations.

**Arctic Developments.**—The royal Canadian air force s
veyed more than 400,000 sq.mi. of hitherto unmapped arc
territory, taking 95,000 photographs. Experimental flights w
carried out to test fuel and aircraft engineering. A joint U
Canadian project established two of nine projected weath
reporting stations, one on Ellesmere Island at Eureka sound a
the second on Cornwallis Island at Resolute bay. By Dece
ber both stations were reporting four times daily. In additi
the U.S.-Canadian technicians constructed two low-frequen
long-range radar stations, one at Point Barrow, Alaska, and o
on Victoria Island at Cambridge Bay, N.W. Terr. The gover
ment purchased the war-famed "Crimson air route" across t
eastern arctic.

Two Canadian scientists trapped spores, some of which cau
plant diseases, in mile-high air over the Arctic ocean. The s

ntists were surprised to find them in such relative abundance. nother Canadian scientist, using a Canadian-devised electronic strument for making precise observations, discovered that e north magnetic pole had shifted about 200 mi. north and at it centred roughly at latitude 73° N., longitude 96° W.

**Frontier Developments.**—Canada's frontier development as far from over, a fact emphasized by the charter parliament ranted for the construction of a railway between the Gulf of . Lawrence and Ungava bay in Quebec. In the consideration age was the extension of the Canadian Pacific railway to ellowknife, N.W. Terr., and a railway from Vancouver, B.C., Fairbanks, Alaska. The only active railway construction was e 55-mi., $2,684,000 line from Barraute to Kiask Falls in orthern Quebec, to tap vast resources of pulpwood in the Hud- on bay watershed.

Besides power projects in the more settled Ontario and Que- ec regions, surveys were laid for a 385,000-h.p. station on the aniapiskau river in the Ungava area of northern Quebec. This as to supply electric energy for exploiting the new Labrador on discoveries. Wilderness pulp and paper towns were under onstruction at Blind River, Schreiber, Terrace Bay and Red ock, in Ontario.

**Tourism.**—While in 1946 United States tourists left $280,- 00,000 in Canada, they left an estimated $400,000,000 during 947, the biggest tourist year. During the first ten-month period 1947, 1,557,784 automobiles entered Canada, 12.6% more an for the same 1946 period. With tourism becoming estab- shed as one of Canada's major industries, the various prov- ces took steps not only to encourage more tourists but to rotect them against exploitation. The advertising of tourist mp operators in Ontario came under government supervision. ublic accommodation in New Brunswick was placed under rovincial control.

**World War II.**—The Canadian government announced that anada had withdrawn its occupation troops from Germany ecause Canada was given no voice in directing postwar Ger- an control policy. The last draft of Canadian soldiers re- rned home from overseas on Jan. 14. In September the state war existing between Canada and Italy, Rumania, Hungary nd Finland ended with the ratification of peace treaties. At e same time Canada asked full participation in the pending eace settlements with Germany and Japan. From Aug. 1945 Aug. 1947 Canadian military officers travelled far abroad vestigating and arranging for the prosecution of axis na- onals involved in war crimes against Canadians. By Sept. 1 ere were still 66 such war criminals whose trials and punish- ents were pending. In May the government announced that orld War II cost Canadians $20,255,865,996, or $1,688 per pita. On Aug. 31 there were 97,729 World War II pensioners ceiving annually $35,136,407 (Aug. 31, 1946: 66,677 pen- oners receiving $26,996,039). By the end of 1947 the Cana- an mint had not finished striking 3,356,000 medals for service four continents and two oceans.

**Human Rights.**—So many Canadians protested the govern- ent's compulsory Japanese-Canadian deportation order that was cancelled on Jan. 24. By a vote of 105 to 31, parliament proved a government order which permitted Canadian-Japa- se to move freely anywhere in Canada except in British Co- mbia. Toward the end of the year a royal commission opened enquiry into more than 1,000 Canadian-Japanese claims in- lving about $3,000,000 worth of property, which their former wners claimed had been forcibly sold for less than its real lue. The government repealed the Chinese Immigration act d permitted wives and unmarried children living in China to ove to Canada.

A joint parliamentary committee on human rights and fundamental freedoms studied the possibility of a comprehensive federal "Bill of Rights," but the question remained in the committee stages.

**Science.**—On May 8, the Canadian Atomic Energy Control board announced that $150,000 would be granted to three Canadian universities for research into peacetime use of atomic energy. On that date, Canada's atomic-energy plant at Chalk River, Ont., had a chain-reacting pile in operation and was stocking up small amounts of plutonium. By September the plant was producing radio-isotopes.

Canadian mineralogists were active. Work with magnesium, lightest of structural metals, was abreast or ahead of that in any other part of the world. A magnetic air-borne mineral detector was used in the Ottawa valley to discover iron-ore deposits. A Canadian steel mill inaugurated the process of blowing air through molten pig iron to speed purification of steel.

The National Research council built a laboratory in Saskatoon, Sask., for research into industrial uses of farm products. The council conducted extensive research into the properties and possibilities of cosmic rays, and developed a radar meter which enabled an aircraft pilot to read his distance in miles from a point on the ground.

**Medicine and Health.**—The National Cancer Institute of Canada was organized to co-ordinate and plan a campaign of cancer control. The health and welfare department called into conference experts on rheumatism and arthritis to lay the ground work for a co-ordinated national campaign against those diseases. Ontario blazed a health trail for Canada in October when it announced free prenatal examination. The province also took steps to appoint a staff dentist to every county health unit. Toward the end of the year the Ontario Medical association launched a prepaid medical care scheme, broader than most schemes because it provided attention for known chronic ailments. The Canadian Red Cross society established a peacetime blood transfusion bank for civilian use, making Canada the first nation in the world to take this step.

**Education.**—Soaring expenses forced the University of Toronto to boost its tuition fee 20%. As partial compensation, $50,000 a year was set aside to establish new bursaries. The Universities of Manitoba, Dalhousie and St. Francois Xavier also announced proportionate increases in fees, although Manitoba's was confined to the medical course. Construction of a $1,200,000 library for the University of Alberta, part of a $20,000,000, six-year program, was begun. Initiated by the Canadian Education association, and financed by contributions from business and labour, a new Canadian research committee was set up to provide education authorities with objective data and scientific directives for adapting the work of schools to the needs of the day. Schooling costs for veterans' rehabilitation were running at the rate of $4,000,000 monthly in 1947.

**Culture and Awards.**—Preservation of the best examples of early architecture in the province was the aim of the Architectural Conservancy of Ontario, which was reformed after a lapse of six years caused by World War II. The Canadian Museum association was formed to promote better education in Canada through museums.

For the first time in Canadian history, a governor-general had his paintings shown in a Canadian art exhibition. A Montreal commercial artist, Henry Eveleigh, won the United Nations international Poster-of-the-year competition, with a pair of hands planting a young tree, the leaves of which were the flags of the 55 members of the United Nations. The first step toward the formation of a national musical organization was taken in November when Ottawa musicians organized a Canadian Federation of Music Clubs. An effort was made to establish a national clearing house of research and technical information on community centres within the department of national health and welfare, but action was still pending at the end of the year.

(*See* also articles on individual Canadian provinces; CANALS AND INLAND WATERWAYS; CHAMBERS OF COMMERCE; CONSUMER CREDIT; ELECTRICAL INDUSTRIES; ELECTRIC TRANSPORTATION; FISHERIES; HORSE RACING; HOUSING; INDUSTRIAL HEALTH; MOTION PICTURES; MOTOR TRANSPORTATION; NEWSPAPERS AND MAGAZINES; POST OFFICE; PUBLIC UTILITIES; RIVERS AND HARBOURS; RURAL ELECTRIFICATION; SOCIAL SECURITY; THEATRE; VETERANS' ORGANIZATIONS; WILDLIFE CONSERVATION.) (C. CY.)

## Canadian Literature.

**Fiction.**—A notable fiction event was the appearance in English of Gabrielle Roy's *The Tin Flute* (published in 1946 in French under the title *Bonheur d'Occasion*), which hit the best-seller lists and sold to Hollywood. It described semi-slum life in Montreal with sober insight. A second outstanding event was the joint winning of the annual $1,000 Ryerson fiction award by Edward A. McCourt with *Music at the Close,* a story of a frustrated boy growing up on the Canadian prairies, and by Will R. Bird with *Judgment Glen,* a historical novel of Yorkshire settlers in Nova Scotia in the 18th century. Another dual award divided the $1,000 Oxford-Crowell novel competition for Canadian writers between Christine van der Mark with *In Due Season,* modern pioneer farming in northern Alberta, and Angeline Hango with *Truthfully Yours,* modern rural life in Quebec. *Shreds of Circumstance,* by Madge Macbeth, sophisticated in treatment and cosmopolitan in setting, described the plight of displaced persons. Grace Campbell's *Fresh Wind Blowing* was the story of young Canadians whose lives were shattered or changed by World War II. *Of This Day's Journey,* by Constance Beresford-Howe, described a post-World War II college faculty that took refuge behind the traditional "ivied walls." *Deep Doorways,* by Dorothy Dumbrille, chose the problems of Canadians living between two world wars. *Trees Grow Tall,* by Irene Perrot, was a contrasting character study between a violinist-composer and a concert soprano. Historical novels of the year included Maida Parlow French's *All This to Keep,* pioneering in upper Canada at the end of the 18th century, Alan Sullivan's *The Fur Masters,* the struggle between Hudson's Bay company and the North West company, and Edward A. McCourt's *The Flaming Hour,* the 1885 Riel rebellion in Alberta.

Several first novels of importance appeared. *Hetty Dorval,* by Ethel Wilson, was a penetrating if short character study with settings in British Columbia and England. *Serpent's Tooth,* by Isabelle Hughes, was an ironic treatment of family life in Toronto. *Sarah Binks,* by Paul Hiebert, was a satirical novel about contemporary Canadian culture, with settings in Saskatchewan. *Fortress North,* by E. Jacoby Walker, fictionalized the history of Edmonton, Alta., from 1795 to 1943. *The Higher Loyalty,* by Don Synge (pseudonym of H. N. Edelstein), was a plea for racial tolerance, with settings in Ottawa and Montreal. Roderick Stuart Kennedy wrote about World War I in England in *The Road South.* Lionel Shapiro's *The Sealed Verdict* was a melodramatic story of racial conflict with a U.S. prosecutor at the World War II nazi war crimes trials as protagonist.

Several books of short stories were published during the year. Most striking was Thomas Raddall's *The Wedding Gift,* a collection of 15 short stories all based on incidents from Nova Scotian history. Desmond Pacey edited *A Book of Canadian Stories,* a collection of the work of 37 Canadian writers.

**Nonfiction.**—More political, economic, historical, sociological and similar books were published in 1947 than ever before. Most striking biography of the year was W. R. Plewman's *Adam Beck and the Ontario Hydro,* which was not on story of a great Canadian but also reported the struggle be private interests and public ownership in hydroelectric Most important literary biography was *Edwin J. Pratt Man And His Poetry,* by H. W. Wells and Carl F. Klin indispensable critical study of Canada's greatest contem poet. Corolyn Cox's *Canadian Strength* was a series of dian biographies, the subjects being the chief figures of th time departments of the government. *An Infinity of Que* by C. J. Eustace, was another biographical series, desc five modern women who were exponents of the religion and the art of religion. C. B. Sissons completed his exha account of *Egerton Ryerson* with a second volume. *F Time Is at Hand,* by R. S. Lambert, recounted the care Henry Wentworth Monk, sometimes called "The Proph Ottawa." In *The Talking Wire,* O. J. Stevenson told the of Alexander Graham Bell, inventor of the telephone.

Canada and the British commonwealth were popular sub Alexander Brady's *Democracy in the Dominions* traced th velopments of democratic institutions in Canada, Aust New Zealand and South Africa. Gwendolen Carter's *The B Commonwealth and International Security* dealt with effo the members of the commonwealth to achieve security i period between World War I and World War II.

Several nonfiction books were singularly different. *The of Samuel Marchbanks,* by Robertson Davies, was a colle of clever reflections by a newspaper editor on various phas Canadian life. *The Diary of Our Own Pepys,* by E. W. rold, was a similar collection, published posthumously edited by I. Norman Smith. *Consider Her Ways,* by Fred Philip Grove, became a unique satiric commentary on ma reporting on the activities of ants. Duncan Campbell Scott lished his last book, *The Circle of Affection,* a number o choicest poems and short stories covering 50 years.

There were many regional books. *The Great Mackenzi* Raymond Arthur Davies, featured the Mackenzie river, lo in Canada. *The New North-West,* edited by C. A. Da contained material on many phases of arctic life—geogra transportation, health, mining, trade, education. *Alaska B ons,* by Marius Barbeau, was a new interpretation of Al based on the theory of Asiatic beginnings of Indian fo *Cache Lake Country,* by John J. Rowlands, faithfully ch cled life and living in the north woods. Canada's gold mi was the subject of Arnold Hoffman's *Free Gold.* In the *known Mountain,* Don Munday described the conquest of 000-ft. Mount Waddington in the Canadian Rockies. F nature book of the year was a fascinating study of Cana songbirds and their habits, *Flashing Wings,* by Richard Saunders. In *Return to the River,* Roderick L. Haig-Br fictionized the life history of a Chinook salmon which spawn the Columbia river.

There were several books of lively humour. Eric Pat Nicol saw *Sense and Nonsense* in Canada's way of life. E neth C. Cragg laughed at *Father on the Farm* in Ontario in early 1900's. *The Owl Pen,* by Kenneth McNeill Wells, scribed the hilarious, if sometimes painful, adventures of city-dwellers making a home in the country. *Face Powder Gunpowder,* by Jean M. Ellis and Isabel Dingman, was a hu ous treatment of a Red Cross welfare officer's experience World War II. Most unique World War II book was Mi Shulman's *Defeat in the West,* which described the German lapse, using thousands of official German documents and in views with German generals. *Maple Leaf Up, Maple L Down,* by Peter Simonds, recalled first Canadian army op tions in western Europe.

There were miscellaneous nonfiction books of interest.

V.O.N., John Murray Gibbon described a half century of heroic work by the Victorian Order of Nurses in Canada's battle for ealth. *Faces of Destiny,* by Yousuf Karsh, Canadian photogapher of international fame, contained 75 photographs of outtanding world citizens with personality notes by Karsh. Glenn I. Campbell wrote *The Campbells Are Coming* to give Canalian-born Campbells details of their clan history in Scotland. *Men in Sheepskin Coats,* by Vera Lysenko, told the story of he migration of Ukrainians to Canada and their participation n Canadian life.

**Poetry.**—E. J. Pratt's *Behind the Log* was significant narraive verse describing a great sea battle along the Murmansk oute during World War II. Major poets appearing during the ear were: Charles Bruce, *The Flowing Summer;* Raymond Souster, *Go To Sleep, World;* Dorothy Livesay, *Poems For People;* Arthur S. Bourinot, *Collected Poems;* Nathan Ralph, *Coffee and Bitters;* Patrick Anderson, *The White Centre.*

**Juveniles.**—One of the best juveniles of the year was Anne I. Grierson's *The Mounties,* which described some exploits of the amous royal Canadian mounted police. John F. Hayes wrote a ively historical adventure novel, *Buckskin Colonist,* based on he settlement of the Red River valley by Scottish immigrants n 1812. Archer Wallace published *One Hundred Stories for Boys,* all of them highlighted by human interest material. A. E. Wilson's *The Earth Beneath Our Feet* dramatized geology. Ida Cecil Moore's *Lucky Orphan* gave an appealing picture of farm ife in Prince Edward Island. Gordon Sinclair's *Signposts to Adventure* took the young reader through many parts of the vorld. Hilda Mary Hooke's *Thunder in the Mountains* collected Canadian legends. *Canadian Magic,* by Mary F. Moore, reported unusual incidents in Canadian history. (*See* also LITERARY PRIZES.) (C. CY.)

**Canadian-U.S. War Committees:** *see* PERMANENT JOINT BOARD ON DEFENSE.

## Canals and Inland Waterways.

Of the estimated 65,000 mi. of potential nland waterways in the United States, approximately 30,000 ni. had been improved in 1947 for navigation by commercial nd pleasure craft. All operations and maintenance of the sysem remained the responsibility of the corps of engineers, deartment of the army, under the direction of congress.

Principal components of the over-all, interrelated system of ivers, lakes, bays and canals included the Great Lakes, the Mississippi river system, the Illinois waterway, the New York tate canal system, the Cape Cod canal, the Chesapeake and Delaware canal, the Atlantic Intracoastal waterway, the Gulf ntracoastal waterway, the Sacramento river system and the Columbia river system.

The River and Harbor act approved July 31, 1947, provided unds for the construction of 58 authorized projects in 27 tates, bringing the total number of active projects for waterborne commerce in the United States to 1,100. Among the rincipal projects on which construction was begun or continued luring the year were the McNary (Umatilla) dam on the Coumbia river in the interest of navigation, power development nd irrigation; the New York and New Jersey channels; Gulf ntracoastal waterway between Corpus Christi, Tex., and the Mexican border; the Neches and Angelina rivers and the Sabine-Neches waterway in Texas; lateral canal and lock project on he Mississippi river at Chain of Rocks, near St. Louis, Mo.; pen-river regulating works on the Mississippi river between the Ohio and Missouri rivers, and Missouri river between its mouth nd Sioux City, Ia.; Calcasieu river and Pass, La.; Delaware iver from Philadelphia, Pa., to the sea; St. Mary's river and Keweensew waterway, Mich.; Cape Fear river at and below Wilmington, N.C.; and Winyah bay, S.C. (*See* also FLOODS AND FLOOD CONTROL; RIVERS AND HARBOURS.)

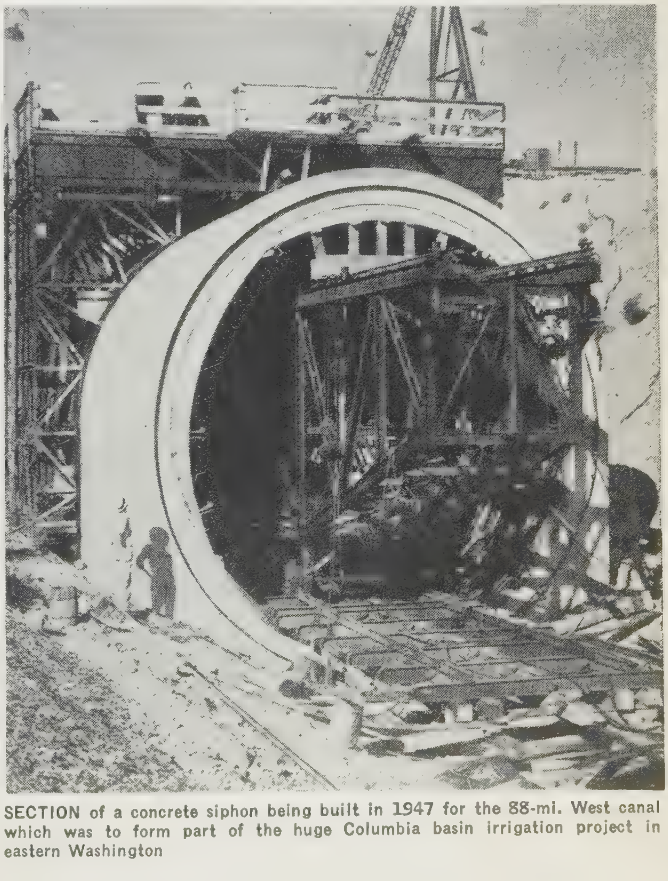
The total net water-borne commerce of the U.S., eliminating all known duplications of traffic between rivers and ports, aggregated 617,955,391 short tons in the calendar year 1946 (latest figures available in 1947). A total of 123,290,879 short tons (gross) was carried on the Mississippi river and its tributaries. On the Great Lakes, 314,510,421 short tons (gross) were transported, with the Detroit river, a connecting channel between Lakes Huron and Erie, carrying 110,863,556 short tons, and the St. Mary's Falls canal, connecting Lakes Superior and Huron in Michigan, carrying 91,586,895 short tons. The New York state canal system, including the old Erie canal connecting the Hudson river with Lake Erie, carried 2,820,521 short tons.

In net tonnage, the ten leading ocean ports in 1946 were: New York, N.Y., 108,553,342; Philadelphia harbour, Pa., 32,779,932; Baltimore, Md., 32,195,348; Houston, Tex., 31,837,453; New Orleans, La., 24,207,733; Beaumont, Tex., 23,052,108; Port Arthur, Tex., 20,177,288; Norfolk, Va., 16,041,678; Boston, Mass., 15,008,334; Los Angeles, Calif., 14,488,796.

Net tonnage of the five leading ports on the Great Lakes in 1946 were: Duluth, Minn.-Superior, Wis., 54,285,385; Toledo, O., 30,051,026; Chicago, Ill., 18,925,928; Cleveland, O., 16,539,046; Buffalo, N.Y., 16,150,366.

The total ton-mileage on the Great Lakes was 96,022,046,000. On the Mississippi river system it was 18,358,220,000. The combined ton-mileage on all inland waterways was 123,973,219,000. (G. HB.)

**Canada.**—At its 1947 session parliament voted $3,577,100 for the operation, maintenance and administration of Canada's 1,844 mi. of canal routes (535 mi. being actual canals and locks). During the parliamentary debate the department of transport was urged to canalize 900 mi. of the Saskatchewan river, which would permit vessels to travel from Winnipeg to



SECTION of a concrete siphon being built in 1947 for the 88-mi. West canal which was to form part of the huge Columbia basin irrigation project in eastern Washington

Edmonton via Lake Winnipeg. Deepening a short section of the Richelieu canal from 6 to 12 ft. was considered, but tabled. The economic value of the Rideau canal was questioned, and the department maintained it was important for tourist traffic. During 1946 it had been used by 16,382 such craft.

The St. Lawrence seaway continued in the news and Ontario Premier George A. Drew declared Ontario might try to proceed with power developments on its own if international action were not forthcoming. At the annual meeting of the Geological Society of America in Ottawa in December, Charles P. Berkey, professor of geology at Columbia university, claimed that the 1944 earthquake at Cornwall presaged immense engineering difficulty when the seaway was constructed. He said his personal investigation indicated that geologic faults and sand deposits would require special techniques to make the proposed dam, locks and powerhouses earthquake-proof.

Tonnages taken up and down through the three major canals and over the entire canal system from the opening of navigation in April to the end of Nov. 1947 and compared with the full 1946 season (April to December, inclusive, in parenthesis) were: Sault Ste. Marie, 2,062,172 (1,940,129); Welland Ship, 11,381,069 (10,580,146); St. Lawrence, 7,145,507 (5,750,578); total for system, 20,986,593 (18,654,919). (C. Cy.)

**Great Britain.**—In Britain, the canal system was to be nationalized under the Transport act, 1947. As soon as capital works were permitted, development toward standardization would be pursued, as the great variety of lock sizes conditioned the size and type of craft employed. Because of the shortage of craft, immediate attention was being given to terminal facilities to expedite the turn-round. In this connection, it was found that the largest craft did not necessarily carry the greatest tonnage over a given period.

**Europe.**—The prolonged drought in Europe during the summer and autumn of 1947 closed numerous small canals, some of which had been previously damaged in the spring floods. The repairs of European works damaged by war action continued, and great efforts had been made to prevent a disastrous transportation crisis in the winter of 1947–48. After World War II, however, the most important work toward re-establishing lines of communication was carried out by E.C.I.T.O. (European Central Inland Transport organization), whose sudden ending in June 1947 terminated an excellent attempt at international co-operation. Through the machinery of this organization, the waterways relieved the overloaded railroads and promoted the rapid liquidation of the effects of war.

In Greece, the reconstruction of the Corinth canal was to be undertaken by the U.S.A. aid mission. In the U.S.S.R., a new canal from the Kama river to the Petchora river was planned to provide an outlet to the Barents sea. German reports indicated a new canal link between the Elbe river and Doemitz and the Baltic port of Wismar. (*See* also AQUEDUCTS.)

(D. G. Ds.)

## Cancer.

By 1947 S. A. Henry had collected more than 3,300 cases of tar cancer in which most of the patients worked with tar, pitch or lubricating oils. The mortality of the disease was still high, and it was strange that the simple prophylaxis of soap-and-water cleanliness of the body had only moderately reduced the incidence of the trouble. In the United States, while the disease had been known to occur, the number of cases remained extremely small. On the other hand, some occupational cancers of the bladder had been described in the U.S. in considerable numbers among those exposed to inhaling dust in the manufacture of certain aniline dyes.

An estimated 600 cancer-forming compounds had been discovered by 1947. Most of these had no relationship to human cancer, but when suitably applied produced cancer in One unpleasant discovery was early made that cancer develop in burns following excessive doses of X-ray or ra or in patients who had been treated with a thorium com which was slightly radioactive. This material was us diagnosis by injection to demonstrate changes which mig revealed by X-ray pictures. Another compound, urethane been used in the treatment of leucaemia, but was fou cause cancer of the lung in mice. Such a drug should n used in human beings, except in usually fatal diseases leucaemia; urethane can then replace X-ray, the ordinary ment, in case the patient has no access to X-ray.

Studies on mustard gas, conducted during World Wa resulted in the production of a considerable number of pounds of this same group. Some were found to be bene in treating leucaemia in animals, but the danger in thei would probably prevent any extensive application in h beings.

The fact that extracts of human and animal tissues injected into mice will give rise to cancer in these animals tinued to be the subject of much study, without any final clusion. It still seemed possible that various chemical proc had altered the extract so that carcinogenic substances produced.

There was no question that heating cholesterol, a constit of most of these extracts, will change this normal constit of the body into one which produces cancer, and this le experiments in which ordinary food materials may bec carcinogenic. Thus, a few tumours were produced in mic injecting cholesterol, fats, oils and other food products he to a temperature of 300° C. The carcinogenic substance is p ably present in minute quantities. The question was raise to the possibility that cancer of the stomach might be ca by consumption of food cooked at a high temperature, but amount of such carcinogenic substances was believed t small; when swallowed, they are not necessarily absorbed the circulation. This was, however, one explanation offered the carcinogenic properties of organ extracts.

**X-Ray and Radium.**—An interesting study was condu by Egon Lorenz and others on the tolerance of animals for longed exposures to a moderate amount of short-wave le gamma-rays, such as are met in handling radium and voltage X-rays. Most of the studies were carried out u radium and daily exposures of from 8 hr. to 24 hr. on m guinea pigs and rabbits. The results showed that it was of p mount importance not to exceed the permissible dose of roentgen unit per day. Lorenz and his associates found tha animals the blood picture is not of much value in determin low-intensity continuous exposures, but these exposures w still capable of causing death of the animals. Also they ca attention to the fact that ovarian tumours in mice were related with low exposures and therefore suggested that wor operators should be limited to 0.02 roentgen unit per day. writers also suggested that daily exposures of short durat over long periods of time should be avoided.

John H. Walker and Milford D. Schulz reported about 1 of five-year cures in cancer of the tonsil. Slightly better res were obtained using 1,000,000-volt X-ray as compared w 200 kv. Despite the presence of new cancers elsewhere in body, called metastases, a certain number of patients obtai satisfactory relief from pain and other symptoms. The use radium in the tissues exerted no noticeable improvement in results.

**Estrogens and Neoplasia.**—The use of large doses of m sex hormone in persons with inoperable or recurrent carcino of the breast had not produced results nearly so striking ose initiated by C. Huggins' discovery of the clinical control, not the cure, of carcinoma of the prostate by the administraon of the female sex hormone or the synthetic product, lbestrol.

(*See* also BIOCHEMISTRY; PUBLIC HEALTH SERVICES.)

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## andy.

Sales of candy in the United States during 1947 reached the all-time high of $1,000,000,000 at the olesale level—a gain of almost 40% over 1946 sales of $687,-o,000. Expressed in volume, the 1947 confectionery business ounted to approximately 2,700,000,000 lb., compared with 438,000,000 lb. of candy sold in 1946. The average value at olesale per pound was above 36 cents, compared with 28.2 nts recorded in 1946.

The major development in the industry during 1947 was the mination of sugar rationing in July. For the first quarter of e year candy manufacturers received 60% of base period use, hile for the second quarter the quota was 75%. As a result, les of candy showed a greater increase in the second half of e year than in the first.

Another significant event was the upward spiralling of cocoa an prices which forced the industry to abandon the traditional cent price of nickel candies throughout the United States. her major developments were: (1) the end of price and all her controls; (2) the introduction of new processes and maines, which included a new method to make marshmallow, w coating equipment and new types of wrapping machines; ) the launching of a research program with emphasis on find- a solution to the problem of chocolate bloom; (4) the foration of the American Association of Candy Technologists; ) the expanding of markets by the industry; (6) the decenalization of candy plants and (7) the changing over of a eater number of candy plants from regional to national stribution.

Cocoa bean prices in 1947 reached an all-time high of 50 nts per pound. Generally poor crops and unstable world contions were largely responsible for the rise. As a means of minating these conditions on a long-range scale, the U.S. ocolate industry decided to develop cocoa bean plantations in e U.S. Pacific islands.

For the fourth successive year, bar type candies represented ore than half of the industry's tonnage. Of these 5-cent, cent and 7-cent bars (hitherto sold at 5 cents) amounted to out 90%. Despite the high prices of cocoa beans, chocolatevered bars represented the largest item in this category, reprenting, in fact, a greater volume than the combined sales of other bars. However, a noticeable increase in hard candy d other nonchocolate confections was recorded in 1947. The cond largest classification of candy sold was bulk goods, reprenting about 20% of the total. Package goods came third with out 15%. Penny goods were practically nonavailable. There s a return in large quantities of Christmas and other holiday ecialties, such as candy canes, hollow moulded goods, hard ndy mixed and jelly beans.

Production of candy in the United States continued to be ntred in a region extending from New England westward rough Illinois and southward through Virginia. The 18 states lus the District of Columbia) comprising this section of the untry produced 85% of the U.S. candy in 1947. Consumpn was also heaviest in this region, amounting to about 55% of the total production. The remainder of the country produced only 15% and consumed 45% of the national output. The candy industry employed 65,000 persons, mostly women.

While the United States continued to be the greatest candy-producing and -consuming country in the world, other nations for the first time since World War II began to produce candies in large quantities. The most successful European country to reestablish itself in the candy field in 1947 was the Netherlands, and large quantities of the production found its way to the United States. France, Italy, Denmark, Belgium and even Germany were again making candy in 1947. Next to the United States, Great Britain continued to be the most important candy-producing and -consuming country in the world with its per capita consumption amounting to approximately 22 lb. It was estimated that total exports for 1947 amounted to less than $2,000,000; imports exceeded exports. (H. D. G.)

**Cane Sugar:** *see* SUGAR.

## Canning Industry.

The United States and territorial pack of canned fruits, juices, vegetables, fish and milk in 1947 totalled about 450,000,000 standard cases, compared with 495,000,000 standard cases in 1946. These figures do not include the pack of fruit and vegetable specialties such as baked beans, soup, spaghetti and baby food, nor the considerable quantities of canned meat, poultry and other specialty products packed by the canning industry. Preliminary statistics for the 1947 pack compared with 1946, in terms of millions of standard cases, are as follows:

| | 1947 | 1946 | | 1947 | 1946 |
|---|---|---|---|---|---|
| Fruits . . . . . . . . | 65.0 | 82.2 | Milk . . . . . . . . . | 79.0 | 73.5 |
| Fruit juices. . . . . . | 80.0 | 75.7 | Fish . . . . . . . . . | 21.0 | 20.5 |
| Vegetables . . . . . | 205.0 | 243.0 | | | |

COMMUNITY CANNING CENTRE at Berkeley, Calif. An instructor is aiding a patron to place cans of blanched beans in the exhaust box

The record 1946 pack of canned fruits and vegetables, together with a small carry-over, provided a record high supply for the 1946–47 marketing season. The 1947 fruit and vegetable packs were expected to be about 10% below the 1946 total, in part because of unfavourable weather conditions. However, the supply for the season was estimated to be about the same as in 1946–47 because of the higher carry-over supplies.

Retail prices of canned fruits and vegetables declined steadily during 1947, as contrasted with the sharp upward trend in food prices generally. In late fall, prices were about the same as a year earlier and, compared with prewar relationships, considerably cheaper at retail than other foods. According to bureau of labour statistics information, the index of prices of canned fruits and vegetables was 155% of the prewar level compared with 202% for all foods.

The still existing shortage in world tin production coupled with high demands for this commodity led to congressional extension of authority to allocate tin and tin products. The authority which existed at the end of the year would extend to Feb. 29, 1948, and the administration had requested a further extension.

The U.S. department of commerce, responsible for administering tin controls, announced its intention of re-establishing quotas limiting the quantities of tin-coated containers for use in animal foods, coffee, beer and nonfood items, but quota restrictions on containers for foods for human consumption were not contemplated. The government maintained a maximum quota figure of 32,000 tons of tin during 1947 for the manufacture of tinplate and tin-mill products.

Can size controls were removed in March, 1947, thus reinstating the provisions of the voluntary simplified practice program promulgated in 1940 under the auspices of the division of simplified practice of the National Bureau of Standards. This program was thereupon subjected to review by an industry committee to determine its adequacy from the standpoint of production economy and consumer preference of can sizes.

(E. J. C.)

**Canterbury, Archbishop of:** *see* FISHER, GEOFFREY FRANCIS.

**Cape Verde Islands:** *see* PORTUGUESE COLONIAL EMPIRE.

**Carbon Black.** Increasing demand for carbon black brought output and sales to new record highs in 1946 for the third successive year. The salient features of the industry in the United States are outlined in the following table.

*Data of Carbon Black Industry in the U.S., 1941-46*

(Short tons)

| | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|
| Production . . . | 297,033 | 287,003 | 296,711 | 400,930 | 526,399 | 622,211 |
| Year-end stocks . | 59,429 | 121,378 | 102,108 | 34,622 | 51,003 | 38,114 |
| Total sales . . . | 322,372 | 224,966 | 314,650 | 468,715 | 510,018 | 634,870 |
| Export sales. . | 74,083 | 57,818 | 52,456 | 78,496 | 86,887 | 135,543 |
| Domestic sales . | 248,290 | 167,148 | 262,194 | 390,219 | 423,131 | 499,328 |
| Rubber. . . | 219,751 | 147,974 | 236,737 | 369,015 | 402,193 | 470,732 |
| Ink . . . . | 19,099 | 9,616 | 11,765 | 12,239 | 11,412 | 14,781 |
| Paint . . . | 2,920 | 1,808 | 1,972 | 2,658 | 3,711 | 4,656 |
| Other uses . | 11,520 | 7,750 | 11,720 | 6,308 | 5,816 | 9,159 |
| Natural gas used* | 365,377 | 335,533 | 315,562 | 355,770 | 431,830 | 478,349 |
| Average yield† . | 1.63 | 1.71 | 1.88 | 2.20 | 2.32 | 2.44 |
| Average value‡ . | 3.26 | 3.41 | 3.41 | 3.67 | 4.02 | 4.82 |

*Millions of cubic feet. †Pounds per thousand cubic feet. ‡Cents per pound.

The rubber industry is the dominant consumer of carbon black, taking 94% of domestic sales in 1946. Consumption in rubber practically doubled after 1943, and was still growing.

(G. A. Ro.)

**Caribbean Commission:** *see* WEST INDIES.

**Carnegie Trusts:** *see* SOCIETIES AND ASSOCIATIONS.

**Caroline Islands:** *see* TRUSTEE TERRITORIES.

**Cartography.** The wartime stimulus to map making through 1947 and was reflected in t tinued demand for maps by a map-conscious public an production of a large number of maps by both governm private agencies. As a result of World War II cartogra rapidly losing its nationalistic aspects and was becoming factor in international co-operation. The events of 1 cartography reflect this trend.

**International Map of the World.**—The central bur the International Map of the World, which was dormant the war years, was reconstituted during 1947 with headq at Chessington, England, a suburb of London. While ac of the bureau were limited, work on the International m carried on extensively by U.S. and British cartographic tions.

In the United States the outstanding event was the ann ment of the production by the U.S. army map service Hedin *Central Asia Atlas*. The sheets of this atlas, based Sven Hedin's exploratory work in western China and Tibe 1894 to 1933, had been first prepared in Germany by Perthes, Gotha, before the war. The work undertaken army map service in 1946 involved preparation of 11 new and revision of 2 of the sheets published at Gotha. The were to follow closely the style and symbolization f 1:1,000,000 International map and, in addition, would ir terrain features which are peculiar to the area and seldom on maps of this scale. The source material for the map sisted of voluminous notes, sketches, maps and terrestrial graphs produced by Dr. Hedin and members of the exped Supplementing this material were large-scale topographi veys of limited areas and maps, both published and manu by other explorers. The production of the atlas was operation with Dr. Hedin and his associates and was sch for completion in 1949.

The American Geographical society commenced a syst revision in 1947 of its recently completed millionth m Latin America. During the year five sheets were in wo revision from aerial photography and a large amount o data accumulated during the war.

The production of the millionth map of the United Sta the U.S. geological survey was carried on at an accelerated During 1947 work was initiated or continued on 10 which, when completed, would cover approximately one-th the country and would bring the total of published sheets

Production of the millionth map in Europe and Asia als carried on during the year at a pace that promised comp of the International Million map within a decade. Provi publication by the army map service of a number of milli scale maps of areas in Asia established the United States leader in this field during 1947.

Late in October 1946 the soviet newspaper *Pravda* anno the completion of the millionth map, consisting of 180 s covering the U.S.S.R. The maps, while not conforming in respect to the style and symbolization of the millionth ma such that they are acceptable as a soviet counterpart t International map. Unfortunately, although the U.S.S.R made public announcement of their availability, it had not sented these maps for sale or distribution.

**European and Near East Cartography.**—The Nationa hibit and Convention of Cartography and Optics, organize the Istituto Geografico Militare, L'Associazione Ottica Ita and La Commissione Geodetica Italiana on the occasion o 75th anniversary of the Istituto Geografico Militare, was he Firenze (Florence), Italy, Oct. 27 through Nov. 1. This r ing, with 21 nations represented, was the first large int tional congress in cartography after the war. The papers sented emphasized geodesy and photogrammetry.

At the meeting of a special commission of the International Geodetic association in Paris Oct. 15–17, announcement was made of the completion of the adjustment of the central European basic triangulation nets and a plan was discussed whereby such adjustments might be extended to cover all of Europe.

The first International Hydrographic conference after 1937 was held at Monte Carlo, principality of Monaco, from April 22 to May 5. Because of the world conflict, the conference, although scheduled for every five years, did not meet in 1942. Consequently, the 1947 meeting was concerned with a large accumulation of technical proposals. Uniformity of chart specifications, the adoption of newly developed electronic methods of position determination for charting and the standardization of geographic names on charts occupied a large portion of the agenda.

The political changes in the near east, culminating in the withdrawal of Great Britain from India, were directly reflected in the cartographic organization throughout the area. Throughout Egypt, Syria, Iran, Iraq and Afghanistan, the French and British influence or direction of survey work was erased and intense nationalistic interests became dominant. As a result of the conversion, the lack of experienced, trained personnel hampered the work of the newly established survey departments to such an extent that many were little beyond the paper stage. The fate of the survey of India, as a result of the partition of India, was a question of considerable speculation during 1947, until announcement was made of the establishment of separate survey departments of Pakistan and the dominion of India.

**Cartography in the United States.**—From a production and distribution standpoint, leadership in the cartographic field remained in the United States during 1947. Co-operative effort by the federal agencies producing maps resulted in the establishing of uniform, standard specifications for large-scale topographic maps. Along the same vein were the interagency agreements between both the civilian and military mapping agencies which clearly delineated the responsibility of each agency with regard to large-scale mapping in the United States. This agreement placed the responsibility for standard topographic surveys with the U.S. geological survey and thereby eliminated duplication of effort and variety of map styles that formerly resulted.

The U.S. board on geographical names, which had been a part of the office of the secretary of the interior from its establishment by executive order in 1890, was established under legislative act by the 80th congress as an official agency to formulate government place name policies and decisions. The board played an important part in the war in co-ordinating the place name work of federal mapping agencies, and, under the authority vested by congress in 1947, it would exercise considerable influence on U.S. cartography, both governmental and private.

The army map service, in co-operation with the U.S. geological survey, was at work on a 1:250,000-scale topographic map of the entire United States in 469 sheets.

The only map of the series published in 1947 was a preliminary edition of the sheet covering Washington, D.C. Sheets covering about one-quarter of the country were in various stages of compilation in 1947, and the entire series was scheduled for completion within a five-year period.

In 1947 two important series of index maps were issued by U.S. agencies. The coast and geodetic survey published two sets of indexes, one showing the basic triangulation nets and the other, the basic level nets. Each index, on a scale of about 1:650,000, covers a state, coverage for all states being available in 1947.

The U.S. geological survey instituted a series of indexes designed to present graphically the coverage of geologic maps by colour or symbol overprint on a planimetric base. Each index covers a state, the first, issued in 1947, being for the state of Wyoming.

MAP WORKER blanking out unessential section of a cruising map distributed through the Esso touring service

The 1:5,000,000 Map of the Americas produced by the American Geographical society was nearing completion. Of the five sheets planned, three were published in 1942 and the remaining sheets, covering North America, were completed in 1947 with publication expected early in 1948.

The hydrographic office, U.S. navy, published an *Atlas of Surface Currents of the Northeastern Pacific Ocean,* which was the fourth of a series planned to cover all the oceans. The atlas of 12 monthly charts shows current directions per unit degree square and is based on records of 30 years of observation. (*See* also COAST AND GEODETIC SURVEY; GEOGRAPHY; NATIONAL GEOGRAPHIC SOCIETY.) (W. E. Ds.)

**Catastrophes:** *see* DISASTERS.

**Catholic Church:** *see* ROMAN CATHOLIC CHURCH.

**Catholic Community Service, National:** *see* SOCIETIES AND ASSOCIATIONS.

**Catholic Library Association:** *see* SOCIETIES AND ASSOCIATIONS.

## Catholic Organizations for Youth.

The National Catholic Youth council is the single national co-ordinating body officially established by the Catholic bishops of the United States to unify Catholic youth programs of the country. It has two major divisions, one of which embraces community youth groups found during 1947 in the 122 dioceses and more than 20,000 local churches throughout the country. The other division of the N.C.Y.C. unites organizations of Catholic students on a national basis. The council's College and University section has for its major divisions the National Federation of Catholic College Students, comprising student groups in the 209 Catholic colleges and universities of the country and also the Newman Club federation, in which are affiliated 573 Catholic student groups on public and nonsectarian campuses.

The headquarters of the National Catholic Youth council is in the office of the youth department of the National Catholic Welfare conference at 1312 Massachusetts Ave., Washington 5, D.C. The N.C.W.C. Youth department is charged by the Catholic hierarchy with the development and supervision of the National Catholic Youth council. Its staff functions in the field of community and student youth work.

Both the Catholic College federation and the Newman federation held important national meetings during 1947. At Toledo, O., Catholic student delegates from Catholic institutions of the country came together for a three-day meeting on April 18th. A program of student action and closer co-operation with other student groups, both national and international, was enacted by this congress. On July 10 the Newman Club federation held its national convention at Houston, Tex., with a majority of the clubs throughout the country represented.

The first national conference on Catholic Youth Work convened May 19–21 in Cleveland, O. Under the auspices of Archbishop R. J. Cushing of Boston, Episcopal chairman of the youth department N.C.W.C., more than 700 clergy, professional youth leaders and lay sponsors came together to discuss problems in the field of Catholic youth work. Every major national Catholic youth organization was represented, together with executives and staff members of 67 diocesan or regional Catholic youth groups. Nine major phases of Catholic youth organization and programming were considered during the course of the conference. Plans were laid for the establishment of study groups which would arrive at findings and recommendations on problems affecting Catholic youth in the United States. Simultaneous with this conference there was a meeting of 119 Catholic scout chaplains who considered the organization of scouting under Catholic auspices.

Specific national Catholic youth-serving programs continued to sponsor activities for Catholic young people on local, regional and national levels. Following postwar adjustments, these national programs reported an increased membership and program extensions during the year. The following major national programs for Catholic youth evidenced increased activity in many areas: The Queen's Work (Sodality of Our Lady), 3115 S. Grand Blvd., St. Louis, Mo.; The Catholic Student Mission Crusade, Shattuck Ave., Cincinnati, O.; The Junior Catholic Daughters, 39 Manchester Terrace, Mt. Kisco, N.Y.; The Columbian Squires, 45 Wall St., New Haven, Conn.; The Catholic Central Verein, 3835 Westminster Place, St. Louis, Mo.; The Catholic Committee on Boy Scouts, 2 Park Ave., New York, N.Y.; The Junior Holy Name society, 141 E. 65th St., New York, N.Y.

*The Catholic Youth Directory* and *The Proceedings of the First Conference on Catholic Youth Work,* issued by the youth department of the National Catholic Welfare conference, contain a complete listing of Catholic youth-serving organizations
and the major problems and policies to which their at
was directed during the year. (C. E.

## Catholic Rural Life Conference, National.

Founded in 1923 by Bishop Edwin V. O'Hara and a g
priests, this national organization is dedicated to the ec
social and spiritual interests of the U.S. farmer. The c
tion adopted in 1944 pledged the conference to prom
well-being of the rural population by applying the princi
Catholic ethics to rural and agricultural problems a
strengthen and expound Catholic faith in rural districts.

The silver-jubilee convention was held at Lafayette,
Nov. 23–26, 1947. At the convention the conference rece
report from Bishop Aloisius J. Muench of Fargo, N.D.,
tolic visitator to Germany, on needs of displaced person
tailed plans were laid for resettling refugees in the U.S.,
junction with the National Catholic Resettlement counci
diocesan directors, in a special session, adopted a strong
tion favouring extension and development of soil-conser
districts. Education to stewardship of land was stressed
board of directors adopted resolutions favouring: (1) fo
tion of a national land policy, to foster family farms an
homesteads; (2) enactment of legislative safeguards for
tory farm labour, regarding housing, health and working
tions generally; (3) calling of an international Catholic
ference on agricultural and rural problems; (4) establis
of Catholic schools of practical agriculture and of adv
study; (5) closer co-operation between rural and urban g

During 1947 the conference issued formal statements fa
ing protection of migratory farm labour and retention of a
restrictions in reclamation projects. Its president, Bisho
liam T. Mulloy of Covington, Ky., testified before a co
sional committee regarding admission of displaced person

At the midwinter meeting of the board of director
quarterly *Land and Home* was suspended and the new m
*The Christian Farmer* was designated official publication
conference.

The Most Rev. William T. Mulloy, bishop of Covington,
was re-elected president at the Lafayette convention, an
Rev. L. G. Ligutti was reappointed executive secretary.
quarters in 1947: 3801 Grand Ave., Des Moines, Ia. (J. La

## Catholic University of America.

During 1947
Catholic Univ
of America, Washington, D.C., added three buildings with
000 sq.ft. of classroom and laboratory space and increase
faculty by 25 additions to serve an enrolment of 4,200 stud
among whom were registrants from 25 countries other tha
United States and 2,600 ex-service men and women. The
tional Catholic School of Social Service of Washington
merged with the university's school of social work; a bran
the engineering school was established at the army eng
centre at Fort Belvoir, Va.; training for master's degrees in
counselling was opened in conjunction with Father Flana
Boys Town, and new courses in psychiatric and tubercu
nursing were added to the school of nursing education.
operative arrangements were made with the Oak Ridge Insti
of Nuclear Studies to supply training for atomic specialists
consultants in research in the government's program to de
peacetime uses for atomic energy. Dr. Edward J. Finan
named dean of the graduate school of arts and sciences;
Marie A. Corrigan became dean of women, and eight fac
members were promoted to full professorships. Pope Pius
elevated Rev. Dr. John K. Ryan of the school of philosoph
the rank of domestic prelate. Of three original plays writte

niversity students and produced by the speech and drama deartment, one was sold for commercial production. Football ith Mason-Dixon conference teams was resumed after abandonment of the game during World War II. Donations, royales and special grants valued in excess of $950,000 were reeived; plus more than $1,000,000 toward a fund of $5,000,000 equired to complete the National Shrine of the Immaculate onception on the campus. (For statistics of endowment, enolment, faculty, library volumes, etc., *see* UNIVERSITIES AND OLLEGES.) (P. J. M.)

## atholic Welfare Conference, National.

he conference was organized by the bishops of the United tates in Sept. 1919 to unify, co-ordinate and organize the atholic people of the United States in works of education, ocial welfare, immigrant aid and other social and religious ctivities. The conference is conducted by an administrative oard of 10 archbishops and bishops, who supervise its operaon and report annually to the Holy See. The conference does ot exercise jurisdiction in the canonical sense, nor is it a synod r council.

The annual meeting of the conference was held at Washingon, D.C., Nov. 11–14, 1947, attended by more than 130 mемers of the hierarchy. Members elected or re-elected to the dministrative board were: chairman, Archbishop John T. McNicholas, O.P. of Cincinnati, O.; vice-chairman, Archbishop Richard J. Cushing of Boston, Mass.; treasurer, Bishop John Mark Gannon of Erie, Pa.; secretary, Bishop John F. Noll of ort Wayne, Ind.; Archbishop Robert E. Lucey of San Antonio, Tex.; Archbishop Joseph E. Ritter of St. Louis, Mo.; Archishop James H. Ryan of Omaha, Neb.; Bishop Karl J. Alter f Toledo, O.; Bishop Emmet M. Walsh of Charleston, S.C., nd Bishop Michael J. Ready of Columbus, O. Msgr. Howard J. Carroll was re-named general-secretary of the N.C.W.C.

The general meeting voted to hold the bishops' emergency elief collection in 1948 on Laetare Sunday. It authorized the ppointment of a special committee of bishops to represent N.C.W.C. in problems relating to the church in occupied areas f the Pacific. Plans were approved for the formation of the National Catholic Resettlement council to be composed of Catholic organizations interested in the resettlement of dislaced persons. Subsequent to the meeting the council was rganized under the auspices of War Relief Services of the N.C.W.C.

The annual reports of the National Catholic Welfare conference departments, submitted at the bishops' meeting, summarized the conference's activities for the year 1947. Organizations affiliated with the National Council of Catholic Men increased from 2,954 to 3,130. "The Catholic Hour" was heard on 111 National Broadcasting company stations. "The Hour of Faith" was heard over 55 stations while the "Faith In Our Time" program was carried by 77 stations. A total of 4,734 organizations were affiliated with the National Council of Catholic Women, an increase of 136 during 1947. The National Catholic School of Social Service was unified with the Catholic University of America's school of social work. N.C.W.C. News Service was used in 41 countries. The department of education participated in national educational conferences, presented testimony and views on national legislation, and initiated research and interpretation in connection with controversial school matters. The Social Action department sponsored meetings of the Catholic conference on industrial problems, institutes for working women, N.C.C.W. leaders, priests, seminarians, nuns, and business men. The Youth department reported that 64 dioceses had youth programs with 261 priests and 162 professional laymen and women occupied in the work. The Catholic Action Institute of the Confraternity of Christian Doctrine was initiated at the Catholic University of America and was attended by more than 100 religious and laymen from North and South America.

In 1947, national headquarters were located at 1312 Massachusetts Avenue, N.W., Washington, D.C. The official publication is the monthly, *Catholic Action.* (J. LaF.)

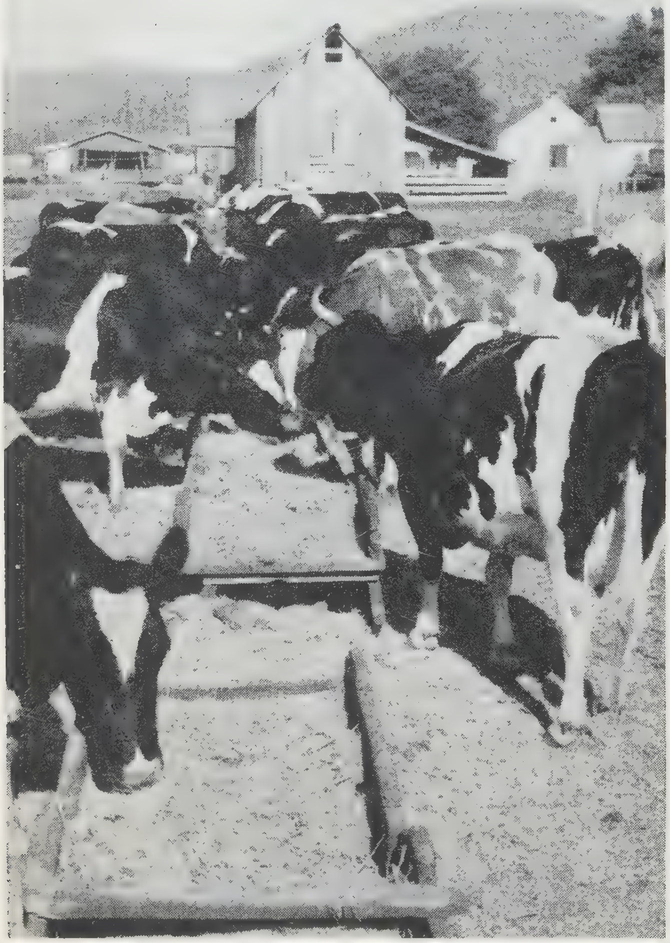
**Catholic Youth Organization:** *see* CATHOLIC ORGANIZATIONS FOR YOUTH.

## Cattle.

The total number of beef and dairy cattle in the U.S. continued to decline in 1947. A total of 81,051,000 head was reported on Jan. 1, 1947, compared with 82,434,000 a year earlier and the record high of 85,573,000 on Jan. 1, 1945. This decline was attributed to larger slaughter; more cattle and calves were dressed than in any previous year. The slaughter records showed that about 50% more cattle and calves were sold in 1947 than in any of the five years preceding World War II. High prices for all classes of cattle, together with doubt regarding the future, were cited as reasons for the heavy liquidation.

The decline in numbers of milk cows was smaller than that of beef animals—only 2% from 1946. On Jan. 1, 1947, the num-

EXICAN FARMERS digging trenches for the burial of infected cattle during n epidemic of hoof-and-mouth disease in 1947. By midsummer, 168,000 aniаls had been killed in an effort to halt the plague



DAIRY HERD at Coeur d'Alene, Ida., where farmers reported greater silage in 1947 as a result of reclamation work on the Rathdrum Prairie project. Increased feed crops allowed for increases in livestock

ber of milk cows and calves was estimated at 26,100,000 head, compared with 26,695,000 a year earlier and an average of 25,823,000 head during 1936–45. Advancing feed prices in contrast to the relatively steady price of milk caused dairymen to cull their herds closely in the fall months of 1947.

Marketing of cattle and calves, at a high level in Jan. 1947, continued well above the previous year at a steady rate which contrasted with the wide fluctuation of shipments in 1946. A reduction in the number of feed-lot cattle resulted from the high feed prices. The high prices of feeder-cattle discouraged feeders from maintaining their operations at the 1946 level, which was the highest on record.

Prices of all classes of cattle were at record high levels throughout 1946. The average received by producers for all classes in Jan. 1947, was $17.30 per cwt., compared with $11.80 a year earlier. By June 1947, the average price had advanced to $18.60, to $19.50 in August and to $20.20 in September, followed by a slight decline in October. Proposals to send more grain to Europe caused a further rise to $19.80 in December. Calf prices followed the same general trend.

World cattle numbers began to increase in 1946. Decreases in North America, Australia and New Zealand were offset by increases in Europe, South America and Africa. The Americas, Africa, Australia and New Zealand had more cattle than in the prewar decade; the great losses were in the war-devastated countries of Europe and Asia. Canada and Mexico both had to impose restrictions on the shipment of stock and feeder cattle to the U.S. in 1947. Outbreak of hoof-and-mouth d Mexico stopped exports to the U.S. which had rang 400,000 to 500,000 head annually. Canada continued bargo on shipments of cattle to the U.S. to provide a beef for Great Britain. Canadian price controls rem effect through 1947; prices rose but were considerabl the U.S. level.

In Argentina, cattle numbers changed little although mand for beef increased because of domestic needs. Ex beef rose in the early months of 1947, about 90% goin United Kingdom. Increased costs of labour and feeds p Argentine cattlemen from expanding production.

The number of dairy cattle increased slowly in The lands, Denmark and Belgium, but the high cost of i feeds continued to be a handicap. (*See* also LIVESTOCK.
(J. C.

**C.E.D.:** *see* COMMITTEE FOR ECONOMIC DEVELOPMENT.
**Celebes Islands:** *see* NETHERLANDS INDIES.
**Cellulose Products:** *see* PLASTICS INDUSTRY; RAY OTHER SYNTHETIC FIBRES.

**Cement.** The postwar recovery in building const brought in 1946 a 40% increase in the wor duction of cement as compared with 1945. This increa not limited to the United States but was shared by most major producing countries. Such preliminary figures a received for 1947 indicated continued increases.

**United States.**—The salient features of the cement i in the United States were as follows:

*Cement Industry in the U.S., 1940-46*

(Millions of barrels)

| | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 |
|---|---|---|---|---|---|---|
| Production . . . . . . . . . | 132.7 | 166.9 | 185.3 | 135.3 | 92.2 | 104. |
| Portland cement . . . . . . | 130.2 | 164.0 | 182.8 | 133.4 | 90.9 | 102. |
| Other varieties . . . . . . | 2.5 | 2.9 | 2.6 | 1.8 | 1.2 | 1. |
| Shipments. . . . . . . . . . | 132.9 | 170.4 | 187.8 | 129.5 | 95.6 | 107. |
| Portland cement . . . . . . | 130.3 | 167.4 | 185.3 | 127.6 | 94.3 | 106. |
| Other varieties . . . . . . | 2.5 | 2.9 | 2.5 | 1.8 | 1.3 | 1.5 |
| Stocks | | | | | | |
| Portland cement . . . . . . | 23.4 | 20.0 | 17.4 | 23.2 | 20.0 | 16.4 |
| Clinker . . . . . . . . . . | 4.9 | 4.6 | 3.5 | 6.0 | 5.3 | 4.5 |
| Other varieties . . . . . . | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 | 0. |
| Exports. . . . . . . . . . . | 1.7 | 2.6 | 1.1 | 1.7 | 4.0 | 6.5 |
| Available supply . . . . . . | 131.7 | 167.9 | 186.7 | 127.8 | 91.6 | 101.4 |

The domestic cement industry responded to the revival building industry with a 60% increase in output during Following the same pattern as the two preceding years ments were ahead of production and stocks declined.

The production rate continued to advance in 1947, wit 977,000 bbl. of Portland cement during the first eight m an advance of 17% over the corresponding period of 1946 responding shipments were 118,344,000 bbl., 9% ahead of During 1946 an average of 68% of the plant capacity use, rising to 71% at the year end, and to 86% in Aug. (*See* also GYPSUM.)
(G. A. F

**Census Data, 1947.** By way of supplement to the r of the periodic population and ing censuses, the U.S. bureau of the census collects a wide ety of data on a monthly, quarterly, or annual basis, pub frequent estimates of population, labour force, employmen unemployment, and makes special censuses of limited area surveys in various fields from time to time as occasion dem

**Growth of Total Population.**—The population of the on July 1, 1947, according to preliminary estimates, was 001,510—an increase of 2,772,817 over the population esti for July 1, 1946. The sources of this increase may be ana as follows: There were, during the year ending June 30, 3,987,902 births, from which may be subtracted 1,42

Table I.—*Estimated Population of Continental United States Including Armed Forces Overseas, July 1, 1940, to July 1, 1947*

| Date | Estimated total population | Change since preceding date | | | | | |
|---|---|---|---|---|---|---|---|
| | | Net increase | | Births* | Deaths* | Excess of births over deaths | Net civilian immigration |
| | | Number | Per cent | | | | |
| ly 1, 1940 | 131,970,224 | — | — | — | — | — | — |
| n. 1, 1941 | 132,637,933 | 667,709 | 0.51 | 1,311,428 | 692,971 | 618,457 | 49,252 |
| ly 1, 1941 | 133,202,873 | 564,940 | 0.43 | 1,316,685 | 761,117 | 555,568 | 9,372 |
| n. 1, 1942 | 133,953,225 | 750,352 | 0.56 | 1,400,533 | 681,971 | 718,562 | 31,790 |
| ly 1, 1942 | 134,664,924 | 711,699 | 0.53 | 1,407,467 | 733,223 | 674,244 | 37,455 |
| n. 1, 1943 | 135,645,969 | 981,045 | 0.73 | 1,630,967 | 701,054 | 929,913 | 51,132 |
| ly 1, 1943 | 136,497,049 | 851,080 | 0.63 | 1,578,210 | 786,014 | 792,196 | 58,884 |
| n. 1, 1944 | 137,368,379 | 871,330 | 0.64 | 1,580,383 | 761,926 | 818,457 | 52,873 |
| ly 1, 1944 | 138,083,449 | 715,070 | 0.52 | 1,436,179 | 794,451 | 641,728 | 73,342 |
| n. 1, 1945 | 138,922,634 | 839,185 | 0.61 | 1,533,007 | 786,027 | 746,980 | 92,205 |
| ly 1, 1945 | 139,585,518 | 662,884 | 0.48 | 1,422,212 | 866,036 | 556,176 | 106,708 |
| n. 1, 1946 | 140,393,671 | 808,153 | 0.58 | 1,472,268 | 710,080 | 762,188 | 45,965 |
| ly 1, 1946 | 141,228,693 | 835,022 | 0.59 | 1,424,255 | 734,939 | 689,316 | 145,706 |
| n. 1, 1947 | 142,672,762 | 1,444,069 | 1.02 | 2,017,255 | 678,035 | 1,339,220 | 104,849 |
| ly 1, 1947† | 144,001,510 | 1,328,748 | 0.93 | 1,970,647 | 751,031 | 1,219,616 | 109,848 |

*Estimated total, including adjustment for underregistration.
†Preliminary figures.

leaths, leaving a natural increase of 2,558,836, which represents he major part of the population increase. The remainder was nade up of the net civilian immigration, which amounted to 14,697. The rate of increase for the year ending June 30, 1947, vas 2.0%, decidedly higher than the rate of 1.4% in 1943, which iad stood as the record maximum for any year since the early 920s. While the number of alien immigrants admitted in the iscal year 1947 was a little higher than in any recent earlier ear, the main reason for the very large population increase in 947 was the unusually large number of births, approximately 4,000,000, as compared with a little over 3,000,000 in the previous record year, 1943. The increase in births, in turn, was loubtless in large part a result of the very large number of marriages which took place in the months immediately following he demobilization of the major part of the U.S. armed forces n 1945–46.

A preliminary estimate for Oct. 1, 1947, gave the U.S. a total population of 144,708,000.

Two other types of estimates were made—one series representing the population actually in continental United States, excluding persons in military service overseas (sometimes referred to as the *de facto* population) and second, the civilian population, excluding all persons in military service. By midyear, 1945, the number of persons in military service had grown to more than 12,000,000, so that the total population far exceeded the civilian population. In July 1947, the estimated civilian population of the U.S. was 142,627,650, differing from the total population by less than 1,400,000. For the same date the *de facto* population, including military personnel in continental United States but excluding that overseas, was 143,381,587.

**Trends.**—The birth rate (based on recorded births, as reported by the national office of vital statistics, of the U.S. public health service) had increased, with improvement in economic conditions, from a low of 16.6 per 1,000 of the population in the calendar year 1936 to 21.5 in 1943, with a slight recession in the next 2½ years. In July 1946 began a rapid increase, running up to a maximum of 29.5 (annual basis) in Dec., then falling to around 25 in May 1947, with subsequent increase to a provisional figure of 26.8 for Sept.

The death rate declined slowly from 11.3 per 1,000 of the population in 1930 (calendar year) to 10.7 in 1940 and fluctuated closely around that level during the next six years, running slightly below 10 per 1,000 (annual basis) in the summer months and somewhat higher in the winter months. The provisional rate for Jan. 1947, was 10.9 and for September, 9.1.

The number of marriages (figures also from the national office of vital statistics) increased rather rapidly from an average of around 1,350,000 in the five years from 1935 to 1939 to 1,772,132 in 1942 (calendar year) with somewhat lower figures in 1943, 1944, and 1945. It then increased substantially to 2,285,539 in 1946. In the first half of 1947, almost 1,000,000 marriages were reported; during the next three months (July–Sept., 1947) the numbers of marriages reported for all cities of 100,000 or over, with a population aggregating about one-third of the U.S. total, were likewise appreciably lower month by month than in 1946.

The number of divorces in 1945 was estimated at 494,000, or 30.8 per 100 marriages (as compared with 264,000 in 1940) and at a still higher figure, namely, 613,000 in 1946—though the rate per 100 marriages was only 26.8, by reason of the much larger number of marriages.

Assuming a continuation of the birth rates and death rates in each age which prevailed in the period from 1935 to 1940, 1,000 women starting life at the same time would bear 978 daughters during their lifetimes. This figure is a net reproduction rate. A net reproduction rate of 1,000 would mean that each generation would just replace itself under the conditions stated. A rate below 1,000 would indicate a potentially declining population and a rate above 1,000, a potentially growing population. The U.S. rate rose from 1,023 in 1940 to 1,233 in 1943. It then declined to 1,144 in 1945, but rose to 1,451 in 1946, with a much higher figure in prospect for 1947. It seemed almost certain, at the end of 1947, that there would be a substantial decline in fertility rates within the next few years, but opinions were divided as to whether, in resuming the historical trend toward smaller families and a declining rate of increase which had been in progress for over a century, the population of the U.S. would settle back to the prewar trend line or perhaps run along parallel with it at a somewhat higher level. It seemed, in any case, that the prospect of a declining population within a few decades had not been eliminated but that the time of its occurrence (forecast as 1990 with a probable population of around 180,000,000) might be materially postponed.

**Urban and Rural.**—For April 1947, the civilian population was estimated at 142,061,000, an increase of 7.9% over the 1940 census figure. The urban population at the same time, as estimated on the basis of a sample survey, was 83,860,000, or 12.7% more than in 1940 and the rural-nonfarm population was 30,896,000, representing an increase of 14.3%. These gains, both considerably higher than the increase in the total population, were made in part at the expense of the rural-farm population, which declined 9.6% from 30,216,000 in 1940 to 27,305,000 in 1947. The effect of these differential changes was to increase the percentage urban from 56.5 in 1940 to 59.0 in 1947, while the percentage rural-farm declined from 22.9 to 19.2. These figures are presented in Table II, together with classifications by sex and colour.

**Sex and Colour.**—Mainly because the large numbers of im-

Table II.—*Population of the United States, Urban and Rural, and by Sex and Colour: 1947 and 1940*

| | Civilian population 1947 | Total population 1940 | Per cent change |
|---|---|---|---|
| Total | 142,061,000 | 131,669,275 | +7.9 |
| Urban | 83,860,000 | 74,423,702 | +12.7 |
| Rural-nonfarm | 30,896,000 | 27,029,385 | +14.3 |
| Rural-farm | 27,305,000 | 30,216,188 | −9.6 |
| By sex: | | | |
| Male | 70,128,000 | 66,061,592 | + 6.2 |
| Female | 71,933,000 | 65,607,683 | + 9.6 |
| By colour: | | | |
| White | 127,044,000 | 118,214,870 | + 7.5 |
| Nonwhite | 15,017,000 | 13,454,405 | +11.6 |

migrants from Europe were dominantly male, there was long in the population of the U.S. a decided excess of males over females, the maximum excess shown for any census date being 2,692,288 in 1910, when the sex ratio was 106.0 males per 100 females. With declining immigration and the ageing of the population, the excess of males became gradually smaller and smaller until in Oct. 1946, according to the current estimates of total population, the number of females slightly exceeded the number of males. In the civilian population, of course, this excess of females was materially accentuated since this figure omitted something like 1,500,000 men in military service. The civilian population of April 1947, for which information of various types is presented in the following paragraphs, comprised 70,128,000 males and 71,933,000 females, or 97.5 males per 100 females.

The white population of the U.S. increased from 118,214,870 in April 1940, to 127,044,000 in April, 1947, or 7.5%. The nonwhite population, mainly Negro, increased during the same period from 13,454,405 to 15,017,000, or 11.6%. The effect of this somewhat more rapid increase in the nonwhite population was to raise the percentage nonwhite in the civilian population from 10.2 to 10.6. These figures should not be interpreted, however, as indicating the prospect of any very rapid or extensive change in the relative numbers of the two racial groups. During the two or three decades ending with 1947 there were, largely as the result of migration from southern states to the north and west, material changes in the living conditions of the nonwhite population, which changes may be accompanied by other changes tending toward lower birth rates among nonwhite families.

**Age.**—Table III shows the civilian population of April 1947, distributed by age and sex, with 1940 census figures for comparison. The effect of the high birth rate of the seven years preceding April 1947 is strikingly shown by the increase of 36.2% in the population under five years old. This is more than four times the rate of increase in the total population and almost seven times the rate of increase in the population five years old and over. Despite the unprecedented increase in the population in the youngest age group, however, the median age of the population rose from 29.0 to 30.0 years.

Making a comparison on the basis of the percentage which persons in each age group form of the total, it may that persons under five years old formed 10.1% of population in 1947, as compared with 8.0% in 1940, w sons from 10–19 years old, the survivors for the mos the low-birth-rate depression years formed only 15.1 total in 1947, as compared with 18.3% in 1940. At end of the age scale, the percentage represented by pe 64 years old increased from 8.0 in 1940 to 8.9 in 1947 figure for persons 65 years old and over increased from 1940 to 7.5% in 1947, thus indicating a definite contin the long-time trend toward an older population which in spite of the unusual increments in the very younges of the population resulting from the high birth rates of period.

**Educational Attainment.**—According to a survey April 1947, more than half of the population of the years old and over had completed the equivalent of year of high school. The median of 9.5 years of schc pleted represented the midpoint in the range of edu attainment among the individuals making up the pop At one extreme were somewhat less than 10% of the tion who had completed less than 5 years of school an other extreme 5% who had completed 4 years or more lege or university. Those persons with less than five y schooling were rather largely concentrated in the ol groups, reflecting the fact that even 30 or 40 years befo cational facilities were less readily available than late college graduate group, however, was more evenly dist by age, the percentage of college graduates in the populat 54 years old being about the same as that in the total 2 old and over. In general, however, there was a definite tion between age and educational attainment, the media ber of years of school completed being highest (12.1) youngest group covered by the inquiry, even though m these persons (20–24 years old) were still in school and eventually add one or two more years to their record. this point the medians decreased gradually to 7.7 for pers years old and over. The medians computed for 1947 in an appreciable advance in educational attainment as co with 1940—9.5 years for the entire group covered by the

Table III.—*Population of the United States by Sex and Age: 1947 and 1940*

(Distributions for 1947 based on a small sample)

| Age | Civilian population, April 1947 Number | Per cent | Male | Female | Total population, April 1940 Number | Per cent | Male | Female | Per cent chang 1940–47 Total | Male |
|---|---|---|---|---|---|---|---|---|---|---|
| All ages | 142,061,000 | 100.0 | 70,128,000 | 71,933,000 | 131,669,275 | 100.0 | 66,061,592 | 65,607,683 | + 7.9 | + 6.2 |
| Under 5 years | 14,354,000 | 10.1 | 7,321,000 | 7,033,000 | 10,541,524 | 8.0 | 5,354,808 | 5,186,716 | +36.2 | +36.7 |
| 5- 9 years | 11,989,000 | 8.4 | 6,110,000 | 5,879,000 | 10,684,622 | 8.1 | 5,418,823 | 5,265,799 | +12.2 | +12.8 |
| 10-14 years | 10,656,000 | 7.5 | 5,407,000 | 5,249,000 | 11,745,935 | 8.9 | 5,952,329 | 5,793,606 | − 9.3 | − 9.2 |
| 15-19 years | 10,736,000 | 7.6 | 5,154,000 | 5,582,000 | 12,333,523 | 9.4 | 6,180,153 | 6,153,370 | −13.0 | −16.6 |
| 20-24 years | 11,748,000 | 8.3 | 5,653,000 | 6,095,000 | 11,587,835 | 8.8 | 5,692,392 | 5,895,443 | + 1.4 | − 0.7 |
| 25-29 years | 11,554,000 | 8.1 | 5,540,000 | 6,014,000 | 11,096,638 | 8.4 | 5,450,662 | 5,645,976 | + 4.1 | + 1.6 |
| 30-34 years | 11,073,000 | 7.8 | 5,354,000 | 5,719,000 | 10,242,388 | 7.8 | 5,070,312 | 5,172,076 | + 8.1 | + 5.6 |
| 35-44 years | 19,983,000 | 14.1 | 9,826,000 | 10,157,000 | 18,333,220 | 13.9 | 9,164,794 | 9,168,426 | + 9.0 | + 7.2 |
| 45-54 years | 16,734,000 | 11.8 | 8,339,000 | 8,395,000 | 15,512,071 | 11.8 | 7,962,019 | 7,550,052 | + 7.9 | + 4.7 |
| 55-64 years | 12,643,000 | 8.9 | 6,368,000 | 6,275,000 | 10,572,205 | 8.0 | 5,409,180 | 5,163,025 | +19.6 | +17.7 |
| 65 years and over | 10,591,000 | 7.5 | 5,056,000 | 5,535,000 | 9,019,314 | 6.8 | 4,406,120 | 4,613,194 | +17.4 | +14.7 |
| Median age | 30.0 | — | 29.9 | 30.1 | 29.0 | — | 29.1 | 29.0 | — | — |

Table IV.—*Highest Year of School Completed by the Civilian Population 20 Years Old and Over, by Age, for the United States: April 1947*

(Figures based on a small sample)

| Years of school completed | Total, 20 years old and over | 20–24 years | 25–29 years | 30–34 years | 35–44 years | 45–54 years | 55–64 years | 6 |
|---|---|---|---|---|---|---|---|---|
| Total | 94,326,000 | 11,748,000 | 11,554,000 | 11,073,000 | 19,983,000 | 16,734,000 | 12,643,000 | 10, |
| Elementary school: | | | | | | | | |
| Less than 5 years* | 8,980,000 | 369,000 | 489,000 | 526,000 | 1,280,000 | 1,923,000 | 2,099,000 | 2,2 |
| 5 or 6 years | 7,844,000 | 554,000 | 539,000 | 582,000 | 1,446,000 | 1,754,000 | 1,506,000 | 1,4 |
| 7 or 8 years | 26,679,000 | 1,661,000 | 1,921,000 | 2,481,000 | 6,037,000 | 5,947,000 | 4,726,000 | 3, |
| High school: | | | | | | | | |
| 1 to 3 years | 16,394,000 | 2,907,000 | 2,618,000 | 2,379,000 | 3,748,000 | 2,563,000 | 1,355,000 | 8 |
| 4 years | 21,645,000 | 4,719,000 | 4,200,000 | 3,430,000 | 4,283,000 | 2,432,000 | 1,544,000 | 1, |
| College: | | | | | | | | |
| 1 to 3 years | 6,691,000 | 1,158,000 | 1,057,000 | 851,000 | 1,591,000 | 1,031,000 | 628,000 | 3 |
| 4 years or more | 4,716,000 | 292,000 | 641,000 | 737,000 | 1,409,000 | 812,000 | 471,000 | 3 |
| Years of school not reported | 1,377,000 | 88,000 | 89,000 | 87,000 | 189,000 | 272,000 | 314,000 | 3 |
| Median years of school completed | 9.5 | 12.1 | 12.0 | 11.4 | 9.9 | 8.5 | 8.1 | |

*Includes persons reporting no school years completed.

compared with 8.8 in 1940, with increases of something like year for the 4 groups comprising persons from 20–44 years of ge and with little change for those older. These figures are mmarized in Table IV.

**School Attendance.**—About 1,200,000 male veterans be- een the ages of 20 and 29, or about one-seventh of the whole mber of veterans in this age group, were in school or college April 1947, most of them presumably taking advantage of e G.I. Bill of Rights. The veterans in school comprised nine- nths of the whole number of males 20–29 years old enrolled the schools and colleges of the nation and were mainly re- onsible for the fact that the number of young men enrolled school and college in 1947 far exceeded the highest prewar vel.

Data on school attendance or enrolment for the population -29 years of age are presented in Table V. The percentages rolled for persons 7–17 years of age were higher in 1947 than 1940, the only material decline shown in the table being at for five-year-olds. This decrease was believed to be only ominal and the result of a change in the form of inquiry which as more successful in excluding from the count children tending kindergarten.

**Table V.—*School Enrolment of Persons 5 to 29 Years Old, by Age: 1947 and 1940***

(Figures for 1947 based on a small sample)

| Age and veteran status | Total civilian population, April 1947 | Enrolled in school Number | Enrolled in school Per cent | Per cent in school, 1940 |
|---|---|---|---|---|
| Total, 5 to 29 years | 56,683,000 | 26,679,000 | 47.1 | — |
| 5 years | 2,628,000 | 136,000 | 5.2 | 18.0 |
| years | 2,446,000 | 1,644,000 | 67.2 | 69.1 |
| to 9 years | 6,915,000 | 6,643,000 | 96.1 | 94.3 |
| to 13 years | 8,562,000 | 8,354,000 | 97.6 | 95.5 |
| to 17 years | 8,689,000 | 7,057,000 | 81.2 | 79.3 |
| and 19 years | 4,141,000 | 1,148,000 | 27.7 | 28.9 |
| to 24 years | 11,748,000 | 1,262,000 | 10.7 | 6.6 |
| ales 18 and 19 years | 1,837,000 | 565,000 | 30.8 | 30.8 |
| Veteran | 328,000 | 70,000 | 21.3 | * |
| Nonveteran | 1,509,000 | 495,000 | 32.8 | * |
| ales 20 to 24 years | 5,653,000 | 993,000 | 17.6 | 8.2 |
| Veteran | 4,218,000 | 877,000 | 20.8 | * |
| Nonveteran | 1,435,000 | 116,000 | 8.1 | * |
| ales 25 to 29 years | 5,540,000 | 384,000 | 6.9 | * |
| Veteran | 4,344,000 | 353,000 | 8.1 | * |
| Nonveteran | 1,196,000 | 31,000 | 2.6 | * |

*Data not available.

**Tenure of Home.**—The number of occupied dwelling units the U.S. increased from 34,854,532 in 1940 to 39,016,000 1947, thus adding about 12% to the number of U.S. homes uring the seven-year period. Since the population increased by nly about 8%, the average population per dwelling unit was lightly lower in 1947 than in 1940 (3.64 as compared with .78).

There was a marked increase between 1940 and 1947 in the roportion of families in the U.S. who owned the houses in hich they lived. In 1947, 54.7% of the dwelling units were ccupied by their owners and only 45.3% by tenants, thus lmost exactly reversing the situation in 1940, when 43.6% ere owner-occupied and 56.4% tenant-occupied. This change n the tenure relationship was the result of conditions in many reas under which it was practically impossible to find a house ffered for rent, so that many families acquired at least the orm of ownership of a home as the only means of obtaining a lace to live. While the percentage of owner-occupied homes, s always, remained higher in rural areas than in urban, the hange between 1940 and 1947 affected both urban and rural reas in similar fashion. The percentage of dwelling units ccupied by owners in urban areas increased from 37.5 in 1940 o 48.4 in 1947. The corresponding change in rural-nonfarm reas was from 51.7 to 64.3 and in rural-farm areas from 53.2 o 64.9.

**Housing Vacancies.**—In addition to the occupied units there ere in 1947 1,028,000 vacant units designed for year-round occupancy (excluding something over 1,000,000 seasonal units, for the most part in rural areas). Of these units, 327,000 were offered for rent and 112,000 were offered for sale only, the remainder being made up of units rented or sold but not yet occupied, units held for absent households, etc. The 439,000 units offered for sale or rent formed a little over 1% of the total number of dwelling units. These figures may be compared with 1,475,374 vacant nonseasonal units for sale or rent in 1940, or nearly 4% of the total. Vacant units offered for rent were relatively much more numerous in rural-farm areas in 1947 than in nonfarm areas, forming 2.3% of the whole number of rural-farm units. This situation doubtless reflects the fact that there was during the period 1940–47 a considerable decline in the rural-farm population through migration to nonfarm areas.

**Table VI.—*Occupied and Vacant Dwelling Units in the United States: April 1947***

(Figures represent ordinary occupied dwelling units and habitable vacant units. Data based on a small sample)

| Status | United States | Urban | Rural-nonfarm | Rural-farm |
|---|---|---|---|---|
| Total occupied units | 39,016,000 | 23,835,000 | 8,519,000 | 6,662,000 |
| Owner-occupied | 21,347,000 | 11,547,000 | 5,478,000 | 4,322,000 |
| Tenant-occupied | 17,669,000 | 12,288,000 | 3,041,000 | 2,340,000 |
| Per cent | 100.0 | 100.0 | 100.0 | 100.0 |
| Owner-occupied | 54.7 | 48.4 | 64.3 | 64.9 |
| Tenant-occupied | 45.3 | 51.6 | 35.7 | 35.1 |
| Vacant nonseasonal units | 1,028,000 | 352,000 | 299,000 | 377,000 |
| Offered for rent | 327,000 | 87,000 | 79,000 | 161,000 |
| Rented but not yet occupied | 88,000 | 42,000 | 25,000 | 21,000 |
| Offered for sale only | 112,000 | 49,000 | 45,000 | 18,000 |
| Sold but not yet occupied | 183,000 | 86,000 | 62,000 | 35,000 |
| Other* | 318,000 | 88,000 | 88,000 | 142,000 |

*Units held for absent household, pending settlement of estate, awaiting demolition, etc.

**Plumbing Equipment.**—In 1947 an estimated 26,436,000 occupied dwelling units, or 67.8% of the total, were equipped with private bath and private flush toilet, for the exclusive use of the occupants of the unit. This figure may be compared with 55.7% in 1940. Of the urban units in 1947, 84.3% were reported as having these facilities, of the rural-nonfarm units, 57.3%, but of the rural-farm units only 21.9%. All three of these figures, however, represented decided increases over the corresponding figures for 1940.

At the other end of the scale in the matter of plumbing equipment, there were 7,626,000 dwelling units, or 19.5% of the 1947 total, which had no running water in the unit. This percentage may be compared with 29.6% in 1940, these figures indicating a marked reduction in the proportion of households without convenient water supply. Of the 23,835,000 urban units in 1947, only 1,014,000, or 4.3%, were without running water, in contrast with the situation in rural-farm areas where

**Table VII.—*Occupied Dwelling Units by Plumbing Equipment, for the United States, Urban and Rural: 1947 and 1940***

(Figures for 1947 based on a small sample)

| Plumbing Equipment | April 1947 Number | April 1947 Per cent | April 1940 Number | April 1940 Per cent |
|---|---|---|---|---|
| United States total | 39,016,000 | 100.0 | 34,855,000 | 100.0 |
| Private bath and private flush toilet | 26,436,000 | 67.8 | 19,429,000 | 55.7 |
| Private flush toilet, no private bath | 1,522,000 | 3.9 | 1,487,000 | 4.3 |
| Running water, no private flush toilet | 3,432,000 | 8.8 | 3,614,000 | 10.4 |
| No running water in dwelling unit | 7,626,000 | 19.5 | 10,325,000 | 29.6 |
| Urban | 23,835,000 | 100.0 | 20,597,000 | 100.0 |
| Private bath and private flush toilet | 20,095,000 | 84.3 | 15,830,000 | 76.9 |
| Private flush toilet, no private bath | 1,137,000 | 4.8 | 1,227,000 | 6.0 |
| Running water, no private flush toilet | 1,589,000 | 6.7 | 2,193,000 | 10.6 |
| No running water in dwelling unit | 1,014,000 | 4.3 | 1,347,000 | 6.5 |
| Rural-nonfarm | 8,519,000 | 100.0 | 7,151,000 | 100.0 |
| Private bath and private flush toilet | 4,885,000 | 57.3 | 2,823,000 | 39.5 |
| Private flush toilet, no private bath | 287,000 | 3.4 | 223,000 | 3.1 |
| Running water, no private flush toilet | 1,038,000 | 12.2 | 941,000 | 13.2 |
| No running water in dwelling unit | 2,309,000 | 27.1 | 3,164,000 | 44.2 |
| Rural-farm | 6,662,000 | 100.0 | 7,107,000 | 100.0 |
| Private bath and private flush toilet | 1,456,000 | 21.9 | 776,000 | 10.9 |
| Private flush toilet, no private bath | 98,000 | 1.5 | 37,000 | 0.5 |
| Running water, no private flush toilet | 805,000 | 12.1 | 480,000 | 6.8 |
| No running water in dwelling unit | 4,303,000 | 64.6 | 5,814,000 | 81.8 |

4,303,000 out of a total of 6,662,000, or 64.6%, had no running water in the unit. The classification of dwelling units on the basis of plumbing equipment is summarized in Table VII.

**Electric Lighting.**—More than nine out of ten of the occupied dwelling units in the U.S. in 1947 were equipped with electric lighting, this representing an increase from slightly less than eight out of ten in 1940. As in the case of plumbing equipment, there was a marked differential between urban and rural areas. While only 1.8% of the urban units were without electric lighting in 1947, 8.6% of the rural-nonfarm units lacked this convenience, and 36.7% of the rural-farm units. Improvement in this respect between 1940 and 1947 was more marked than in the matter of plumbing equipment, since the percentage of units without electric lighting was reduced during this period by slightly more than one-half. The reduction in the percentage of homes without electric lights was more rapid in urban areas than in rural, though even in the rural-farm areas the number of homes without electric lights was reduced from 4,810,000 in 1940 to 2,447,000 in 1947. The figures for dwelling units with and without electric lighting are summarized in Table VIII.

**Table VIII.**—*Occupied Dwelling Units by Electric Lighting, for the United States, Urban and Rural: 1947 and 1940*

(Figures for 1947 based on a small sample)

| Status | April 1947 | | April 1940 | |
|---|---|---|---|---|
| | Number | Per cent | Number | Per cent |
| United States total | 39,016,000 | 100.0 | 34,855,000 | 100.0 |
| With electric lighting | 35,414,000 | 90.8 | 27,604,000 | 79.2 |
| Without electric lighting | 3,602,000 | 9.2 | 7,251,000 | 20.8 |
| Urban | 23,835,000 | 100.0 | 20,597,000 | 100.0 |
| With electric lighting | 23,414,000 | 98.2 | 19,719,000 | 95.7 |
| Without electric lighting | 421,000 | 1.8 | 878,000 | 4.3 |
| Rural-nonfarm | 8,519,000 | 100.0 | 7,151,000 | 100.0 |
| With electric lighting | 7,785,000 | 91.4 | 5,588,000 | 78.1 |
| Without electric lighting | 734,000 | 8.6 | 1,563,000 | 21.9 |
| Rural-farm | 6,662,000 | 100.0 | 7,107,000 | 100.0 |
| With electric lighting | 4,215,000 | 63.3 | 2,297,000 | 32.3 |
| Without electric lighting | 2,447,000 | 36.7 | 4,810,000 | 67.7 |

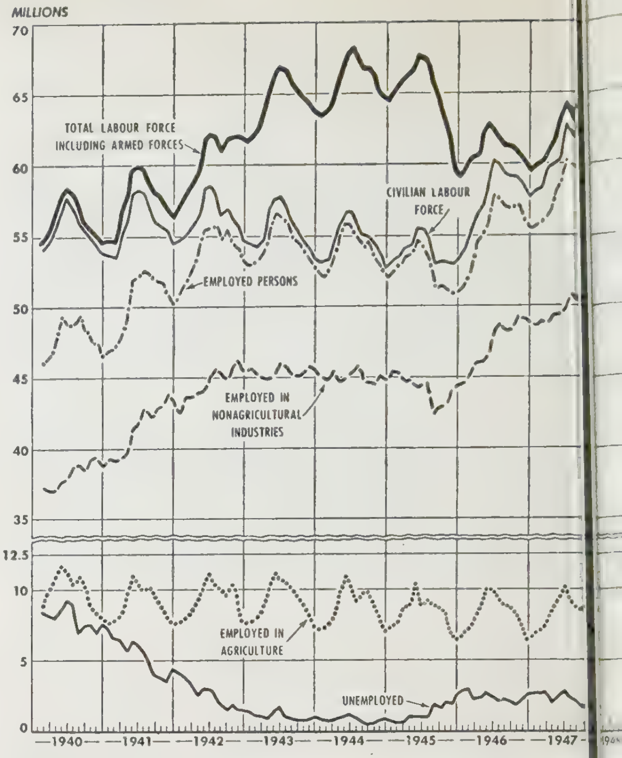
**Rental.**—The median monthly rental of the 12,288,000 tenant-occupied urban dwelling units in April, 1947, was $31.64, as compared with $24.60 in April 1940. This change resulted from a decided increase in the number of units renting for $30 or more and similar decreases in the number of units renting for less than this figure. The number of units renting for less than $10, for example, decreased from 1,219,000 in 1940 to 481,000 in 1947, or more than 60%. On the other hand, the number of units renting for $40 to $49 increased from 1,262,000 in 1940 to 2,043,000 in 1947, or something over 60%. These rental figures are summarized in Table IX.

In the northeastern states, the median rental of tenant-occupied urban dwelling units was $34.11; in the north central states, $32.09; in the south, $23.18; and in the west, $32.85. These figures represent increases of 20% or 30% over the corresponding figures for 1940 except that in the south the median increased from $15.13 to $23.18, or more than 50%.

**Table IX.**—*Monthly Rent of Tenant-Occupied Urban Dwelling Units in the United States, with Medians for Regions: 1947 and 1940*

(Figures for 1947 based on a small sample)

| Monthly rent | April 1947 | | April 1940 | | Per cent change, 1940 to 1947 |
|---|---|---|---|---|---|
| | Number | Per cent | Number | Per cent | |
| United States total | 12,288,000 | 100.0 | 12,882,000 | 100.0 | − 4.6 |
| Under $10 | 481,000 | 3.9 | 1,219,000 | 9.4 | −60.5 |
| $10–$19 | 2,052,000 | 16.7 | 3,401,000 | 26.4 | −39.7 |
| $20–$29 | 2,966,000 | 24.1 | 3,462,000 | 26.9 | −14.3 |
| $30–$39 | 3,015,000 | 24.5 | 2,402,000 | 18.6 | +25.5 |
| $40–$49 | 2,043,000 | 16.6 | 1,262,000 | 9.8 | +61.9 |
| $50 or more | 1,731,000 | 14.1 | 1,136,000 | 8.8 | +52.4 |
| | April 1947 | | April 1940 | | |
| Median rental: | | | | | |
| United States | $31.64 | — | $24.60 | — | +28.6 |
| Northeastern states | 34.11 | — | 26.96 | — | +23.4 |
| North central states | 32.09 | — | | — | |
| The south | 23.18 | — | 15.13 | — | +53.2 |
| The west | 32.85 | — | 25.06 | — | +31.1 |



TRENDS in the labour force, 1940 to 1947 (Source: U.S. Bur of Census)

**Employment and Unemployment.**—The civilia force, estimated at 60,200,000 in Nov. 1947, had decl sonally by about 700,000 from the October level. Thi was confined largely to farm workers who left the lab with the end of harvesting operations. The civilian lab in Nov. 1947 included about 1,200,000 more persons Nov. 1946, largely veterans of World War II. There change in the number of women in the labour force 1946 and 1947.

The total labour force, including the armed forces, mated at 61,500,000 in Nov. 1947, or about 500,000 m in Nov. 1946.

The labour force participation rate for male vetera is, the proportion of those in the population who wer civilian labour force, increased significantly during 1 1947. In Nov. 1945, when large numbers of veterans firs returning to civilian life, the rate for veterans 20–44 age was only about 68%. By Nov. 1946 this rate had 88%, and by Nov. 1947 to 91%. The rate for nonvet the same age group was about 97% in Nov. 1947, unchanged from Nov. 1945.

The number of persons employed in civilian work by about 600,000 between Oct. and Nov. 1947, to a 58,600,000. Persons employed in nonagricultural indus talled 50,600,000 in November, virtually the same as in The number of nonagricultural workers in November re at the all-time high of previous months, exceeding the w reached in Dec. 1942, by about 4,500,000, and the No level by 1,500,000. Women employed in nonagricultur in November totalled about 15,300,000, or about 2,000, low the wartime peak of female employment in the sp 1945.

With harvesting operations nearly completed in most a the country, the number of agricultural workers drop about 600,000 between October and November to a t 8,000,000. About half of the decline occurred amon omen and an additional 25% among young farm workers der 20 years of age. Agricultural employment in Nov. 1947 s at about the same level as in Nov. 1946, but the number of ale farm workers had increased by about 250,000 while the mber of female workers had declined by a corresponding nount. This replacement of women by men in farm work had en under way ever since the end of World War II.

An estimated 1,600,000 persons were unemployed in Nov. 47, or about the same number as in October. The stability in employment between October and November extended alike male veterans of World War II, to nonveterans and to women. nemployment in November, representing only 2.7% of the vilian labour force, was the lowest recorded since the fall of 45.

The average duration of unemployment in Oct. 1947 was ne weeks, or about the same as in September. This was sub-antially lower than in Oct. 1946, when the duration of unem-oyment averaged about 12 weeks.

The data from the monthly reports on the labour force are mmarized for the postwar period up to Nov. 1947, in Table X, hile the chart on page 178 shows the principal items in graphic rm for the entire period from 1940 to the end of 1947.

The Dec. 1947 figures for employment and unemployment ere as follows: civilian labour force, 59,590,000; employed, 7,947,000, unemployed, 1,643,000. Persons employed in agriculture numbered 6,962,000, as compared with 7,985,000 in November, thus continuing the usual seasonal decline; persons employed in nonagricultural industries numbered 50,985,000 in December, or a little more than in November.

**Occupational Changes.**—Male and female employed workers are classified by major occupation group for 1947 and 1940 in Table XI. Significant changes among male workers include a decrease in the proportion of the total represented by farmers from 14.7% to 10.7%, by farm labourers from 8.1% to 5.3%, and by general labourers from 8.7% to 7.7%, with increases for nonfarm proprietors and officials from 9.8% to 12.5%, for craftsmen, etc., from 14.5% to 19.0%, and for operatives, etc., from 18.2% to 20.9%.

Among female workers the most significant decreases in proportion were for professional and semiprofessional workers, from 13.2% to 9.4%, perhaps reflecting a movement from the teaching profession to clerical and sales positions; and in domestic service from 17.7% to 8.8%. Significant increases were in clerical workers, from 21.3% to 26.7%, in sales persons, from 7.0% to 8.1%, and in operatives, etc., from 18.4% to 20.1%. The nominal increase in female farm workers reflects mainly the seasonal difference between April and October.

Table X.—*Civilian Employment and Unemployment in the United States: July 1945 to Nov. 1947*

(Figures are exclusive of institutional population as well as of persons in the armed forces. Data based on a small sample)

| Date and sex | Civilian population 14 years old and over | Civilian Labour Force: Total: Number | Per cent of population | Employed | Unemployed: Number | Per cent of labour force |
|---|---|---|---|---|---|---|
| TOTAL | | | | | | |
| 945: | | | | | | |
| July | 93,290,000 | 55,350,000 | 59.3 | 54,400,000 | 950,000 | 1.7 |
| Oct | 95,040,000 | 53,170,000 | 55.9 | 51,610,000 | 1,560,000 | 2.9 |
| 946: | | | | | | |
| Jan. | 99,780,000 | 53,320,000 | 53.4 | 51,020,000 | 2,300,000 | 4.3 |
| April. | 102,290,000 | 56,450,000 | 55.2 | 54,120,000 | 2,330,000 | 4.1 |
| July | 103,650,000 | 60,110,000 | 58.0 | 57,840,000 | 2,270,000 | 3.8 |
| Oct. | 104,590,000 | 58,990,000 | 56.4 | 57,030,000 | 1,960,000 | 3.3 |
| 947: | | | | | | |
| Jan. | 105,250,000 | 57,790,000 | 54.9 | 55,390,000 | 2,400,000 | 4.2 |
| April. | 105,730,000 | 59,120,000 | 55.9 | 56,700,000 | 2,420,000 | 4.1 |
| July | 106,133,000 | 62,664,000 | 59.0 | 60,079,000 | 2,584,000 | 4.1 |
| Aug. | 106,238,000 | 61,665,000 | 58.0 | 59,569,000 | 2,096,000 | 3.4 |
| Sept. | 106,329,000 | 60,784,000 | 57.2 | 58,872,000 | 1,912,000 | 3.1 |
| Oct. | 106,428,000 | 60,892,000 | 57.2 | 59,204,000 | 1,687,000 | 2.8 |
| Nov. | 106,545,000 | 60,216,000 | 56.5 | 58,595,000 | 1,621,000 | 2.7 |
| MALE | | | | | | |
| 945: | | | | | | |
| July | 40,290,000 | 35,270,000 | 87.5 | 34,790,000 | 480,000 | 1.4 |
| Oct. | 41,870,000 | 34,650,000 | 82.8 | 33,710,000 | 940,000 | 2.7 |
| 946: | | | | | | |
| Jan. | 46,300,000 | 37,160,000 | 80.3 | 35,390,000 | 1,770,000 | 4.8 |
| April. | 48,680,000 | 39,860,000 | 81.9 | 37,990,000 | 1,870,000 | 4.7 |
| July | 49,880,000 | 42,710,000 | 85.6 | 40,950,000 | 1,760,000 | 4.1 |
| Oct. | 50,550,000 | 41,820,000 | 82.7 | 40,270,000 | 1,550,000 | 3.7 |
| 947: | | | | | | |
| Jan. | 51,090,000 | 41,860,000 | 81.9 | 39,910,000 | 1,950,000 | 4.7 |
| April. | 51,330,000 | 42,800,000 | 83.4 | 40,900,000 | 1,900,000 | 4.4 |
| July | 51,591,000 | 44,861,000 | 87.0 | 43,071,000 | 1,789,000 | 4.0 |
| Aug. | 51,644,000 | 44,540,000 | 86.2 | 43,022,000 | 1,518,000 | 3.4 |
| Sept. | 51,684,000 | 43,551,000 | 84.3 | 42,158,000 | 1,393,000 | 3.2 |
| Oct. | 51,734,000 | 43,443,000 | 84.0 | 42,260,000 | 1,183,000 | 2.7 |
| Nov. | 51,802,000 | 43,148,000 | 83.3 | 41,972,000 | 1,176,000 | 2.7 |
| FEMALE | | | | | | |
| 945: | | | | | | |
| July | 53,000,000 | 20,080,000 | 37.9 | 19,610,000 | 470,000 | 2.3 |
| Oct. | 53,170,000 | 18,520,000 | 34.8 | 17,900,000 | 620,000 | 3.3 |
| 946: | | | | | | |
| Jan. | 53,480,000 | 16,160,000 | 30.2 | 15,630,000 | 530,000 | 3.3 |
| April. | 53,610,000 | 16,590,000 | 30.9 | 16,130,000 | 460,000 | 2.8 |
| July | 53,770,000 | 17,400,000 | 32.4 | 16,890,000 | 510,000 | 2.9 |
| Oct. | 54,040,000 | 17,170,000 | 31.8 | 16,760,000 | 410,000 | 2.4 |
| 947: | | | | | | |
| Jan. | 54,160,000 | 15,930,000 | 29.4 | 15,480,000 | 450,000 | 2.8 |
| April. | 54,400,000 | 16,320,000 | 30.0 | 15,800,000 | 520,000 | 3.2 |
| July | 54,542,000 | 17,803,000 | 32.6 | 17,008,000 | 795,000 | 4.5 |
| Aug. | 54,594,000 | 17,125,000 | 31.4 | 16,547,000 | 578,000 | 3.4 |
| Sept. | 54,645,000 | 17,233,000 | 31.5 | 16,714,000 | 519,000 | 3.0 |
| Oct. | 54,694,000 | 17,449,000 | 31.9 | 16,944,000 | 504,000 | 2.9 |
| Nov. | 54,743,000 | 17,068,000 | 31.2 | 16,623,000 | 445,000 | 2.6 |

Table XI.—*Employed Workers by Sex and Major Occupation Group: 1947 and 1940*

(Figures for 1947 based on a small sample)

| Sex and Occupation Group | Oct. 1947: Number | Oct. 1947: Per cent | April 1940: Number | April 1940: Per cent |
|---|---|---|---|---|
| Male | | | | |
| Total | 42,260,000 | 100.0 | 34,027,905 | 100.0 |
| Professional and semiprofessional | 2,449,000 | 5.8 | 1,875,387 | 5.5 |
| Farmers and farm managers | 4,538,000 | 10.7 | 4,991,715 | 14.7 |
| Proprietors, managers and officials, except farm | 5,277,000 | 12.5 | 3,325,767 | 9.8 |
| Clerical and kindred workers | 2,886,000 | 6.8 | 2,236,853 | 6.6 |
| Salesmen and saleswomen | 2,266,000 | 5.4 | 2,123,795 | 6.2 |
| Craftsmen, foremen and kindred workers | 8,024,000 | 19.0 | 4,949,132 | 14.5 |
| Operatives and kindred workers | 8,820,000 | 20.9 | 6,205,898 | 18.2 |
| Domestic service workers | 97,000 | 0.2 | 142,231 | 0.4 |
| Service workers, except domestic | 2,431,000 | 5.8 | 2,196,695 | 6.5 |
| Farm labourers and foremen | 2,219,000 | 5.3 | 2,770,005 | 8.1 |
| Labourers except farm and mine | 3,252,000 | 7.7 | 2,965,693 | 8.7 |
| Occupation not reported | — | — | 244,734 | 0.7 |
| Female | | | | |
| Total | 16,944,000 | 100.0 | 11,138,178 | 100.0 |
| Professional and semiprofessional | 1,594,000 | 9.4 | 1,469,661 | 13.2 |
| Farmers and farm managers | 296,000 | 1.7 | 151,899 | 1.4 |
| Proprietors, managers and officials, except farm | 689,000 | 4.1 | 423,520 | 3.8 |
| Clerical and kindred workers | 4,526,000 | 26.7 | 2,375,503 | 21.3 |
| Salesmen and saleswomen | 1,376,000 | 8.1 | 781,479 | 7.0 |
| Craftsmen, foremen and kindred workers | 188,000 | 1.1 | 106,590 | 1.0 |
| Operatives and kindred workers | 3,404,000 | 20.1 | 2,046,379 | 18.4 |
| Domestic service workers | 1,485,000 | 8.8 | 1,969,083 | 17.7 |
| Service workers, except domestic | 1,917,000 | 11.3 | 1,261,639 | 11.3 |
| Farm labourers and foremen | 1,389,000 | 8.2 | 320,005 | 2.9 |
| Labourers, except farm and mine | 81,000 | 0.5 | 98,435 | 0.9 |
| Occupation not reported | — | — | 133,985 | 1.2 |

(*See* also ALIENS; BIRTH STATISTICS; HOUSING; IMMIGRATION AND EMIGRATION; MARRIAGE AND DIVORCE; WAGES AND HOURS; WEALTH AND INCOME, DISTRIBUTION OF.) (L. E. T.)

**Centennials:** *see* CALENDAR, 1948, page xxii.

**Cereals:** *see* BARLEY; CORN; OATS; RICE; RYE; WHEAT.

**Ceylon.** A British crown colony holding limited dominion status in 1947, lying off the southern extremity of India and approaching within 6° of the equator. Area: 25,332 sq.mi.; pop. (March 1946): 6,650,825. Chief towns (pop. census 1931): Colombo (cap., 284,155); Jaffna (45,708); Galle (34,424); Kandy (37,147). Languages: English, Sinhalese, Tamil; religions: chiefly Hindu and Buddhist. Governor: Sir Henry Monck-Mason Moore; prime minister (appointed Sept. 1947): Stephen Senanayake.

**History.**—Interest during 1947 focused on the introduction of parliamentary government. The state council was dissolved on July 10, and the elections were held from Aug. 23 to Sept. 20; under adult suffrage, more than 1,500,000 voters went to the polls. The result was a victory for the United National party, which secured 49 out of the 95 seats in the lower chamber. The next most numerous bloc were the Independents with 21 seats, many of whom would support the United National party's policy and give it a working majority. On Sept. 24 Stephen Senanayake, leader of the party, was asked by the governor to form a cabinet; the members were announced two days later. Under the existing constitution, certain subjects affecting the rights of the minorities, defense and foreign relations were reserved to the governor. After a short experience of the working of the new constitution, it was reasonably certain that these would be removed, and Ceylon would cross the threshold of fully responsible government within the commonwealth. The Ceylon Independence act, which received the royal assent on Dec. 10, provided dominion status for Ceylon as from Feb. 4, 1948.

There was a wave of prosperity during the year. Tea, copra and crepe rubber were booming. On Jan. 27 the government announced an export tax on tea of 38.15 cents per lb., expected to yield Rs.90,000,000. A scheme for free education from kindergarten to university absorbed a large part of the revenue.

(H. G. Rn.)

**Education.**—(1946) Sinhalese and Tamil schools 4,135; scholars, male 374,277, female 292,634; English and bilingual schools 416; scholars, male 66,467, female 34,756; University of Ceylon (1945), students 1,065.

**Banking and Finance.**—Revenue (est. 1946–47) £25,650,000; expenditure (est. 1946–47) £25,585,333; public debt (Sept. 30, 1945) £9,408,775 and Rs. 266,904,100; notes in circulation (May 1947) Rs. 230,100,000; bank deposits (May 1947) Rs. 715,600,000. Rate of exchange (1947): One rupee (100 cents) = 1*s*. 6*d*. or 30.16 U.S. cents.

**Trade and Communication.**—Overseas trade (merchandise, 1946): imports Rs. 602,090,000; domestic exports Rs. 715,847,000. Communications and transport: roads for motor traffic (1943) 6,551 mi.; railways (1944) 912 mi. (including 106 mi. narrow gauge); shipping entered (1942) 2,724,000 net tons; motor vehicles licensed (Dec. 31, 1941): 20,092 motor cars and taxis; 4,394 trucks and vans; 2,486 omnibuses; 2,644 cycles; 66 tractors; 231 trailers; wireless receiving set licences (Dec. 31, 1940) 9,736; telephone instruments in use (1938) 10,424.

**Agriculture.**—Production in short tons (1946): rubber (export) 113,989; black tea (export) 145,250; rice (yearly average) 209,200; desiccated coconut (export) 11,121.

## Chambers of Commerce.

**United States.**—In a year which increasingly emphasized the world-wide attack being waged against democracy, the chamber of commerce of the United States strengthened its leadership as the major business spokesman for free enterprise.

In 1947 member organizations—chambers of commerce, trade associations and professional groups—totalled more than 2,700. Their underlying membership numbered more than 1,250,000 businessmen.

In addition, more than 18,000 business concerns held direct membership in the national chamber.

The chamber strove to alert the U.S. people, not only to the danger threatening their security from without, but also to the need for individual responsibility in strengthening free-enterprise work, and in improving local, state and national government.

Continuing its drive against communism, the chamber distributed more than 500,000 copies of 2 special reports: *Communists within the Government*, and *Communists within the Labor Movement*.

A program of action was launched to disseminate to all groups of people the facts about the opportunities afforded under the U.S. way of life.

Spearheaded by the national chamber, committees on national affairs were active in more than 2,000 local chambers, with the goal of a better-informed citizenry.

The chamber also conducted a broad information program, to place the facts about labour-management questions people.

Its views closely paralleled the majority opinion as by congress in remedial labour legislation.

All fields of business interest, including federal fisc stabilization of private and public monies, educatio transportation, conservation and foreign reconstru trade, received thorough study and action.

In May 1947, Earl O. Shreve, of New York city, w president of the chamber of commerce of the Unit Ralph Bradford, long-time general manager of the cha elevated to the position of executive vice-president. A became chamber manager. (E.

*United States Junior Chamber of Commerce.*—Th young men's civic organization in the world was fo Jan. 21, 1920, in St. Louis, Mo. It is composed o through 35 years of age who are principally concerned their volunteer services to the civic betterment of t munity, state, nation and the world. An affiliate of t Chamber International, the U.S. junior chamber of had in 1947 more than 1,600 local organizations in th States; world-wide, the organization embraced 45 natio were approximately 200,000 individual members in th States.

During 1947 local organizations affiliated with the U chamber of commerce voted to increase their dues to th al organization from $1 to $2 per member per year. Th al convention was held in Long Beach, Calif., and J Shepperd, of Gladewater, Tex., was elected 27th nation dent.

In convention the delegates formally resolved tha Europe as outlined in the European recovery progra shall plan) was a necessity for world peace. They also favour of universal military training.

The biggest single decision of the year was the vote the national headquarters from Chicago, Ill., to Tuls where a permanent war memorial headquarters buildin be constructed to house the headquarters.

During 1947, the executive vice-president in charge o al headquarters was Frank G. Fister; the editor of *Fut Magazine for Young Men,* international publication of junior chamber, was Raymond E. Roberts. (R. E.

**Canada.**—In its 19th year, the Canadian chamber merce had 443 organization members, 1,228 company m and 25 business and professional association members. ties of 1947 included promotion of a first national insti secretaries, held at Hamilton, Ont., in August. More th national affairs committees were set up to create a m formed public opinion and to take the opinions of bus government. The chamber produced a series of radio p called "Pattern for Prosperity," and co-operated with th dian Congress of Labor and the Canadian Trades and congress in the production of another series entitled "La Business Take Stock." Publications included 800,000 co "Pattern for Prosperity," 90,000 copies of "The Con Threat to Canada" and 150,000 copies of "This Is a Bu "Know Your Government" and miscellaneous pamphlets. were presented to the federal government on industria tions, labour legislation, taxation, radio broadcasting, se immigration.

The chamber's 5th National Foreign Trade conferen held in Vancouver, B.C., in May, attended by 250 ex importer delegates.

In its 11th year, the junior chamber of commerce in C had 136 member organizations with approximately 25,0 dividual members by 1947. Throughout the year its ma asis continued on leadership training efforts to fit Canadian n between 21 and 40 for their places in Canada's business rld. The "Jaycees" were also active in their beautification npaign, begun in 1945, and in which 260 communities par-icipated in the spring of 1947. The junior chamber planned nada's first boys' town for juvenile delinquents at Boscoville, northern Montreal. (C. Cy.)

**Great Britain.**—During 1947 British chambers of commerce, mbering more than 100, with subscribers exceeding 50,000 ad representing a complete cross section of the industrial and mmercial community, maintained full activity within their ode field, which is to promote and protect the trade and indus-y of their place of domicile and embraces not only matters of al importance but also the consideration of any British or eign legislation, regulations or orders affecting their members' erests.

In 1947 chambers had more need to consider draft United ngdom legislation, and more calls were received from mem-rs for individual assistance, than perhaps any other year in eir history, which in some cases went back before 1800. New aft laws having a vital bearing on the future of free enter-ise were studied in intimate detail, and through the Associa-ion of British Chambers of Commerce, the national mouth-ce of the movement, some were strenuously opposed; among ese can be listed the Transport bill, the Electricity bill and e Industrial Organization bill. In many cases chambers were le to influence amendments valuable to their constituents, rticularly in the Companies bill. The Finance bills of the ring and autumn received detailed scrutiny, leading to repre-ntations; some recommendations made by the association re accepted.

The Economic survey for 1947 gave rise to recommendations, d some of the advice given to the government (*e.g.*, regarding e necessity to reduce capital expenditure) was in due course cepted.

The fuel crisis created opportunties for local service which any chambers seized quickly; assistance in organizing stag-red hours to relieve the load on electricity plants was given in any cities and towns.

Chambers of commerce provided direct help to many firms gaged in the export drive. (A. R. K.)

**hannel Islands:** *see* BRITISH EMPIRE.

**harles** (CHARLES THÉODORE HENRI ANTOINE MEINRAD DE SAXE-COBOURG, COUNT OF FLANDERS) (1903– ), ince of Belgium, was born in Brussels, Oct. 10, younger other of King Leopold III of the Belgians. On Sept. 20, 1944, ortly after the liberation of Belgium from German occupation, rince Charles was appointed regent by a joint vote of the rliamentary chambers, as the king was still a prisoner of the emy. On May 8, 1945, King Leopold was freed by Allied oops at Salzburg and four days later he confirmed the choice the parliament, asking his brother to "continue the mission had assumed in the interest of the nation." Considering the uteness of the "royal question" (*see* BELGIUM), the prince gent deliberately avoided taking an active part in Belgium's litical life. He was not often seen in public and officially his le was limited to helping in the formation of successive gov-nments. In 1947, however, he paid an official visit to the ongo (*see* BELGIAN COLONIAL EMPIRE). But, when the news as published that he would go in his official capacity to Paris, e Catholic press strongly criticized the idea and the visit was ostponed. On Nov. 20 Prince Charles was present in London the marriage of Princess Elizabeth and the duke of Edin-urgh. (G-H. D.)

**Cheese.** U.S. production of cheese in 1947 was 1,175,000,000 lb., compared with 1,099,000,000 lb. in 1946 and a five-year average of 669,000,000 lb. (1935–39). More milk was available for cheese making, and with reduced exports a larger domestic supply was provided. Production of American Cheddar type cheese was almost 30% above the previous year, amounting to about 5 lb. per capita. Total cheese output was about 8 lb. per capita. Wisconsin continued to hold its lead in cheese production, its output amounting to nearly half of the U.S. total, followed by Illinois, New York, Missouri and Minnesota. Cold storage stocks were high in midyear, and prices held steady.

The strong demand for butter checked expansion of world cheese production. The need for milk for consumption by children was a retarding factor on all dairy manufactures. (*See* also BUTTER; DAIRYING; MILK.) (J. C. Ms.)

**Chemical Therapy:** *see* CHEMOTHERAPY.

**Chemistry.** **Fluorine Compounds.** — Many organic compounds of fluorine were synthesized during 1947 and the years immediately preceding. Major stimulus to this work was the Manhattan project which required fluorocarbons in the first diffusion separation units at Oak Ridge, Tenn.

The electrolytic generation of fluorine from mixtures of potassium fluoride and hydrogen fluoride was extensively developed both in university laboratories and industries (Harshaw, Du Pont, Hooker Electrochemical, Pennsylvania Salt). Synthesis of a variety of aliphatic and aromatic fluorine compounds was reported, and the chemistry of both fluorine and fluorine compounds was greatly extended. One interesting aspect was the announcement that silver difluoride ($AgF_2$) and cobalt trifluoride are effective fluorinating agents.

**Chromium Hexacarbonyl, $Cr(CO)_6$.**—B. B. Owen and collaborators at Yale university developed a procedure for a 60% yield of chromium hexacarbonyl by the interaction of carbon monoxide upon phenylmagnesium bromide and chromic chloride.

**Fluorine Perchlorate, $FClO_4$.**—G. H. Rohrback and George H. Cady of the University of Washington separated fluorine perchlorate from the gaseous reaction products of fluorine and concentrated perchloric acid. The compound boils at −16° C., freezes at −167° C., and may easily be caused to explode.

**Fluoroisocyanates of Silicon and Phosphorus.**—All three silicon fluoroisocyanates, $SiF(NCO)_3$ (b.p. 134° C.), $SiF_2(NCO)_2$ (b.p. 68° C.), $SiF_3NCO$ (b.p. −6° C.), were prepared by direct reaction of silicon isocyanate with antimony trifluoride. This work was reported by G. S. Forbes and H. H. Anderson of Harvard university. All of these compounds react vigorously with water or methanol but are inert and miscible toward such solvents as benzene, carbon tetrachloride or ethylene bromide.

Phosphorus isocyanate, $P(NCO)_3$ and antimony fluoride underwent a similar reaction. Phosphorus fluorodiisocyanate, $PF(NCO)_2$ (b.p. 98° C.), and the difluoroisocyanate, $PF_2NCO$ (b.p. 12° C.), were both formed. The first of these compounds was stable, but the second was fairly unstable.

**Lithium Aluminum Hydride.**—Hydrides of the alkali metals are well known. Potassium hydride (KH), for example, is a white, crystalline, saltlike compound formed when hydrogen is passed over moulten potassium at about 360° C. H. I. Schlesinger, A. E. Finholt and A. C. Bond, Jr., of the University of Chicago discovered that when lithium hydride is treated with an ether solution of aluminum chloride, there is formed lithium aluminum hydride. This is a new, ether-soluble compound with many interesting uses. The equation for its formation follows: $4\,LiH + AlCl_3 \rightarrow LiAlH_4 + 3\,LiCl$. This substance is a complex of lithium hydride and aluminum hydride ($AlH_3$), the latter substance being isolable as an unstable substance if an excess of aluminum chloride is taken.

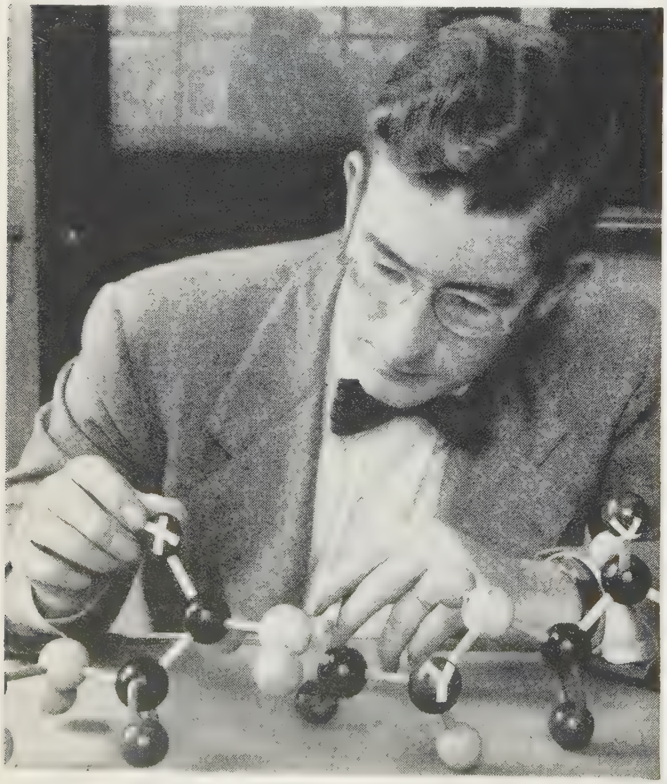
Lithium aluminum hydride reacts vigorously with water or ammonia with the liberation of hydrogen. It reacts with silicon tetrachloride forming silane ($SiH_4$), with stannic chloride yielding stannane ($SnH_4$), or with boron trichloride producing diborane, ($B_2H_6$), the methods being far simpler than those hitherto available. Reaction with dimethylzinc gave rise to the previously unknown zinc hydride ($ZnH_2$).

Perhaps the most striking property of lithium aluminum hydride is its ability to reduce lithium salts of organic acids to alcohols. This observation is particularly important, since none of the common reducing agents is capable of effecting such a reduction. Esters, acid anhydrides and acid chlorides are also reduced readily to alcohols by lithium aluminum hydride. These results were reported by Weldon G. Brown and R. F. Nystrom of Chicago.

**Reactions of Iron Pyrite.**—Three reactions of this well-known mineral were reported by George-Maria Schwab and John Philinis of Greece, namely, the pyrolysis at 600–650° C. into ferrous sulphide and sulphur, the reduction with hydrogen to yield ferrous sulphide and hydrogen sulphide and the air oxidation at 400–500° C. yielding sulphur dioxide and ferric oxide together with some ferric sulphate.

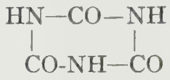
**Trioxane.**—The common polymer of formaldehyde is paraformaldehyde. A lesser known polymer which assumed industrial importance in the past few years is trioxane. This is a trimer of formaldehyde or $(CH_2O)_3$. It is a colourless crystalline compound melting at 62° C. and boiling without decomposition at 115° C.

J. F. Walker and A. F. Chadwick of Du Pont electrochemicals department pointed out that trioxane is a good source of formaldehyde, since in aqueous solution or in glacial acetic acid it is rapidly depolymerized if a little sulphuric acid is added.



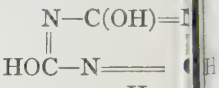
ROBERT B. WOODWARD, with a model of the protein molecules which he succeeded in synthesizing in 1947 with the assistance of C. H. Schramm. His work offered wide new possibilities in the industrial and biological sciences and marked a major advance in organic chemistry

**Cyanuric Acid and Melamine.**—Like trioxane, stances also are trimers. They are related to c (HNCO) and cyanamide ($CNNH_2$), respectively. sorption spectra methods, I. M. Klotz and Themis Northwestern university demonstrated that the st either of these compounds in solution is the same as solid state. Cyanuric acid, which could exist either (I) or enol (II) forms is shown to be of structure I. Me the other hand, is enolic. Its structure differs from



$$\begin{array}{l} \mathrm{HN{-}CO{-}NH} \\ \quad | \qquad\quad | \\ \mathrm{CO{-}NH{-}CO} \end{array}$$

I



$$\begin{array}{l} \qquad\quad \mathrm{N{-}C(OH){=}} \\ \qquad\quad \| \\ \mathrm{HOC{-}N{=\!=\!=}} \end{array}$$

II

each OH group is replaced by $NH_2$.

**Oxynitration of Benzene.**—During World War came of interest to gain insight into the reported con benzene into dinitrophenol or picric acid by use of a mercuric nitrate in nitric acid. The study was succes creasing the yields of dinitrophenol to about 85% and ing a clear picture of the mechanism of the process. was reported by F. H. Westheimer of the University and Marvin Carmack of the University of Pennsylva

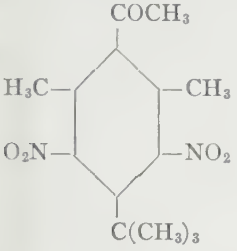
The first two steps in the process are mercuration to phenylmercuric nitrate and conversion of the latte sobenzene by reaction with nitrogen dioxide obtained nitric acid. The nitrosobenzene changed into *p*-nitro either of two processes: (1) conversion by nitric oxide nitric acid to benzenediazonium nitrate, thence to p nitrophenol; (2) direct "rearrangement" to nitrop concentrated nitric acid in much the same way that droxylamine rearranges to nitrosophenol. Of cours nitration of *p*-nitrophenol leads to di- or trinitrophen being picric acid.

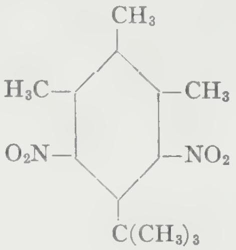
Somewhat related to this work was A. A. Morton that phenylmercuric nitrate may be prepared from b excellent yields if mercuric oxide and a desiccant ("L are used with the mercuric nitrate reagent. Mercuric tures the nitric acid formed in the reaction and the captures the water, thereby preventing the secondar known to occur if nitric acid and water are present.

**Benzene Hexachloride.**—In view of the heralde lence of DDT as an insecticide, it is noteworthy that insecticide of great potency was discovered, namely, th isomer of benzene hexachloride. This is made by ad chlorine to benzene. Curiously, only the gamma isome insecticidal value.

That several isomers are formed when chlorine adds zene is understandable from stereochemical considerati six carbon atoms in the molecule may be regarded as at ners of a hexagon. Each carbon holds one hydrogen chlorine. It is apparent that all six chlorines may be a plane of the hexagon and all six hydrogens below it, chlorines may be above and one below, etc. Whether sible isomers are present or not in the reaction mixtu known. Four of them ($\alpha$, $\beta$, $\gamma$, $\delta$) had been known f time. The fifth or epsilon isomer was isolated during K. C. Kauer, R. B. DuVall and F. N. Alquist of Dow C company. Between one-half and three-fourths of the products is the unwanted alpha isomer, and only a yield of the gamma isomer is obtained. The various iso separated from each other by appropriate use of solven Cristol of the U.S. department of agriculture reported kinetics of the detachment of hydrogen chloride from $\beta$, $\gamma$ and $\delta$ isomers.

**Musk Ketone and Musk Tibetene.**—R. C. Fuson orators at the University of Illinois established the structure these important perfume ingredients. They proved that usk ketone was 2,6-dimethyl-3,5-dinitro-4-*t*-butylacetophe- ne (III) and that musk tibetene was 1,2,3-trimethyl-3, dinitro-4-*t*-butylbenzene (IV), thereby correcting errors of ructure which had existed for many years.


III


IV

**Cyclo-octatetraene.**—The recent availability of this hy- ocarbon, by direct synthesis from acetylene, is one reason for erest in the compound. Its importance in studies of reso- nce and other theoretical aspects of organic chemistry is other reason. It was described as a yellow liquid melting at 27° C. Structurally, its molecule resembles benzene, since the ter possesses a six-membered ring made up of three $-CH=$ I$-$ units, whereas cyclo-octatetraene is composed of an eight- embered ring carrying four $-CH=CH-$ units; but it differs emically from benzene in being reactive toward bromine, drogen bromide or potassium bromide.

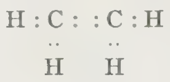
Richard Willstaetter's synthesis of 1911 was repeated in 1947 A. C. Cope and C. G. Overberger of Massachusetts Institute Technology. Except for a higher melting point (−5.5° C.), nfirmatory results were established throughout. The more actical synthesis from acetylene was by polymerization of e latter under pressure (10–15 atm.), a process described by alter Reppe and coworkers of I. G. Farbenindustrie. The uation for this process is: $4\ C_2H_2 \rightarrow C_8H_8$. The reaction was celerated by the presence of either powdered calcium carbide, hylene oxide or tetrahydrofuran. Nickel cyanide was also entioned as catalyst. A little benzene was produced concur- ntly as well as other hydrocarbons.

With this simpler synthesis much larger quantities were pre- red than would have been possible by Willstaetter's method. s prepared in this manner, cyclo-octatetraene was a golden llow liquid, freezing at −7° C. to almost colourless needle ystals. Physical chemical measurements on the pure material ere made by H. Mark *et al.* at the Polytechnic institute of rooklyn and by F. D. Rossini and collaborators of the national reau of standards. Measurement of the heat of combustion ows that in burning, it liberates 34,000 calories per mole ore energy than its aromatic isomer styrene. Therefore, not uch resonance stabilization is found in the cyclo-octatetraene olecule.

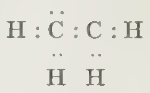
**Resonance.**—Resonance is a theoretical concept which has layed an important role in chemical thinking for two decades. has to do with electron patterns in molecules. This concept as introduced into quantum mechanics in 1926 by W. Heisen- erg in connection with the quantum states of the helium atom. luch of the credit for its application to chemistry generally is raceable to the work of Linus Pauling of California Institute f Technology.

It has been established that in most organic molecules a hy- rogen atom, if present, shares two electrons, whereas other toms (C, O, N, Cl, etc.) possess or share eight electrons. An nstable state arises, for example, if only six electrons are pres- nt. To illustrate with ethylene (ten electrons, each being rep- esented by a dot), it is seen that structure V satisfies the stable structure, whereas VI would be unstable. Ethylene may be

A PLASTIC GLUE, capable of supporting the weight of a 200-ton locomotive and resistant to heat, cold and salt water, was developed in 1947 by the young chemist Elisabeth M. Ackermann, shown here at her Westinghouse laboratory in Pittsburgh, Pa.

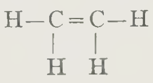

$\mathrm{H : \underset{\underset{H}{\cdot\cdot}}{C} : : \underset{\underset{H}{\cdot\cdot}}{C} : H}$

V

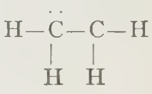

$\mathrm{H : \overset{\cdot\cdot}{\underset{\underset{H}{\cdot\cdot}}{C}} : \underset{\underset{H}{\cdot\cdot}}{C} : H}$

VI

considered a "resonance hybrid" of V and VI, but the contribution of VI is trivial under normal conditions and may be disregarded. The customary mode of representation of V and VI is with bonds, using dots only with unshared electrons, as


$\mathrm{H-\underset{\underset{H}{|}}{C}=\underset{\underset{H}{|}}{C}-H}$

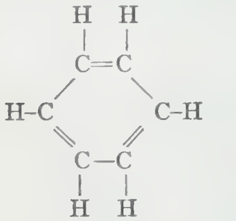
V


$\mathrm{H-\overset{\cdot\cdot}{\underset{\underset{H}{|}}{C}}-\underset{\underset{H}{|}}{C}-H}$

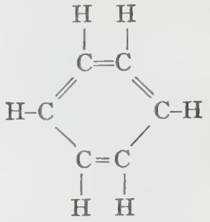
VI

Butadiene, with two double bonds per molecule, also has but one stable modification, namely, $H_2C=CH-CH=CH_2$. Benzene, however, provides two different locations for electrons to appear without deviating from the eight-electron pattern. These two extremes are shown in VII and VIII (p. 184) and benzene is considered to be a hybrid of these structures, both contributing equally. This type of resonance hybrid makes for stabilization. The compound is less reactive chemically than otherwise, it evolves less heat in burning or in hydrogenation, and the distance between carbon centres in the molecules is shortened.

As an example, one finds that cyclohexene ($C_6H_{10}$), cyclohexadiene ($C_6H_8$) and benzene ($C_6H_6$) all may be hydrogenated to cyclohexane ($C_6H_{12}$). Heat is evolved in all three reactions, to the extent of 28,600, 55,400, and 49,800 calories per mole, respectively. Twice 28,600 is 57,200, a value reasonably close to the observed 55,400, showing that there is no important resonance stabilization in cyclohexadiene. Thrice 28,600 is 85,800, which deviates from the observed value for benzene by 36,000 calories. Similarly, the heat of combustion of benzene is found to be 41,000 calories lower than calculated. This value of 36,000–41,000, or about 39,000 calories, is the so-called "resonance energy" of benzene.

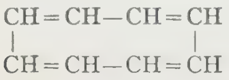


VII

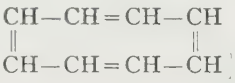


VIII

Since cyclo-octatetraene is less stable than styrene by 34,000 calories, it is evident that cyclo-octatetraene possesses very little resonance energy. This calls for comment, since its formula may assume two stable electron arrangements (IX, X). The only significant difference between the formulas for benzene and cyclotetraene is that the former is planar and strainless, whereas the latter, to be strainless, must possess a puckered ring. Evidently this feature must play an important role in the concept of resonance.



IX



X

**Reactions of Sugars with Nitroparaffins.**—Carbohydrates such as xylose, arabinose, glucose or mannose are polyhydroxy aldehydes. Many of the reactions of aldehydes such as oxidation to acids, reduction to alcohols, conversion to cyanohydrins with hydrogen cyanide, etc., are displayed also by these sugars. During the years 1944–47, John C. Sowden *et al.* of the University of Toronto made a brilliant contribution to carbohydrate chemistry by demonstrating the reaction with nitromethane and pointing out the utility of this reaction.

One may recall that a simple aldehyde (RCHO) condenses in an alkaline medium with nitromethane to produce a nitro alcohol, $RCHOH\text{–}CH_2\text{–}NO_2$. If a suspension of a sugar in methanol is treated with nitromethane in the presence of sodium methoxide, the analogous nitro alcohol is produced. Thus, from L-arabinose, $HOCH_2(CHOH)_3CHO$, Sowden obtained a nitro derivative, $HOCH_2(CHOH)_3CHOH\text{–}CH_2\text{–}NO_2$. The importance of this reaction rests in the fact that the compound formed may be changed by simple procedures into other carbohydrate derivatives, hitherto obtainable only with great difficulty. Thus, treatment of the sodium salt of the above nitro compound with sulphuric acid gives rise to a mixture of L-mannose and L-glucose. D-glucose is the common dextrose of commerce, but L-glucose, its mirror image, is not found in nature. This is the best method for its synthesis.

**Polymerization of Unsaturated Hydrocarbons.**—If one treats pentylchloride ($C_5H_{11}Cl$) with sodium at 0° C. to −10° C., one obtains pentylsodium. This reagent (or other compounds of the alkylsodium class, RNa) effects the polymerization of butadiene into rubberlike compounds. In this process it is regarded that butadiene, $CH_2=CH\text{-}CH=CH_2$, first adds RNa to form $R\text{–}CH_2CH=CHCH_2\text{–}Na$ which being itself a modified RNa again adds to butadiene to yield $RCH_2CH=CHCH_2\text{-}CH_2CH=CHCH_2\text{-}Na$, and so on till very long formed. Such a mechanism would give rise to a branched sequence of carbon atoms. Branched pr formed also, however, and to explain this observa Morton suggests that the terminal sodium atom in E $CHCH_2CH_2CH=CHCH_2Na$ may exchange its locat of a more acidic position, such as $RCH_2CH=CHC$ $CH=CHCH_3$. Addition of this unit to butadiene wo branched carbon skeleton.

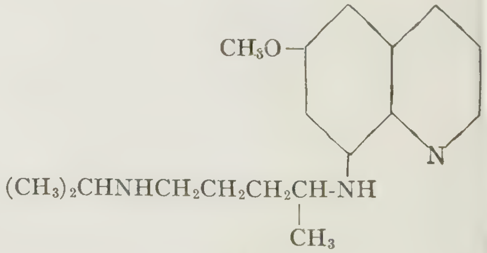
The work of Morton and R. L. Letsinger shows th sodium catalyzed the polymerization of styrene wi parently, adding to it. Pentylsodium did add smoot diphenylethene, however.

An interesting new catalyst, the "alfin catalyst," fo merization of butadiene was announced by Morto group. This substance is unique in causing catalytic zation of dienes and functions differently from the al reagent. The alfin catalyst is made from an alcohol ol) and an olefin, hence the name "alfin." To prepa alyst it is only necessary to mix sodium isopropoxide sodium. These reagents then unite to form a comple the reactive catalyst. Allylsodium may be made by i of pentylsodium with propylene, or the complete cat be made by reaction of pentylsodium with isopropyl

**The Fischer-Tropsch Process.**—A process for gasoline or liquid hydrocarbons from a mixture of hyd carbon monoxide was announced in 1928 by F. Fisch Tropsch. It contributed largely to the German fuel su ing the decade 1935–45. H. H. Storch and cowork U.S. bureau of mines performed important work dur 47 on a study of catalysts and conditions for this rea particular, the use of cobalt-thoria-magnesia-kieselgu 6:12:200) precipitated catalysts, both pelleted and was investigated. Certain large petroleum industries i took active steps in 1947 towards production of hyd from "synthesis gas," the term applied to the mixture gen and carbon monoxide.

**Antimalarial.**—Clinical tests on an antimalarial "Survey Number 13274" were most gratifying. It ported to effect permanent cures on about 95% of a cases of *P. vivax* type of malaria. This is the common variety which has usually required recurring medical tr Quinine is used with SN-13274 in the present therapy.

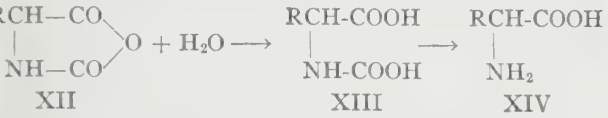
The compound is one of the 8-aminoquinolines studi office of scientific research and development project Elderfield and coworkers of Columbia university. Spe it is 8-(4-isopropylamino-1-methylbutyl)amino-6-meth oline (XI).



XI

**Amino Acids and Proteins.**—The classical studies Fischer established the essential structure of proteins a amides, composed of alpha amino acid units. Since amin with acids forming salts, the correct representation of a acid is the saltlike structure $H_3\overset{+}{N}\text{-}CHR\text{-}COO^-$ rather t simple amino acid structure $H_2N\text{-}CHR\text{-}COOH$. Starti an amino acid, Fischer was able to synthesize a di $H_2N\text{-}CHR\text{-}CO\text{-}NH\text{-}CHR\text{-}COOH$, by indirect interac amino acid molecules. Tripeptides and larger polypeptides e synthesized similarly, but the molecular size of these lucts never approached that of natural proteins.

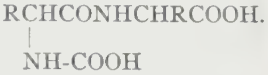
. B. Woodward and C. H. Schramm of Harvard university ounced a successful synthesis of protein analogs with a ecular weight of several million. Such materials were ca- le of being cast into clear, tough, mechanically stable films. obtain this type of high polymer, these investigators first pared an anhydride of N-carboxy-α-amino acid (XII) by wn methods, namely, by reaction of the amino acid with roformic ester. Treatment of this anhydride with water e rise to an unstable substituted carbamic acid (XIII):



$$\begin{matrix} \text{CH}-\text{CO} \\ | \qquad\quad \rangle\text{O} \\ \text{NH}-\text{CO} \end{matrix} + H_2O \longrightarrow \begin{matrix} \text{RCH-COOH} \\ | \\ \text{NH-COOH} \end{matrix} \longrightarrow \begin{matrix} \text{RCH-COOH} \\ | \\ NH_2 \end{matrix}$$

XII XIII XIV

ntaneous decomposition of XIII yielded XIV, capable of her reaction with XII to produce RCHCONHCHRCOOH.



$$\begin{matrix} \text{RCHCONHCHRCOOH} \\ | \\ \text{NH-COOH} \end{matrix}$$

before, the unstable –NHCOOH group decomposes into $H_2+CO_2$, and the reactive $NH_2$ group continues to build in the manner of its predecessor until a molecule of tremen- is size is formed. Amino acid XIV differs from the original ino acid only in not being in the saltlike structure. Its ctivity towards XII exceeds that of water; hence this poly- rization process may be performed in water if desired. This ction is a significant achievement in protein chemistry.

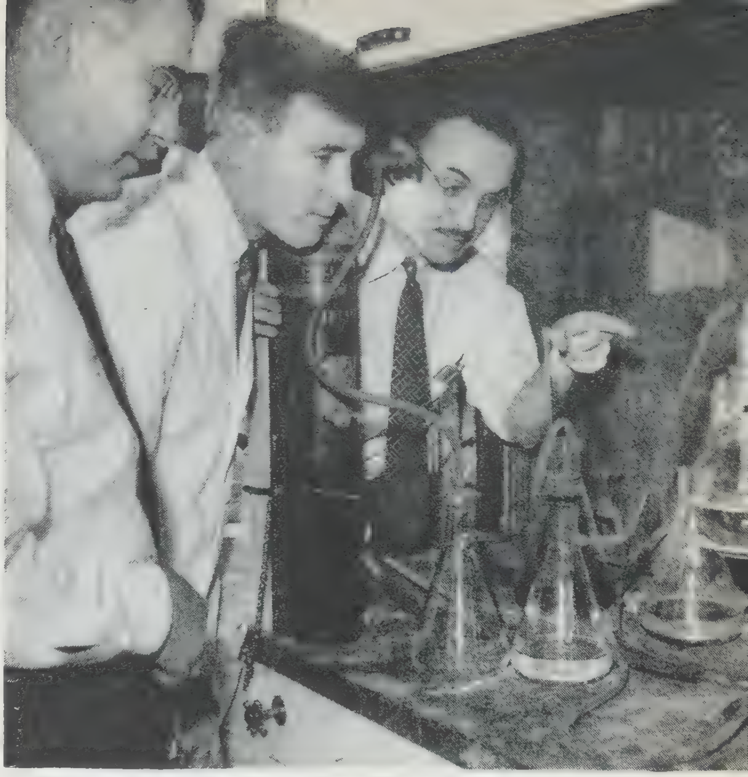
. J. Cohn, W. L. Hughes, Jr., and J. H. Weare of Harvard dical school developed methods for the crystallization of tain natural proteins, namely, human and bovine serum al- nin. (*See also* ATOMIC ENERGY; BIOCHEMISTRY; ELECTRON- ; PHYSICS; VITAMINS.) (C. D. HU.)

**emotherapy.** Increasing attention was focused during 1947 on nutrition, tropical diseases and enerative processes associated with diseases such as high od pressure, heart disease, cancer, muscle-wasting diseases, eases of the brain and nerves, kidney disease and improperly ctioning endocrine glands. The importance of attacking de- erative diseases was reflected in the formation of a new olly public research foundation in Dec. 1947, guided jointly drug and pharmaceutic manufacturers and the medical pro- sion in the United States.

The Therapeutic Trials committee, a standing committee of Council on Pharmacy and Chemistry of the American Medi- association, was organized to bring together the discoverers promising drugs and those qualified to investigate them. jects during 1947 included a combined attack on the study the treatment of cancer using hormones and a comprehen- e approach to the treatment of poliomyelitis.

Radioactive isotopes were used to study the activities of the rmal body and of diseased areas, and to treat diseases such cancer of the thyroid, and certain blood diseases such as caemia. Knowledge in this field advanced sufficiently to rmit the loan of many isotopes on a rental basis from the omic Energy commission, the issuance being restricted to ose qualified to use such products.

Of related interest were the use of hormones for cancer of e prostate gland and of the breast; pteroylglutamic com- unds, derivatives of folic acid, for cancer; urethane for caemia, a disease of the blood cell forming tissues; nitrogen stards for cancerlike blood diseases; podophyllin, which is tained from the mandrake or May apple root, for cancer; and dium fluoride, iodoacetic acid and malanic acid, which are supposed to interfere with cancer digestion of sugars and starches. Such trials, even if they should prove disappointing, would open the door to further discoveries. Some idea of the thoroughness of the studies can be gained by reflecting that about 100 radioactive isotopes were developed in the laboratory and more than 50 nitrogen mustards had been made since the end of World War II. This was remindful of the 5,000 odd sulfonamide derivatives that were made within 4 or 5 years after the value of sulfanilamide and sulfapyridine was established. Only a handful of these sulfonamides proved practical—even sulfapyridine had been discarded because of its toxicity—but thousands were explored before the best were discovered and tested.



PROMIN, a sulfone drug used in treating leprosy, being tested by three of its five co-discoverers. Nineteen patients treated with the drug were discharged from the U.S. leprosarium at Carville, La., in Feb. 1947

Other exploratory efforts in cancer studies involved the use of the much publicized KR serum, made from *Trypanosoma cruzi,* an organism responsible for Chagas' disease; tyrosinase to reduce the white blood cells in leucaemia; H.11 Extract, made from the thymus gland and the amidines, including stilbamidine and pentamidine, for multiple myeloma, a cancerous disease of the bone marrow, to relieve pain and to slow the disease temporarily. Like other new cancer treatments under investigation, the amidines were not known to be curative. Still others would probably prove worthless as they are re-examined.

The role of streptomycin in the treatment of tuberculosis was more clearly defined, and it was shown to be effective in some forms of the disease, but not sufficiently safe or effective to replace standard treatment in all cases. Its toxicity, especially the effect on hearing, limited its use. However, this drug might prove valuable in the treatment of plague and rabbit fever. In mice it was found to be 90% effective for the former disease. Production of streptomycin increased until the supply was almost equivalent to the demand.

Penicillin was shown beyond doubt to be effective in the treatment of syphilis, but its lasting effects were more in doubt than in 1946. Relapses seemed to be occurring with disturbing frequency. The usefulness of penicillin increased as the action was prolonged after injection by the concurrent use of preparations intended to slow the excretion of penicillin from the body; caronamide works thus by decreasing the passage of penicillin through the kidney. The "Romansky formula" (a mixture of penicillin, peanut oil and beeswax), which was developed to permit one daily injection of penicillin instead of six or eight, was modified to overcome the necessity of warming before administration; free flowing preparations were made available. Other means of slowing down body destruction or elimination of penicillin included the application of ice packs, the use of pectin as a base and the simultaneous injection of drugs to lessen blood circulation at the site of penicillin injection. Penicillin was claimed to be more effective in wounds when used with haemoglobin from blood.

Other items of interest in the antibiotic field included the clinical evaluation of bacitracin, which was discovered by Dr. F. L. Meleney of Columbia University College of Physicians and Surgeons, for local infections. Bacitracin was obtained originally from a germ found in an infected wound. California Spanish moss provided an extract found effective in the control of tuberculosis in guinea pigs. Tomatin was secured from the leaves and stems of tomato plants and was shown capable of attacking "athlete's foot" fungi and other fungi; aerosporin might prove effective against whooping cough and typhoid fever; and wild mushrooms yielded several antibiotics active at least in test tubes.

The terror of pneumonia was reduced with the advent of, first, antipneumoccocic sera, and later, the sulfonamides (sulfa drugs) and penicillin, but there was presented to the medical profession a vaccine made from the capsules of the pneumococcal germs to develop immunity against this infection. How effective it would be remained to be seen, as pneumonia is caused by many types of bacteria.

Other infectious processes, or their results, that were brought under further control were brucellosis, against which para-aminobenzoic acid is effective; rheumatic fever, for which para-aminobenzoic acid was used conjointly with salicylates; elephantiasis, which in rats responded to treatment with a cyanine dye; and filiariasis, for which antimony compounds were formerly used, but which responded to a new arsenic compound and to piperazines, as well as cyanines.

The symptomatic relief of asthma had been aided by increasing the medical armamentarium to include benadryl, pyribenzamine, neoantergan and aludrine. The latter was discovered in German files after World War II.

Other agents affecting the involuntary muscular system of the body were priscol, used to combat poor circulation; amyl nitrite, inhaled for hiccoughs; dibenamine, which appeared to cause relaxation of blood vessels by blocking nerve impulses; and tetraethylammonium chloride, which blocks nerve action and permits increased flow of blood.

The use of drugs in the mental field included the intravenous administration of pentothal and amytal to permit free questioning by psychiatrists; the use of nitrous oxide (laughing gas) to calm mental cases; dilantin, mesantoin and tridione for epilepsy; and synhexyl, a synthetic drug somewhat like cannabis (hashish) for depression, but which was still in the experimental stage as it might cause some people to become maniacal. Glutamic acid received widespread attention because of a report that it increased the learning ability of rats and of children.

Other interesting findings included the use of amino acids for myasthenia gravis, a muscle-wasting disease; methadon (a synthetic agent discovered in Germany) and metopon (a derivative of opium developed in the United States) for the relief of pain; vitamin K for chillblains; toluidine blue for the control of bleeding seen in the radiation sickness following exposure to atomic energy; intravenous administration of procaine, a so-called local anaesthetic, for injuries and chronic diseases; BAL to counteract the harmful effects sometimes observed following the use of gold in arthritis; crude liver extract, methionine and choline for liver disease; enterogastrone (a hormone derived from the stomach of hogs) for ulcers; and the use of sodium fluoride, tryptophane (an amino acid) and penicillin to counteract tooth decay. In the latter respect, it was shown that the daily drinking of copious amounts of lemon juice caused etching of the teeth.

Among other phases of chemotherapy were the reports that aspirin may start bleeding after tooth extraction (this substance had previously been mentioned as a cause of ulcers), and the discarding of thiouracil by the A.M.A. Council on Pharmacy and Chemistry in favour of propylthiouracil, which is far less toxic and fully as effective. An interesting sidelight on thiouracil was the demonstration of its usefulness to cause fattening of hogs and lengthening of certain feathers in birds.

During 1947 there was announced the development of a device for administering without injection fluids into and under the skin; the gadget forces the material through the skin in a fine stream and under considerable pressure, which can be regulated to obtain the desired depth of penetration. The device was nicknamed the "hypospray." It offered a means of minimizing the pain normally associated with injection techniques. (*See* also DENTISTRY; MEDICINE; PNEUMONIA; SURGERY; UROLOGY; VITAMINS.) (A. E. SH.)

## Chemurgy.

Heavy demand for consumer goods stimulated chemurgic research during 1947. Many new chemurgic products appeared commercially, while laboratory research brought other items to the pilot-plant stage.

Interest continued to range from national crops such as corn to specialized items such as walnuts. Zein, an alcohol-soluble protein derived from corn, though itself not newly discovered, was adapted to new uses, one being the manufacture of phonograph records. English walnut hulls contain 3% to 5% of vitamin C, and research in 1947 indicated that walnut hulls, long a bothersome waste, might profitably be utilized as a source of ascorbic acid.

**Castor Beans.**—The growing demand for castor-bean oil, which can be dehydrated to yield a superior drying oil for industrial purposes, led to steps for initiating domestic production of castor beans on a commercial basis. The Baker Castor Oil company in 1947 contracted with farmers in Illinois, Oklahoma, Arkansas and Kansas to grow 800 ac. of castor beans to multiply seed. Production for crushing was expected to begin in 1948.

Experiment stations in several midwestern states were speeding research to improve castor-bean varieties. They reported progress toward developing several types with seed that will not shatter and with plants of medium, uniform height, to make mechanical harvesting economical.

Castor-bean research, if successful, would provide a new staple crop in an area centring on the Mississippi river between the corn and cotton belts, and perhaps in the southwest.

**Furfural.**—A plant for processing a product of corncobs into an ingredient for nylon was under construction during 1947 at Niagara Falls by E. I. du Pont de Nemours & Co. Furfural, an aldehyde derived from corncobs, oat hulls, and to a smaller extent from cottonseed hulls, peanut shells, rice husks, flax shives, sugar cane bagasse and wood fibre by-products, makes the conversion possible.

Beginning with furfural, the processing stages are furan, tetrahydrofuran, 1,4 dichlorobutane, adiponitrile and hexamethylene diamine. When the hexamethylene diamine is combined with other chemicals, nylon salts result. One bushel of corncobs, when processed and combined with the other necessary chemicals, will yield about 40 pairs of nylon stockings.

As much as 100,000 tons of corncobs and other farm wastes were expected to be used when the nylon plant was in full operation.

**Peanuts.**—Several companies were reported to have begun plans in 1947 to obtain synthetic textile fibres from shelled peanuts. After removing colouring matter from the skins, or discarding the skins entirely, a low oil content meal is obtained by solvent extraction and a purified protein is separated from the meal. Synthetic fibres are spun from the protein by wet processes similar to those used in viscose-rayon production.

Preliminary tests showed that a modified peanut protein ranked well with other proteins used in paper-coating mixtures. The protein was successfully incorporated in cold-water paint that gave good results in U.S. department of agriculture tests.

**Pectin.**—Low-methoxyl pectin from waste citrus peel makes a good casing for sausages, cheese, dried fruit or other products. It dissolves upon boiling, but is tender and edible. It may be eaten if used with food that is fried or consumed uncooked.

**Rutin.**—More than 15 companies in 1947 were producing rutin on a commercial scale. Useful in the treatment of increased capillary fragility, a condition sometimes accompanying high blood pressure, rutin is extracted from buckwheat. U.S. department of agriculture officials estimated that the annual demand for rutin would eventually exceed 1,000,000 lb. This would require raising 50,000 additional acres of buckwheat.

**Soybeans.**—The soybean continued to be a leading product for use in the chemurgic field. Soybean glue had been used more than any other type in the plywood industry after 1937, and had represented a consumption of about 45,000,000 lb. of soybean meal a year. Soybean protein, being light-coloured, had become especially useful in paper coating, paper sizing, making textile fibre, in water paints and fire extinguisher compound. According to the department of agriculture, soybean protein would soon be used much more extensively in tire-cord sizing, textile sizing, bookbinding, sandpaper adhesive, abrasive wheel binder, match-head binder, cork binder for gaskets, remoistening adhesives for labels, tacky glues and paper lamination. In 1947 a manufacturer of shotgun shells made commercial use of soybean protein adhesives for shell casings.

**Starch.**—Allyl starch, when dissolved in certain organic solvents, forms a hard, glossy, insoluble and heat-resistant lacquer. Allyl starch is made from starch, allyl chloride and caustic soda. Considerable commercial interest was shown in the product, which was being produced on a pilot-plant scale to provide sufficient quantities for further utilization studies.

**Straw.**—Results of studies of the properties of wheat straw showed that it is at least equal in quality to sugar cane bagasse for making high-grade insulating boards. The Northern Regional Research laboratory of the U.S. department of agriculture late in 1947 issued a circular showing how manufacturers can use straw for this purpose.

**Vegetable Wastes.**—A number of micro-organisms grow well on concentrated juice from waste asparagus butts. An antibiotic derived from one of the organisms was named subtilin. Indications were that it might become useful in treating tuberculosis and amoebic dysentery. Subtilin was also believed to have anti-fungal properties of potential commercial value.

(W. McM.)

**Cherries:** *see* Fruit.

## Chess.

Although the United States continued its usual national program, chess experienced a slight lull in Europe preparatory to the staging of the world championship in 1948. Thus, no successor was named to replace Dr. Alexander A. Alekhine as world champion. In European competition, C. H. O'D. Alexander, the British champion, won the annual international event at Hastings, England. Dr. I. Xavier Tarktakower of France won an international tournament at Baarn, the Netherlands, while Alberic O'Kelly of Belgium placed first in the European zone championship at Hilversum, the Netherlands. Irish-born O'Kelly didn't lose a match in accumulating a 10½–2½ score. Ludek Pachman of Czechoslovakia and Dr. Petar Trifunovic of Yugoslavia were tied for second, each with 9½–3½. Paul Keres won the Russian title.

CHESS CONTESTANTS at one of 83 tables set across the U.S.-Canadian border at Blaine, Wash., in Aug. 1947. Canadians won the Class A event in the international tournament

In a masters' tournament at Havana, Cuba, Gilberto Garcia of Santiago, Cuba, won with 5½–1½.

The U.S. open championship, which is worth approximately $1,000 in prize money, was won by Isaac Kashdan of New York city. He defeated a field of 86 players at Corpus Christi, Tex., with 11½–1½. Anthony E. Santasiere of New York city and Dan Abe Yanofsky of Winnipeg, Man., were tied for second with 10–3 each.

Santasiere won both the New York state and New York open titles, while Max Pavey, former champion of Scotland, won the national speed title. Robert Byrnes of Yale won the intercollegiate crown. Larry Friedman of Cleveland, Ohio, repeated as junior champion.

In team play, the U.S.S.R. team defeated Great Britain.

(M. P. W.)

## Chiang Kai-shek

(1887– ), president of China, commander in chief of its military forces and director-general of the Kuomintang, who was regarded as the symbol of a new and united China during its eight years of war against aggression, began to lose prestige and popularity at home and abroad in 1947 and to be openly attacked and denounced by the communists, as China's runaway inflation and its civil war further weakened China's international position and deepened the long suffering of its people. Nevertheless, Chiang was still the centre of politics and was generally accepted as the

GENERALISSIMO Chiang Kai-shek shown at Shanghai as he signed the document calling for a new Chinese constitution to take effect Dec. 25, 1947

indispensable leader in China's crisis. In his 1947 New Year's message to the nation Chiang emphasized that "without unity, China cannot exist, nor can she be regenerated" and he urged the communists not to try to seize political power by the use of arms but to continue peace negotiations with the government. To meet the crisis he ordered on Feb. 16 sweeping economic reforms and immediate reorganization of the government. Following the reorganization of the government, it adopted Chiang's proposal for national general mobilization in early June, which he enforced to quell the communist rebellion. In return the communists denounced him as the chief instigator of the civil war and called on the people to overthrow Chiang's government.

At the age of 60 Chiang enjoyed good health and continued to live a Spartan life and to exhort his people to observe good order, respect law, obey discipline and practice thriftiness and fortitude. However, the deterioration of the military, political and economic situation also caused him to despair, and in early September Chiang was quoted as saying that his 20-year leadership had been a failure.

Chiang was born of a humble family in Feng-hwa, Chekiang province and rose to power as a soldier and revolutionary follower of Sun Yat-sen. In 1926 he led the northern expedition as generalissimo of the revolutionary forces, and the success of the national revolution made him a national and international figure. In 1927 Chiang established the national government in Nanking and married Soong Mei-ling. For more than 20 years he has held the reins of the Chinese government. (*See* also CHINA.)

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**Chicago.** Second largest U.S. city, a port of entry and the county seat of Cook county, Ill., at the southwest corner of Lake Michigan, Chicago is the largest centre of U.S. rail traffic and long-distance domestic air routes. Martin H Kennelly succeeded Edward J. Kelly as mayor in 1947.

The population of the city proper by the federal census o 1940 was 3,396,808; white population numbered 3,115,379, non white 281,429. The census bureau estimated the population o the entire metropolitan district in 1947 as 4,645,000 compared with 4,499,000 in 1940.

Employment and production were at high levels in 1947, un interrupted by large strikes until newspaper printers went ou Nov. 24. Only 26,400 persons were receiving public assistanc at the close of the year.

The Chicago Transit authority, a public body, on Sept. 3 assumed ownership and operation of the city's 500 mi. of surface car lines and 85 mi. of elevated and subway lines, with 3,125 street cars, 1,623 elevated cars, 843 buses and 22,000 employes. The price paid for the properties was $87,000,000 raised from the sale of $105,000,000 of revenue bonds. A smaller private bus system remained in operation.

Martin H. Kennelly, an independent antiorganization Democrat, was given the Democratic nomination for mayor. He wa opposed by Russell W. Root, Republican. At the election on April 1, Kennelly received 919,593 votes to 646,239 for Root Republicans increased their number of councilmen from 7 to 1 in a nominally nonpartisan body of 50.

On Nov. 4 the city's voters authorized bond issues of $39,000,000 of which $30,000,000 was for slum clearance and housing. Cook county voters at the same election authorized $12,000,000 of bonds, of which $7,000,000 was for rehabilitation o the county hospital. This reversed the trend toward lower deb which from 1930 had reduced the bonded debt of the six majo overlapping governmental bodies of the Chicago area from $396,556,600 to $228,584,600. Also at the Nov. 4 election Democratic-Republican coalition ticket of 21 candidates fo judges of the superior court was elected over a Progressiv party slate, by large majorities except for one vacancy.

Crime in 1947 showed a slight trend toward a decline excep for robbery and attacks on women. The situation was met b more indictments and convictions, more than 90% of the defendants being convicted and 1,086 sent to the penitentiary.

Chicago's wartime divorce wave receded in 1947, the numbe of decrees dropping to 15,405, compared with 16,741 the yea before. Marriage licenses dropped to 60,684 compared wit 66,622. Births for the first six months of the year totalle 40,562 compared with 27,384 for the same period of 1946.

Reorganization of Chicago schools was vigorously pushed b the new mayor. Herold C. Hunt was called from Kansas Cit and made general superintendent of schools on Aug. 5. Th school board budget for 1948 was set for approximatel $104,000,000.

The budget for Chicago's governmental bodies for 1948 wa $295,060,262.

The city's record high budget was matched by a recor budget for Cook county of $33,462,829.

At the close of 1947 Chicago banks had deposits of $8,092,443,000, loans and discounts of $2,062,473,000, bond holdings o $3,878,297,000 and cash resources of $2,144,955,000.

The Chicago *Tribune* celebrated its centennial June 10, 1947 with elaborate festivities. The Chicago *Sun* combined with th afternoon tabloid *Times* on Aug. 6 and the two papers publishe a joint Sunday edition, although the daily publications remaine separate. (L. H. L.)

**Chicago, University of.** The University of Chicago conferred 2,269 degrees during th academic year 1946–47. Seven hundred and eighty-three bachelor's degrees were granted by the college of the universit which admits students into its four-year program after the sophomore year of high school. Other degrees granted were: 432 bachelor's degrees in the divisions and schools, 600 master's degrees, 117 doctor of philosophy degrees and 337 professional degrees in business administration, divinity, law, medicine, library science and social service.

After exclusion of income used for auxiliary enterprises and restricted expendable funds, as well as most of the income received and paid out on numerous contracts with the United States government (all nonprofit undertakings), the estimated regular budget income for the 1947–48 year was $15,556,282, an increase of $1,822,380 over the previous year's actual budget of $13,733,902. Total current income for the year 1946–47 before the exclusion mentioned above, was $25,612,330, and the comparable estimated total current income for 1947–48 was $28,229,598. Gifts for all purposes for the 1946–47 period amounted to $2,340,334, a decrease of 16.3%. Endowment funds as of June 30, 1947, were $71,767,171, and the book value of all the university assets was $139,279,081.

A bronze plaque, marking the site of the first self-sustaining chain reaction under the west stands of Stagg field at the University of Chicago, was dedicated Dec. 2, 1947, on the fifth anniversary of the Atomic Age. The epochal event which took place in a squash-racquets court in 1942 initiated the controlled release of nuclear energy. The plaque was unveiled before many of the scientists who worked secretly on the atomic bomb and before members of the United States Atomic Energy commission. Speakers on the anniversary occasion included Enrico Fermi, Nobel prize winner, and Charles H. Swift, distinguished service professor of physics, who designed the pile, the university's chancellor, Robert Maynard Hutchins, and Sumner T. Pike, Robert F. Bacher and William W. Waymack, members of the Atomic Energy commission.

Fundamental research at the university during 1947 emanated principally from the knowledge gained during World War II when the university with its Metallurgical laboratory (renamed the Argonne National laboratory) was one of the major centres of research in the development of the atomic bomb. The university's three new institutes—the Institute for Nuclear Studies, the Institute of Radiobiology and Biophysics and the Institute for the Study of Metals—grew out of the Metallurgical laboratory.

Prewar blueprints for housing the institutes gave way to postwar building. Ground was broken in July 1947 for the ion accelerator building, first unit in the university's $12,000,000 building program for basic scientific research in nucleonics. The $1,250,000 basement and one-story laboratory would house a 100,000,000-volt betatron, a 170-in cyclotron, which was to produce a beam up to 300-400 Mev, and the university's rebuilt cyclotron. Other buildings planned for the institutes included offices and laboratories covering one city block adjacent to the north side of the campus. The U.S. government, through the navy, and a number of industries contributed to the partial support of the institutes.

The Argonne National laboratory was also operated by the University of Chicago under a contract with the United States Atomic Energy commission. Twenty-nine midwestern institutions, including the university, co-operated in the research program during 1947. A permanent site for the Argonne was selected 26 mi. southwest of the centre of Chicago in DuPage county. All reactor development and research was consolidated under the direction of Walter H. Zinn.

In the biological sciences, a broad and sustained basic research program to solve the complicated mystery of cancer was given added impetus by the Cancer Research foundation. Organized in 1946, the foundation was engaged during 1947 in raising funds for a $5,150,000 building and equipment program. One million dollars had already been given by the Goldblatt Brothers foundation for the Nathan Goldblatt Memorial hospital—to be one of three in the nation devoted exclusively to cancer research. An anonymous grant of $980,000 had also been made toward the construction of the giant cyclotron whose proton beam was a promising possibility for super-X-ray-type radiation in cancer therapy. In an intensive campaign extending from Nov. 11 to Dec. 22, $1,200,000 was raised toward the initial cost of the Goldblatt hospital, $1,600,000; and of the cyclotron, $1,550,000; and for general needs in cancer activities. A $2,000,000 isotope laboratory for research and treatment with radioactive isotopes was the final and uncompleted part of the program.

The Goldblatt hospital, scheduled for construction in the spring of 1948, would provide an out-patient clinic, a radiology clinic, operating suites and two floors for patients and research. It would also serve as headquarters for the university's 21-man committee on cancer, including Nobel prize winners James Franck and Harold C. Urey. Dr. Charles B. Huggins was named chairman of the co-ordinating group, which in recognition of the fundamental nature of the cancer problem comprised representatives from 17 scientific departments in the university. Research at the university had already made significant contributions to the progress against cancer. These included the first-known chemical test for a form of cancer, a hormone suppression treatment for prostatic cancer, the nitrogen mustard treatment for leucaemia and operative techniques for cancers of the oesophagus and pancreas.

In addition to the cancer research facilities, plans were also under way in the university clinics for construction of the Charles Gilman Smith hospital for infectious diseases, and the Gertrude Dunn Hicks wing to Albert Merritt Billings hospital.

The year 1947 marked the golden anniversaries of Yerkes observatory and of the downtown adult education centre, University college. The 50th anniversary of Yerkes was observed in Williams Bay, Wis., with a special meeting of the American Astronomical society, also commemorating its semicentennial, and with a three-day symposium on planetary atmospheres.

Chancellor Hutchins returned to the university June 30, 1947, after a leave of absence for the academic year to participate in the expanded adult education activities of the Encyclopædia Britannica, Inc. and its affiliated company, Encyclopædia Britannica Films Inc. Hutchins also continued as editor of Great Books of the Western World.

The university's Committee to Frame A World Constitution—headed by Hutchins, Richard P. McKeon, G. A. Borgese, Wilber G. Katz, Robert Redfield, Rexford Guy Tugwell and other authorities in the field of world government—planned to present its preliminary constitutional draft in 1948.

Buildings under construction at the university in 1947, in addition to the ion accelerator building, included a $920,000 administration building, the first unit in the $2,000,000 faculty housing project, and a $500,000 building to house the laboratories of the American Meat Institute foundation. The six-story administration building, providing facilities for effective intercommunication among the principal administrative offices and for conducting business with students and public, was scheduled for occupancy in the spring of 1948. (For statistics of endowment, enrolment, faculty, library volumes, etc., *see* UNIVERSITIES AND COLLEGES.)

## Child Labour.

United States.—Although employment of children and young people decreased with the disappearance of war-production pressures, the number of boys and girls under 18 at work was still in the millions during

1947. Apparently the sudden postwar drop in employment of minors was beginning to level off by 1947. In Oct. 1947, after children had gone back to school, the number of young workers 14 through 17 years of age estimated as employed full time or part time was 2,240,000, nearly as many as in Oct. 1946 (2,370,000). Two-thirds were in service trades and in manufacturing, commercial and other nonagricultural industries; one-third were doing farm work. Almost three-fourths of the 16- and 17-year-old workers and half of the 14- and 15-year-olds were working in nonagricultural industries.

In 1947 some advances in state child-labour legislation were made, though fewer than had been hoped. Alabama became the 18th state to establish a basic 16-year minimum age for employment. Massachusetts strengthened its basic 16-year minimum age standard. Another significant development was the establishment or improvement in a few states of standards for employment of children in agriculture.

The child-labour provisions of the Fair Labor Standards act, applying to establishments producing goods for interstate or foreign commerce, with a basic 16-year minimum age and an 18-year minimum in occupations found and declared particularly hazardous, had been a strong influence in reducing industrial employment of children and in supporting state child-labour standards. The co-operative program carried on by the U.S. labour department with state labour and education officials, under which state certificates of age were made available as proof of age for minors, continued during 1947. This program helped prevent violations by giving employers a means of being certain that the children employed were of legal age.

An investigation of the accident hazards of pulpwood logging resulted in the extension of Hazardous Occupations Order No. 4 to include pulpwood logging as well as saw-timber logging.

The child labour program of the U.S. department of labour, which in July 1946 was separated from the children's bureau under the president's Reorganization Plan No. 2 of 1946, was again reorganized in July 1947 and was transferred from the division of labour standards to the wage and hour division. The child-labour research and the age-certification activities were now carried on by the newly-created child labour branch of that division, while the enforcement of the child-labour provisions of the Fair Labor Standards act was merged with the enforcement of the wage and hour provisions of the act.

**Great Britain.**—According to a report of the ministry of labour and national service published in 1947, the number of boys and girls under 18 years of age insured under the unemployment-insurance acts in mid-1946 was 1,765,000. These figures excluded some workers in agriculture and all workers in domestic service.

The industrial distribution of boys and girls who did not go to work until 16 or 17 was different from that of those who went to work before reaching the age of 16. Thus, in the period from mid-1945 to mid-1946, 25% of the boys and 40% of the girls in the upper-age class entered public utilities, professional services, entertainment, commerce and finance and government service, whereas the corresponding proportions in the lower-age class were 7% of the boys and 10% of the girls. On the other hand, among both boys and girls about 50% of the entrants 14 and 15 years old went into manufacturing industries, compared with 39% of the boys and 28% of the girls in the 16- and 17-year-old class.

On April 1, 1947, the school-leaving age provisions of the Education act for England and Wales and the Education act for Scotland went into effect, raising from 14 to 15 the age for compulsory full-time school attendance. A 16-year minimum age for required full-time attendance was to be established as soon as practicable, and compulsory part-time education was to be required up to 18 years of age, this provision to go into eff not later than April 1, 1950.

**Japan.**—A minimum age of 15 for employment was esta lished, except as light work in specified industries was permit outside school hours for children between 12 and 15. Ot sections of the law related to hours of labour, to prohibition hazardous occupations and of night work and to employm certificates. (E. S. J.)

## Children's Books.

Most significant to the field of c dren's literature in 1947 was the pub cation *Illustrators of Children's Books* by Bertha Maho Louise Latimer and Beulah Folmsbee. More books were p lished than during 1946, and colour in picture books continu despite the increased publishing difficulties, as witness *T Golden Egg Book* by Margaret Brown. *The Little Red Fe Boat* by Russell Potter and the delightful photographs by Y in *The Sleepy Little Lion* appealed to the realistic taste. *C ous George Takes a Job* by Hans Rey and *Down Hucklebe Hill* by Leonard Weisgard delighted, and again Dr. Seuss (T. Geisel) captivated all with *McElligot's Pool.* The comic-st device was successfully employed in the illustrations of Ma Ets in *Oley the Sea Monster* and by Helen Sewell in *Three T Tales.* Easily read books were Carolyn Haywood's *Little Ed* and Edith Heal's *The Golden Bowl.*

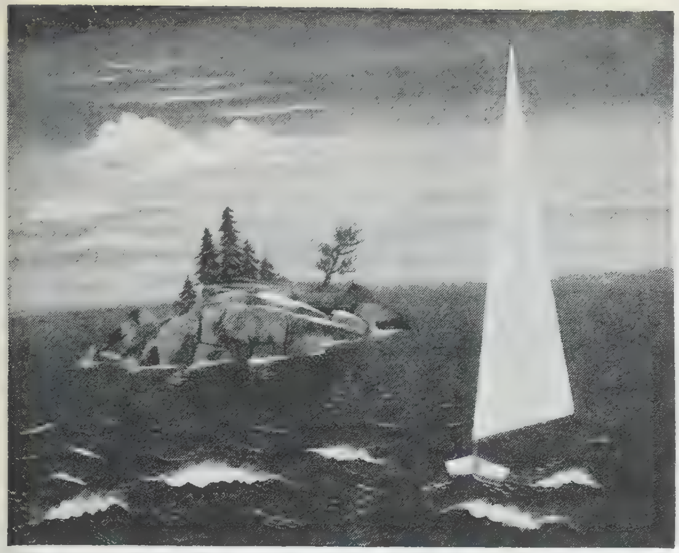
Additions to folklore were *The Cow-Tail Switch* (West Af ca) by Harold Courlander and George Herzog, John Ewe *Written in Sand* (Australia), *Winter-Telling Stories* (Kio Indians) by Alice Marriott and Alexei Tolstoy's *Russian Ta for Children;* adapted and given fine format was *Stone Soup* Marcia Brown while Wanda Gag left a fitting bequest in *M Tales from Grimm. By His Own Might* (Beowulf) by Dorot Hosford and *Rogue Reynard* by Andre Norton enriched tra tional literature.

Realistic stories for girls of eight to ten years were rep sented by Elizabeth Coatsworth in *Plum Daffy Adventure* a by Helen Daringer with *Adopted Jane.* Mabel Hunt wrote Quakers in *The Double Birthday Present* and Lois Lenski c tinued her regional stories in *Judy's Journey* (Alabama a Florida). Poignant was *Pancakes—Paris* by Claire Bishop mystery characterized *Star of India* by Jean Bothwell and story of China was *The Secret of the Porcelain Fish* by M gery Evernden. *Jared's Island* (the Jersey coast, 1760) Marguerite de Angeli and *Benjamin West and His Cat Grim kin* by Marguerite Henry and Wesley Dennis were of histori interest.

Humour characterized *The Twenty-One Balloons* of Willi du Bois and *Mr. Twigg's Mistake* of Robert Lawson. *Bambi the Clown* by Georges Schreiber was beautifully illustrated wh *Positive Pete!* was a rollicking yarn by Phil Stong. Fantasies varying appeal were *The King Gives a Party* by Samuel W ster, *Sky High* by Walter Hodges and *The Other Side of Green Hills* by John Cross.

Horse stories were popular, *Windy Foot at the County F* by Frances Frost being for younger and *The Magnificent B* of Dana Faralla for older. Stephen Holt wrote *Prairie C* (Alberta); and Iris Vinton, *Flying Ebony* (Long Island, 184 while *A Horse to Remember* by Genevieve Eames won the Ju Ellsworth Ford award. A boy and his dog appeared in *Bird D Bargain* by Kenneth Gilbert and two stories of cats were *M Kelly* by Elisabeth Holding and *The School for Cats* by Est Averill. Unusual animal heroes were *The Story of Pam* (chimpanzee) by Mabel Woodbury and *Princess of the Ch nel Isles* (cow) by Eleanor Hoffman.

Multiple interests in nonfiction ranged from *You and United Nations* by Lois Fisher for younger and *How the Uni*



LEONARD WEISGARD'S jacket design for *The Little Island;* his illustrations won for the book the Caldecott medal for the most distinguished picture book for children in 1947

*Nations Work* by Tom Galt for older, to *All About Us* (anthropology) by Eva Evans and *Anywhere in the World* (nature) by Irma Webber. Herbert Zim's *Plants, a Guide to Plant Hobbies* appealed to junior high. *The Great Heritage* by Katherine Shippen was on natural resources of the U.S., and for stamp collectors was *America's Stamps* by Maude and Miska Petersham. Stimulating was Marion Downer's *Discovering Design; Rhymes and Verses* represented the collected poems of Walter de la Mare and younger children enjoyed *The Rainbow Dictionary* by Wendell Wright. Biography was creditably handled, as in *David Livingstone, Foe of Darkness* by Jeanette Eaton and *Gilbert & Sullivan, Masters of Mirth and Melody* by Claire Purdy.

*North Star Shining* by Hildegarde Swift was thought-provoking on the Negro contribution, and other enjoyable stories were *River Treasure* (North Carolina) by Mebane Burwyn and *Jasper, the Drummin' Boy* by Margaret Taylor.

Older girls occupied with problems of today read *Willow Hill* by Phyllis Whitney and *The Divided Heart* by Mina Lewiton. Helene Laird answered many questions in *Nancy Keeps House,* while *By-Line Dennie* by Natalie Frazier concerned a small-town newspaper and Florence Means in *Assorted Sisters* presented an unsentimental picture of missionary life. Unusual were *The Story of Christina* (circus) by Hope Newell and *Nikoline's Choice* (Danes in Utah, 1880) by Margaret Maw.

Older boys read *Shad Haul* by Paul Corey (about co-operatives), *Danger to Windward* by Armstrong Sperry (about whaling) and *Partners of the Powder Hole* by Robert Davis. Sport and school stories were represented by *Gridiron Challenge* by Jack Scholz and *Bertie Comes Through* by Henry Felsen. *Mark of the Leopard* by Alden Stevens and Patricia Kendall continued the story of Simba of central Africa.

Notable were *A French ABC* by Francine Dauphin and *Song of Robin Hood* by Anne Malcolmson; Florence Fitch interpreted oriental religions in *Their Search for God.* Collections of stories were *The Treasure Bag* edited by Lena Barksdale, *Read-to-Me Storybook* (modern stories) by the Child Study Association of America and *The Enchanted Book* edited by Alice Dalgliesh. *Writing Juvenile Fiction* by Phyllis Whitney and *Writing for Children* by Erick Berry and Herbert Best were welcomed. Christmas stories by Dorothy Lathrop, Elizabeth Yates and Lavinia Davis appeared. Fritz Kredel illustrated a new edition of *Aesop's Fables* and Tasha Tudor did *A Child's Garden of Verses;* a deluxe edition of *The Wonderful Adventures of Nils* by Selma Lagerlof and *The Violet Fairy Book* and *The Crimson Fairy Book* received new formats. (*See* also BOOK PUBLISHING; LITERARY PRIZES.) (E. A. Gs.)

# Child Welfare.

**International Services.**—Hunger and malnutrition remained foremost among the war-created afflictions still borne by children. Civil wars, especially in China, continued to add in 1947 to the number of children thus handicapped. The year's most significant new development for meeting the needs of these children was the International Children's Emergency fund (I.C.E.F.) with headquarters at Lake Success, N.Y. This organization, established in Dec. 1946 by the general assembly of the United Nations, was not operating until the year was well advanced. It took over some of the responsibilities previously carried by the United Nations Relief and Rehabilitation administration (U.N.R.R.A.) whose council recommended creation of I.C.E.F.

There were, by the end of the year, in excess of 3,000,000 children in Europe for whom I.C.E.F. was providing or had plans for providing a daily supplementary meal. This service was in operation in Austria, Bulgaria, Czechoslovakia, Finland, Greece, Hungary, Italy, Poland and Rumania. Preparations had been made to extend the feeding program to Albania and Yugoslavia. Unfavourable conditions existing in France led to plans for serving a large number of children in that country. Plans also called for 1948 aid to children in China and other areas in the far east.

The I.C.E.F. proposed to use its resources for the following, with priorities in the order indicated: (1) supplementing essential food and other supplies needed to alleviate malnutrition and disease in children and to safeguard the health of expectant and nursing mothers; (2) encouraging the re-establishment of children's institutions and services destroyed by war through supplying clothing, shoes, cod-liver oil and medical supplies and (3) enlisting co-operation of the U.N. and other organizations in giving assistance for fellowships for the training of health and welfare personnel for children's work.

The substantial but inadequate amount of $38,932,000 had been contributed or pledged to I.C.E.F. by Dec. 1947. Fourteen governments contributed or pledged $27,267,000 and the balance of $11,665,000 was derived from other sources, mostly U.N.R.R.A. assets.

Children in countries not reached, as well as in those reached, by U.N.R.R.A. and I.C.E.F. were well served by the sectarian relief agencies under Jewish, Protestant or Roman Catholic auspices. Many were privately aided through the Co-operative for American Remittances to Europe (CARE). The hesitation of governments to appropriate in proportion to needs for international relief seemed to stimulate contributions from individuals through nonsectarian and sectarian channels. Steps to co-ordinate the financial and service activities of such agencies were being taken in 1947.

The Commission on International Educational Reconstruction, 744 Jackson place, N.W., Washington, D.C., established late in 1946, became effective in 1947. This voluntary organization, sponsored by the American Council on Education, was designated by the U.S. national commission for the United Nations Educational, Scientific and Cultural organization (U.N.E.S.C.O.) as the agency to stimulate and co-ordinate U.S. voluntary efforts on behalf of education in devastated countries.

Resumption of international conferences of professional workers who specialize in service to children was well under way by the end of the year. The fifth International Congress of Pediatrics, held in New York city in July 1947, was attended by pediatricians from 63 countries. Announcements had been widely circulated of the plans and programs of the ninth Pan-American Child congress, Caracas, Venezuela, to be held in Jan.

1948; the International Conference of Social Work, Atlantic City, N.J., to be held in April 1948 and the International Congress on Mental Health, London, England, to be held in Aug. 1948.

The U.N. interest in child welfare was expressed on numerous occasions by the Economic and Social council and the Social commission. Most of their activity was limited to studies and resolutions, but in these 1947 may have seen the sanctions needed to assure later development of international organizations and services whereby children of all lands may profit from professional achievements and social planning, wherever they occur. The publications of these and related bodies were receiving increased attention throughout the world.

**National Developments.** — European countries which were neutral during World War II, especially Sweden and Switzerland, sustained their previously superior services in the fields of education, health and welfare and carried to adjoining countries material aid and much-needed cultural leadership.

Even those seriously damaged by war took steps to improve their services to children. Finland extended its well-baby clinics, which soon would be required by the public-health law in every community. France extended school health services, and its social-security benefits for maternity leave and services were maintained under extremely serious economic strain. Russia's extension of various professional services for children was continued.

Occupied countries in Asia and Europe found military governments beginning to supply local child-welfare services which had been missing. Consultants on child welfare went to Germany, Japan and smaller countries during 1947.

China's plight called for more than the services its children had received from the Chinese Relief and Rehabilitation administration (C.N.R.R.A.), successor to U.N.R.R.A. Religious bodies and other agencies resumed services to children, many of which were under Chinese control even though subsidized by missionary organizations or some of the constituent units of United Services to China. But Asia, like Africa, had few favoured areas in which morbidity and mortality rates were kept under the social controls developing in other parts of the world.

Several Latin American countries extended their health services to children though much of this work remained on an occasional or demonstration basis. Social security, including maternity benefits, was authorized even in the smaller countries of Central America though it was too early to observe the effect of such legislation authorized late in 1946 in the Dominican R public and Guatemala.

"BY THE THROAT," Duffy's version, in the *Baltimore Sun*, of the widespread hunger which was undermining the health of European children in 1947, leaving them easy prey to tuberculosis and deficiency diseases

Australia, Canada, New Zealand and the United Kingdo continued to provide a more universal coverage than in oth large countries, both in child health services and the vario forms of social security for children and mothers establish under the Beveridge plan (U.K.) and the Marsh plan (Canada Dental services in Australia and New Zealand and the Chi Endowment in Australia assured basic health and adequa nutrition as in no other parts of the world unless it was in t smaller and highly developed European countries least damag by World War II.

The United States continued to present contrasts of unm needs, including illiteracy in some states, and in others some the world's most advanced services in education, health a welfare. The traditional inadequacy of Aid to Dependent Chi dren (A.D.C.), intended to keep children with their mothers other close relatives when otherwise they might require care foster homes or institutions, remained seriously meagre in a but a few states. For Sept. 1947 the Social Security bullet (Nov. 1947) reported the average per family receiving A.D. grants to be less than $40 monthly in 11 states and more tha $75 monthly in only 17 states. In California the grant per fam ly averaged $101.43 for that month and in New York $101.o but in all other states the average was less than $100 a famil Such aid was received by a total of 407,610 families and 1,03 210 children. The total amount paid, including federal and sta funds, was $25,472,965, a significant and substantial month outlay in the country's efforts to provide the security of hon life for its children, but also only a fraction of the amount the families needed with the 1947 costs of living higher than previous years.

Various forces hard to reconcile placed the welfare of ch dren in the United States in hazard. Recovery from wartin conditions was sufficient to permit many families to reunite a new families to establish themselves within the previous t years, with the result that more children were born in 19 than in any previous year, the estimated number exceedi 3,500,000. This happened in spite of the continued scarcity housing and the increased costs of living.

Marriage at younger ages than before the war was commo With this trend sustained, the status of family life and chi welfare was expected to be affected. Marriage at older ag was resulting in an excessive number of one-child families. N with fewer single-child families the economics of child care w expected to require more attention from communities as well from parents.

The use of day-care facilities remained nearly at wartin levels, the number of mothers employed in many communit keeping pace with the unprecedented rate of general emplo ment. Withdrawal of certain wartime support and the increas cost of operating day-care facilities led to the closing of ma child-care centres. Statistics on this trend were unavailabl but it was observed, especially in surveys of social needs a resources, that there remained an inadequate amount of orga ized day-care service. With the closing of established day-ca units, parents turned to independent arrangements, too oft leaving little children under care of older boys and girls.

The necessity of improvising resources for occasional care children led to an unprecedented employment of "baby sitters As part-time employment this type of child care previously w regarded as inconsequential, but to consider child welfare 1947 and ignore the baby sitter would be unrealistic.

The increased demand for literature aimed at parent educ tion suggested progress in the understanding of children whi might be the year's greatest achievement in child welfare.

Above: GERMAN youngsters suffering from malnutrition are shown boarding train at Berlin in May 1947, for a three-month period of rehabilitation in Switzerland

Above: SLUM COURTYARD of a tenement district in Rome, Italy. The area housed about 10,000 unemployed and their families in 1947, most of them living in one-room apartments

Above: JAPANESE school children in Tokyo being sprayed with DDT to check the spread of disease in 1947. Girls proved the chief carriers of lice as most boys were customarily close-shaven

Left: POVERTY-STRICKEN Rumanian family approaching a Red Cross depot in Moldavia where they hoped to receive clothing and medical supplies. Starvation in northern Rumania was aggravated by a severe drought early in 1947

Adoption of children claimed an unusual amount of attention. The U.S. children's bureau reported (*The Child,* May 1947) that at least 20 state legislatures in session during the year considered extensive changes in their adoption laws and related procedures. Only about one-fourth of the states had adoption legislation which adequately protected the child, his natural parents and his adoptive parents. The importance of such protection is obvious with about 30,000 of the 50,000 children for whom adoption proceedings are initiated annually being born out of wedlock. The bureau's recommendations on adoption legislation, sponsored by the Council of State Governments in its proposals for state action in 1947, were:

1. Adoption proceedings should be held before a court accustomed or qualified (otherwise) to handle children's cases, in the locality or state where the petitioners for adoption reside.
2. Consent to adoption should be obtained from the natural parents, or, if their parental rights have been legally relinquished or terminated, or if there is no parent, from the person or agency legally authorized to consent to the adoption.
3. The court in every proposed child adoption should have the benefit of study and recommendations by the state welfare department, or an agency designated by it. The department or the agency should have the right to appear at the hearings.
4. Court hearings should be closed to the public and the confidential nature of the records should be assured.
5. A period of residence in the adoption home, preferably one year, should be required prior to issuance of the final adoption decree, so that the suitability of the adoption may be determined.

Child labour safeguards were less than in other previous years. The U.S. congress voted reduced appropriations for federal child labour activities and made several important changes in the administration of this work. For enforcement work, $35,819, about one-third of the amount allowed for 1946, was allowed, and for research into child labour and youth employment problems $110,328, about one-half the 1946 appropriation, was allowed. The child labour and youth employment branch of the division of labour standards of the labour department no longer existed. The child-labour law enforcement work was transferred to and assimilated by the wage-hour division. A child labour branch was set up in the wage-hour division with activities limited primarily to an age-certification program, research involving matters related directly to the child labour provisions of the Wage-Hour act and the statistical, informational and public-relations work.

Scarcity of professionally trained social workers continued to be one of the country's serious child-welfare problems. The Child Welfare League of America, with the co-operation of the Russell Sage foundation, in a study of salaries of child-welfare workers, found substantial increases in salaries as compared with those paid during war years. A lag in the provision of adequate salaries in many communities, however, left child welfare services confronting the same embarrassing shortages in skilled personnel which hampered schools and hospitals as they sought their complete complements of teachers and nurses.

The National Commission on Children and Youth played an important role in co-ordinating planning for child welfare, especially the services under governmental auspices. Its program of action for 1947 and 1948 focused attention on unmet needs in the fields of education, health and welfare. From its beginning the commission brought together leaders in the professions serving children in these fields and thereby advanced badly needed and more comprehensive thinking and planning. (*See* also BIRTH STATISTICS; CENSUS DATA, 1947; CRIME; FEDERAL BUREAU OF INVESTIGATION; INFANT MORTALITY; JUVENILE DELINQUENCY; MARRIAGE AND DIVORCE; SOCIAL SECURITY.)

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(H. W. HK.)

**Chile.** A republic fronting on the south Pacific coast of So America for about 2,600 mi., its average width be only 110 mi. Area, 286,323 sq.mi.; pop. (1945 est.), 5,389,5 density (1944), 18.29 per square mile. The racial composit is largely white; mestizos are estimated at 15% and Indi (chiefly Araucanians in the far south) at 5%. The bulk of population lives in the central valley; Santiago province al has (1945 est.) 1,535,969 inhabitants (density per square m 223.12). The capital is Santiago (pop., including suburbs, 1 census, 952,075). Other important cities (with pop. in 1 census) are Valparaíso (212,072), Concepción (85,938), V del Mar (70,013), Talca (45,462), Antofagasta (50,244), C llán (39,909), Temuco (39,217), Iquique (37,713), Talcahu (30,082), Valdivia (34,600), Lota (1945 est., 34,445), R cagua (21,621), Punta Arenas (29,883), Osorno (25,075), Serena (21,383), Puerto Montt (21,552) and Curicó (19,53 Roman Catholicism is the dominant religion. President in 19 Gabriel González Videla.

**History.**—The year 1947 was characterized especially by increasing sharpness of the communist issue, the climax com in the breaking of diplomatic relations between Chile and Soviet Union in October. The first test of political stren came in municipal elections April 6. The anticommunist fr elected a total of 834 municipal councilmen to 568 won parties in the leftist Democratic alliance. Of the rightist parti the Conservatives won 277 and the Liberals 208. The co munists, who made their chief issue out of the Truman d trine, approximately tripled their previous voting strength; th were reported even in early returns to have won 137 munici council seats as compared with 65 won in municipal elections 1944. President González on April 16 swore in a new cabi composed of 11 Radical party members (his own party) a one Democrat. Labour conflicts, allegedly communist inspir increased sharply in May. On June 5, the Chilean Confede tion of Labour withdrew from the C.T.A.L. (Confederación Trabajadores de América Latina), charging that under the pr dency of the Mexican labour leader, Vicente Lombardo To dano, that organization had succumbed to communist influen A strike of bus drivers in Santiago resulted in a president decree on June 13 placing the capital under a state of em gency; the strike was settled on June 20.

President González on Aug. 2 formed a new "nonpolitic cabinet. On Aug. 21 the chamber of deputies authorized government to suspend individual constitutional guarantees i move to deal with a series of reportedly communist-led strik Large parts of the country's postal and telegraphic services w paralyzed from Aug. 12 to Aug. 16 by a strike in those servic A serious coal strike of 20,000 miners belonging to communi dominated unions was brought to an end on Aug. 23. In a la coal strike the government on Oct. 6 ordered troops to ta over affected mines of the Central Chilean Coal company; alleged communists were arrested as strike leaders. Two da later the government deported two Yugoslav diplomats, And Cunja and Dalibor Jakasa, to Argentina, charging that th were communist agitators largely responsible for the curre strikes. The government's statement linked communist activ in Chile with the revived communist international organizat and asserted that Gen. Ljubmir Ilitch, Yugoslav minister Argentina and Marshal Tito's representative at President G zález' inauguration in 1946, had been instructed to intensify a co-ordinate a campaign against the United States, to attack t policy of continental defense and to develop a plan of sabota On Oct. 11 Yugoslavia severed diplomatic relations with Chi calling the Chilean charges "fantastic libels" and charging Ch with acting in the expansionist interests of certain unnam powers. The following day the Chilean ambassador to the Sov

Union apologized to that government for a machine-gun attack on the soviet embassy in Santiago.

The government concluded an agreement on Oct. 15 for purchase of U.S. coal and asserted the following day that the 13-day coal strike was virtually over, although independent sources said at the same time that only 8,000 of the 20,000 striking miners had returned to work. The miners had reportedly been threatened with court martial on Oct. 13. The government on Oct. 21 severed diplomatic relations with the Soviet Union and Czechoslovakia, charging inspiration of communist unrest among the coal miners. González at the same time announced the end of a 12-day strike in the Schwager mines in central Chile after 2,000 miners had battled troops with dynamite in pits running under the Pacific. On Oct. 22 police arrested 200 communist leaders on charges of inciting rebellion among the miners, arrested the staff of *El Siglo* and placed four mineral-producing provinces under military control. Two days later the government announced that soviet and Czech envoys would be held until Chilean diplomats were permitted to leave Moscow and Prague. The government on Dec. 5 broke a 24-hr. railway strike, allegedly communist-led, by authorizing the military railway management to discharge undesirable workers.

The government during the year considered a five-year plan of hospital construction to cost 600,000,000 pesos.

**Education.**—A state technical university was created in April 1947 as a branch of the ministry of education; it was designed to embrace a number of educational institutions already established, including the school of industrial engineering, parts of the vocational schools, three schools of mines and two industrial schools. Extension classes of the University of Chile were organized as the Valentín Letelier People's university.

**Finance.**—The monetary unit is the peso, valued on Oct. 31, 1947, at from 1.96 to 5.16 cents, U.S. currency, depending on the type of exchange. Government expenditures in 1947, the finance minister reported on Sept. 3, would total 8,244,000,000 pesos and those for 1948 were estimated at 7,716,000,000 pesos. The treasury deficit for 1947 was anticipated to be about 855,000,000 pesos and an estimated 1948 deficit of 293,000,000 pesos was forecast. The government on Nov. 7 revalued the gold reserves on the basis of 31 instead of 30 pesos to the dollar, thus giving the treasury a profit of 930,943,863 pesos. Currency in circulation May 27 was 3,728,800,000 pesos; rediscounts of commercial banks on the same date totalled 564,700,000 pesos. The treasury deficit on June 30 was 2,159,000,000 pesos. Shortage of foreign exchange was serious during the year and on July 10 the government banned dollar allotments for luxury imports and also for trips abroad for pleasure. Further import restrictions were adopted on July 23. The government concluded a financial agreement with Great Britain on July 12. A total of 1,360,000,000 pesos was allotted for public works expenditures in 1948, an increase of 530,000,000 pesos over the corresponding 1947 figure, accounted for chiefly by an allocation of 300,000,000 pesos for improvements in the state railways and 200,000,000 pesos for construction of public buildings. The price index for Chile increased 497% between 1928 and 1946 and the cost-of-living index gained 393% in the same period.

**Trade and Communications.**—The favourable merchandise trade balance for 1947 as of July 30 was only 22,800,000 gold pesos (gold peso equals 20.597 U.S. cents). Nitrate exports in 1946–47 were 1,571,898 metric tons (1945–46: 1,614,615 tons). Agricultural exports as a whole in 1946 were valued at about $50,000,000; rice exports during the same year were valued at almost $8,000,000, the highest value of any single agricultural item. Onion exports in 1946 were 5,075 metric tons (1945: 2,607 tons), of which the U.S. took 35%; garlic exports in the same year were 4,690 metric tons (1945: 3,163 tons) valued at $1,482,366 (1945: $714,922). Raw cotton imports in the first five months of 1947 were 4,369 metric tons (same period in 1946: 2,478 tons); cotton yarn imports in the same period were 606 metric tons (same period in 1946: 654 tons). The government concluded two important commercial agreements with Argentina. One, concluded at the end of 1946 (Dec. 13), was a treaty of customs union, economic and financial co-operation; it provided for establishment of a revolving Argentine credit of $26,800,000 to help Chile finance its unfavourable trade balance with Argentina, pointed toward an Argentine investment of $80,430,000 in Chilean industrialization (especially copper, iron, steel, nitrates, coal, wood and electric power) with Chile guaranteeing excess production for sale to Argentina, provided a like sum as an Argentine loan to Chile for public works construction (especially roads and railroads) which would be aimed at promoting Chilean-Argentine commercial exchange and aimed at the elimination of tariffs except on competing items and products. In the second agreement, signed July 12, Chile pledged to give Argentina a favoured position in purchase of Chilean nitrates in return for which Argentina would abandon manufacture of synthetic nitrates. Negotiations with the U.S. resulted on May 8 in extending the two countries' provisional commercial agreement for one year from July 1, to be followed by negotiations for a treaty of friendship, commerce and navigation.

Railway passenger, baggage and freight rates were increased by an average of up to 50% in 1947, a total average increase of 243% from 1928; the anticipated deficit for operation of the state railways in 1947 was 505,308,000 pesos. Chile concluded a bilateral aviation agreement with the United States on May 10, an agreement with Brazil on July 4 dealing with air transportation, economic co-operation, passenger transit and tourist travel and commerce, and one with Peru on aviation on Aug. 7.

CHILEAN TROOPS searching workers rounded up during a clash between police and striking bus drivers in Santiago on June 12, 1947. A 30-day state of emergency was ordered in the province after the death of 4 persons

**Agriculture.**—Estimates of production of various specialty crops in the agriculturally rich central valley in 1946–47 included: oranges 500,000 boxes (1945–46: about the same); lemons 450,000 boxes (1945–46: 350,000 boxes); hemp fibre 3,904 metric tons (1945–46: 5,369 tons); flax fibre 1,165 metric tons (1945–46: 1,365 tons); onions 68,932 metric tons (1945–46: 49,134 tons); rice 89,084 metric tons (1945–46: 117,941 tons). Of cereal crops, the estimate of wheat production for 1946–47 was down 3%, that of oats was down 20%, that of rye was down 9% and that of barley was up 32%; most cereal crops were damaged by excessive rains but otherwise growing conditions were favourable. A new law on farm labour organization became effective July 29. The government planned an irrigation project in the Azapa valley in northern Chile at an estimated cost of 29,072,000 pesos.

**Manufacturing and Mining.**—Production of cotton yarn in 1947 was estimated at 9,440,000 kg. Nitrate production in the year ending June 30 was 1,540,000 metric tons (1945–46: 1,603,820 tons); production in 1947 was seriously interfered with by the series of strikes; bad weather, which prevented loadings for a period of two weeks in June, and port congestion were other unfavourable factors. A new process was developed in 1947 for recovery of potassium nitrate. Coal production was even more seriously cut by strikes in 1947; the government early in the year adopted a program to increase coal production over a five-year period at an estimated cost of 84,000,000 pesos. Whale-oil production in 1946 was 2,985 metric tons (1945: 3,456 tons); the catch of whales in 1946 was 585 (1945: 477) and in the first four months of 1947 was 277. The 1946 production of fish and shellfish was 61,000 metric tons, with an increase expected for 1947. A serious electric power shortage developed in central Chile in May because of low water levels.

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**China.** A republic of eastern Asia. Area: about 3,876,956 sq.mi., divided into 35 provinces, including Taiwan (Formosa), the 9 provinces of Manchuria and a special territory, Tibet. According to the 1947 official estimate, the total population was 455,900,468. The 12 leading cities, under direct central government control in 1947, were Nanking (capital) 1,037,656; Shanghai 3,853,511; Peiping 1,602,234; Tientsin 1,679,210; Chungking 1,000,101; Canton 1,276,429; Mukden 1,175,620; Hankow 749,952; Tsingtao 752,800; Harbin 760,000; Dairen 543,690; Sian 523,183. The predominant beliefs are Confucianism, Buddhism, Taoism and Christianity.

President (1947), Chiang Kai-shek; vice-president (1947), Sun Fo.

**History.**—Following Gen. George C. Marshall's departure from China on Jan. 8, 1947, and the release of his statement on the situation in China on the previous day, in which he condemned the extremists among the nationalists and communists for the continuance of civil war, Peng Hsueh-pei, then the minister of information, proclaimed the government's willingness to continue peace negotiations with the communists. In the meantime it named Gen. Chang Chih-chung to go to Yenan in an attempt to renew peace negotiations and gave its proposal to the communists through U.S. Ambassador John Leighton Stuart. The communists insisted on a return to the military positions of Jan. 13, 1946, and nullification of the new constitution as conditions for renewing negotiations, terms which were previously rejected by the government. On Jan. 21 the government offered four points as the basis for a resumption of peace talks: cessation of hostilities, with troops retaining their existing positions; army reorganization; reopening of communications; a just and equitable solution of the problem of regional administration. In the meantime the communists resumed an offensive in Manchuria while government troops launched big drives on the communists in Shantung and Shensi. Early in March the government ordered all communist personnel to leave government territory and on March 15 Chiang Kai-shek charged the communists with armed rebellion. The break between warring factions was final and complete. The capture of Yenan by government troops on March 19 elated the nationalists but the communist spokesmen expressed confidence in final victory by force. By the year's end the government military forces had made no further important gains, with the exception of the capture of Weihaiwei and Chefoo on the coast of Shantung in early October, which cut the communist sea lane to the southern ports in Manchuria. On the other hand, the communist raiders managed to move into central China in September and caused the closing of the Nanking gates on Sept. 18. In Manchuria the communists succeeded in reducing the government's control to Changchun and Mukden, an isolated pocket in Kirin, and the rail line leading from Mukden into China proper.

The reorganization of the government was partly precipitated by the economic and financial crisis during the early part of the year. To stimulate China's meagre export trade, Premier T. V. Soong announced on Feb. 5 that the government would grant a 100% bonus to exporters and that an ad valorem surcharge of 50% would be imposed on selected categories of imports. On Feb. 8 the U.S. consulate in Shanghai notified the Chinese government that for every cent it paid as a subsidy on exports an equal amount would be collected by the United States in addition to normal duties. This ruling blasted China's bonus plan and caused a further rise in prices and depreciation of the Chinese dollar. To meet the crisis Chiang ordered reorganization of the government and sweeping economic reforms. On March 1 Soong resigned as the premier, but because of prolonged negotiation with minority parties, reorganization did not become effective until April when a new state council was esta lished to replace the supreme national defense council of t Kuomintang. It provided for 40 seats, but by the end of 194 only 29 seats were filled: Kuomintang 17; Young China par 4; Democratic Socialist party 4; Independents 4. The oth 11 seats were reserved for the communists and the Democrat league. However, the communists denounced the new gover ment as a reactionary and traitorous regime, and the Dem cratic league was outlawed in October on the charge of plotti with the communists against the government. The post of vic president was created and in April Sun Fo assumed this offi and Gen. Chang Chun became premier. The executive yuan cabinet was enlarged to include 26 members in order to acco modate a minority of ministers who were not Kuomintang a pointees. With this reorganization the one-party regime w supposed to come to an end. From Nov. 21 to 23, millions registered voters participated in the first national election elect delegates to the national assembly, which, in turn, w empowered to elect the president and vice-president for si year terms. The election of the members of the legislative yua was postponed to 1948.

STUDENT DEMONSTRATION in Nanking, China, being broken up by police using a hose-line on May 20, 1947. Students were marching on a meeting of the People's Political council to demand higher food rations and an end to civil strife

China's internal strife was closely linked with its diplomat relations with the United States and the Soviet Union. Aft one year of continuous effort to bring the national governme and communists together, the United States government aba doned its task as a mediator in the Chinese civil war by wit drawing from the Committee of Three and the executive hea quarters in Peiping in February. The United States polic became unpopular in China. To avoid further complication China's affairs, the U.S. government informed the Soviet Uni that U.S. forces in China would be reduced to 6,180 men June 1. However, the deterioration of the economic and mil tary situation in China and the spread of communism in eas ern Asia led to the appointment of a U.S. fact-finding missi to China and Korea headed by Lieut. Gen. Albert C. Wed meyer, who arrived in Nanking on July 22. His mission w welcomed by the Chinese government but attacked by the co munists as imperialistic. On his departure from China, Wed meyer stated, on Aug. 24, *inter alia* that "if the Chinese Co munists are truly patriotic . . . they will halt voluntary emplo ment of force" and that "to regain and maintain the confiden of the people, the Central Government will have to effect imm diately drastic, far-reaching political and economic reforms The latter statement displeased the Chinese government a Premier Chang Chun declared on Sept. 2 that China would n alter either its domestic or its foreign policy as a result Wedemeyer's mission. The department of state withheld Wed meyer's report on China from publication. On Nov. 11 Secr tary of State Marshall submitted a program to congress calli for $300,000,000 in new relief for China.

At the Conference of Foreign Ministers in Moscow in Marc Vyacheslav Molotov of the Soviet Union proposed the inclusi of China as an item on the agenda, but the Chinese governme opposed soviet participation in mediating the Chinese civil wa Upon the strong insistence of General Marshall, the soviet pr posal was dropped. Soviet delay in turning Dairen and Po Arthur back to China evoked two notes of protest from t U.S. government: one on Jan. 3 and the other on Aug. 21, as a foreign shipping was barred from the international port Dairen by the Russians. On June 25 the Chinese foreign offi declared that the repeated refusal of the soviet government agree to the stationing of Chinese troops in Port Arthur a Dairen as agreed to in the Sino-soviet treaty of Aug. 1945, a the formation, expansion and strengthening by the Chinese co munists of their armed forces in their vicinity left the Chine government free at any time to decide on the exercise of t

**EVACUATION OF YENAN, capital of the Chinese communists after 1936. The city was found stripped and deserted when taken by nationalist forces on March 19, 1947**

right of sending troops and police to the Port Arthur area and Dairen. The soviet government justified its position by arguing that a state of war still existed with Japan. Sino-soviet relations were further strained by the participation of the Korean communists in the Chinese communist forces in Manchuria and by the border clashes in Sinkiang. Concerning the making of a peace treaty with Japan, China was in favour of the treaty's being drafted by the 11 countries represented on the Far Eastern commission with the concurrent vote of the Big Four. China was not in favour of a separate peace and feared a resurgent Japan under U.S. policy.

**Education.**—The 1947 program was directed mainly toward the promotion of mass and normal education and the strengthening of vocational education. The universities and colleges in 1947 increased to 193 with a total enrolment of more than 120,000 but the quality remained low. Political and social instability caused student unrest and strikes and the arrest of students by the government. In 1946 there were 4,530 secondary schools with an enrolment of 1,394,844 and 785,244 primary schools with 21,831,898 pupils. About 4% of the 1947 budget was devoted to educational and cultural purposes.

**Defense.**—According to the 1947 official tabulation the army, navy and air force numbered 4,557,362 including 536,913 officers. The total strength of the communist army was given as 1,170,000 by Gen. Chen Cheng. China maintained an effective air force of 300 planes with about 700 personnel. The Chinese navy of about 60 small vessels was augmented by Pres. Harry S. Truman's April 26 order to transfer to China without cost not more than 271 small and obsolete vessels. Military expenses occupied about 80% of the national budget.

**Finance.**—On Feb. 16 the official rate of exchange of the Chinese dollar (yuan) further depreciated to 12,000 to $1 U.S., but the black-market rate of exchange exceeded Ch.$100,000 to $1 U.S. toward the end of the year. Prices in the metropolitan areas were more than 10,000 times the prewar level. At the end of 1946 the volume of note issuance was officially given as Ch.$2,150,000,000,000. In Nov. 1947 the note issue exceeded 20,000,000,000,000 yuan. The 1946 budget was 2,524,000,000,000 yuan. The actual expenditures more than doubled this figure. The 1947 budget was placed at 9,370,000,000,000 yuan although in April the expenditures had already reached 5,000,000,000,000 yuan. Only about one-third of the budget was met by revenue. China's wartime loans totalled $1,345,080,568 and from V-J day to July 15, 1947, the total stipulated amount of U.S. aid was $1,240,450,000 but the total value of supplies actually received was $561,398,672. There were about 600 banks with more than 2,350 branch offices.

**Trade and Communication.**—In 1946 the total imports, one-half of which came from the United States, were valued at Ch.$1,501,165,246,000, and exports at Ch.$412,111,811,000. The value of the imports and exports for the first eight months of 1947 was Ch.$4,022,028,000,000 and Ch.$1,772,164,000,000, respectively. The adverse balance drained off China's foreign exchange which was estimated at only $300,000,000 U.S. Chief imports were cotton goods, gasoline, kerosene, metals and ores, machines and tools, chemicals and drugs. Tung oil, wax, animal products, seeds and kernels, tea and silk made up the main exports.

Less than half of China's 18,000 mi. of railways were in operation in 1947. Because of the delay in delivery only two-thirds of the expected shipping tonnage of 1,500,000 was reached. More than one-third of China's 100,000 mi. of highway badly needed repair. Excluding military vehicles, automobiles numbered about 60,000. Civil aviation, telecommunication and radio remained undeveloped.

**Agriculture, Manufactures, Mineral Production.**—China needs 24,478,000 metric tons of wheat and 51,432,000 metric tons of rice annually. The estimated wheat and rice crops in 1947 were 21,528,000 metric tons and 48,344,000 metric tons, respectively. Poultry and livestock were greatly below the prewar level. The food shortage remained serious. More than 60% of the heavy industries were under the direct control of the National Resources commission. Production lagged behind prewar level and the expected output of several minerals for 1947 was: coal 7,000,000 tons; iron and steel 250,000 tons (meeting about one-third of the demand); crude oil 12,000,000 gal.; gasoline 18,000,000 gal. The production of tungsten, antimony and tin was also far below former capacity.

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(H. T. CH.)

**Chinese Turkestan:** *see* SINKIANG.

**Cholera:** *see* EPIDEMICS.

**Chosen:** *see* KOREA.

**Christian Science.** Continuing its relief program begun in 1941, the First Church of Christ, Scientist, in Boston, Mass. (the Mother Church), added several interesting features to its postwar work in 1947.

Gift literature sent to Germany during the year brought the two-year total to more than 30 tons of Christian Science books and periodicals.

Through the participation of Christian Science branch churches and societies in the United States and Canada, a food-parcel program sent more than 345,000 packages of food to needy persons in 25 countries. As a member of Cooperative for American Remittances to Europe, Inc., the committee augmented the food parcels with thousands of CARE packages shipped throughout the world to Christian Science churches for distribution. The climax of the 1947 program was a shipment to Germany, valued at $143,000, consisting of 974 cases of clothing, food and Christian Science books.

Christian Science servicemen at approximately 105 military and naval training centres were being served by the Mother Church. Christian Science workers had been assigned to 156 veterans' hospitals in the United States and Canada, in addition to 48 army and navy hospitals. Christian Science chaplains, assisted by volunteer workers, were stationed with the occupation troops in Germany and Italy. There was a Christian Science chaplain at Pearl Harbor, Hawaii, and volunteer workers were serving in Alaska, Panama Canal Zone, Japan, Guam, Okinawa, Korea and the Philippines.

During 1947, 1,132 Christian Science books were distributed by Christian Science chaplains and workers, and 2,580 subscriptions to Christian Science periodicals were sent to army and navy training centres and veterans' hospitals.

*The Christian Science Monitor* received second honourable mention in the F. Wayland Ayer Exhibition of Newspaper Typography, and a citation from the Institute for American Democracy, Inc., of New York city, for encouraging a better understanding among men of all creeds, races and national origins.

*The Monitor* maintains a large staff of correspondents throughout the world. The editor of this newspaper became a *chevalier* in the Legion of Honour for his and his newspaper's service to France. The chief of the Washington bureau received an honorary degree of Doctor of Letters at the commencement exercises of Dartmouth college, Hanover, N.H. The assistant to the managing editor was awarded an alumni membership in the Phi Beta Kappa national scholarship fraternity at Harvard university, Cambridge, Mass. The foreign editor was the recipient of a medallion award for outstanding achievements in journalism during 1946 by Sigma Delta Chi.

Transcribed radio programs produced in the Mother Church were broadcast over nearly 300 stations throughout the United States (including Alaska and Hawaii), and in Cuba, Canada, New Zealand and Australia. Broadcasting of the regular Sunday morning service of the Mother Church in Boston twice a month and a 15-minute religious program direct from the church every Sunday morning was continued, as were special programs in the "Church of the Air" series of the Columbia Broadcasting system, on the devotional period of the Canadian Broadcasting corporation, and on the "Faith in Our Time" and "Radio Chapel" series of the Mutual Broadcasting system. (W. D. K.)

**Christian Unity.** Church unity movements in 1947 showed notable development on different levels in many lands. Several influential interchurch conferences were held, designed to promote the spirit of unity. These included the American Inter-Seminary conference, held at Oxford, O., which brought together probably the most extensive and representative group of young theological students ever gathere the Second World Conference of Christian Youth held in Osl Norway, in July with about 1,000 official delegates from all co tinents; and the first postwar meeting of the International Mi sionary council representing virtually all of the Protestant mi sion boards of the world and federating national Christian cou cils in 29 countries or areas, which convened in Whitby, Ontari Can., July 5 to 18 and took stock of the critical world situati in regard to foreign missions. The World Council of Church sent a representative delegation to confer with Eastern Orthod Churches in the Mediterranean countries outside the zone Russian influence, which secured highly satisfactory respons concerning the participation of the Orthodox churches in t council.

Four additional Eastern Orthodox churches joined the cou cil in 1947.

Various phases of the church federation movement took enlarged activities. The Federal Council of Churches of Chri in America made influential representative utterances in r spect to the economic order, religious liberty, civil rights, rel tions of church and state and international relations. After e isting for a decade in provisional form because of the interru tion of communications by World War II, the World Coun of Churches completed final arrangements for its full organiz tion and the adoption of the constitution at the first plena assembly to be held at Amsterdam, Neth., in the summer 1948. Major decisions with respect to this meeting were ma at a session of the Provisional committee at Buck Hill Fal Pa., in the fall of 1947.

A total of 34 additional churches in 21 countries joined t World Council of Churches in 1947, bringing the total numb of member churches to 127.

Parallel with active discussion of plans for the permane federal union of the Congregational, Methodist and Presbyteri churches in Australia and New Zealand, a sponsoring committ including former President Herbert Hoover, Mrs. Calv Coolidge and Gov. Luther W. Youngdahl of Minnesota carri out an aggressive "Crusade for a United Church" under a feder plan. The campaign, conducted by the missionary, Dr. E. Stanl Jones, included 30 major American cities and was expected visit an equal number in 1948. The crusade apparently elicit very strong approval for some type of union of the Americ churches on the part of the rank and file of church members which it was specifically addressed. Without the predetermin tion of the particular form of union to be sought, strong e clesiastical backing for a large American movement towa unity was given by influential Methodist bishops. The reinforc ment of the entire group of movements by the urgency of t times was strikingly evidenced in many quarters.

Discussions and negotiations for the union of particul churches have been actively under way in many quarters of t globe. In the U.S., Baptists (Northern convention) and Dis ples of Christ both secured stronger authorizations for the negotiating bodies. The United Presbyterian and Reformed America churches and northern and southern branches of t Presbyterian Church also announced progress in their respecti conversations. The movement to unite the Waldensians a Methodists in Italy was advanced. The union of a wide ran of the denominations in Ceylon was showing promise of realiz tion. After formal reference to the minor units or congregatio of both bodies, voting upon the proposed merger of the Co gregational Christian and Evangelical and Reformed churches the U.S. was under way in the concluding months of the yea with strong majorities for the union which was expected become effective by the middle of 1948.

The most notable achievement of the year in the field

Christian unity was the consummation, after 28 years of negotiation, of the union of three great Protestant churches to form the new Church of South India. The merging bodies included the South India dioceses of the Anglican Church, similar units of the (British) Methodist Church, and the South India United Church, representing an earlier union of Presbyterian, Reformed and Congregational bodies, both British and American. The new church had more than 1,100,000 members. It united widely separated types of churches under a carefully guarded constitutional Episcopal system.

Conversations concerning possible union hinging upon the validity of their respective ministries in the establishment of intercommunion were actively under way between the United Church of Canada (combining the Congregational, Methodist and Presbyterian churches of the country) and the Church of England in Canada. Conversations approaching the same issue in a similar way were resumed by the Church of England and representatives of the leading Free churches in that country.

(H. P. D.)

## Chromite.

The output of chromite in the major producing countries of the world, and the estimated world total for late years is shown in Table I.

Table I.—*World Production of Chromite*

(Thousands of short tons)

| | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|---|
| Cuba . . . . . | 57.7 | 179.9 | 315.8 | 390.4 | 211.8 | 190.3 | 192.0 |
| Greece . . . . | 32.8 | 17.9 | 26.8 | 17.1 | 20.2 | 2.6 | 9.4 |
| India . . . . . | 62.2 | 56.1 | 55.5 | 37.2 | 44.3 | 34.3 | ? |
| New Caledonia . | 61.5 | 71.1 | 74.6 | 51.8 | 60.9 | 45.0 | 27.4 |
| Philippines . . . | 221.4 | 330 | 55 | 66 | 77 | ? | 63 |
| South Africa. . . | 180.4 | 156.4 | 372.2 | 179.9 | 98.0 | 109.2 | 208.2 |
| S. Rhodesia . . . | 273.1 | 357.1 | 384.0 | 316.9 | 305.4 | 205.4 | 166.9 |
| Turkey . . . . . | 187.2 | 165.7 | 159.5 | 217.0 | 203.5 | 162.0 | 120.5 |
| U.S.S.R. . . . . | ? | ? | 440 | 358 | ? | ? | ? |
| United States . . | 3.0 | 14.3 | 112.9 | 160.1 | 45.6 | 14.0 | 4.1 |
| Yugoslavia . . . | 78.3 | ? | 110 | 72 | ? | ? | ? |
| Total . . . . | 1,607 | 2,023 | 2,238 | 2,015 | 1,600 | 1,210 | 1,210 |

Note.—Figures without a decimal are estimates.

World production declined almost one-half from the 1942 peak, to about the 1936 level.

**United States.**—For comparison, the supply and demand in the United States during World Wars I and II are shown in Table II.

Table II.—*Chromite Data for the United States for the Periods of World Wars I and II*

(Thousands of short tons)

| | Production | Imports | Supply | | Production | Imports | Supply | Consumption |
|---|---|---|---|---|---|---|---|---|
| 1914 | 0.7 | 83.7 | 84.4 | 1939 | 3.9 | 355.6 | 359.9 | ? |
| 1915 | 3.7 | 85.7 | 89.4 | 1940 | 3.0 | 736.6 | 739.6 | 562.9 |
| 1916 | 52.6 | 129.9 | 182.5 | 1941 | 14.3 | 1,115.3 | 1,129.6 | 800.3 |
| 1917 | 49.0 | 80.9 | 129.9 | 1942 | 112.9 | 981.6 | 1,094.5 | 892.0 |
| 1918 | 92.4 | 112.2 | 204.6 | 1943 | 160.1 | 928.6 | 1,088.7 | 964.6 |
| 1919 | 5.7 | 68.9 | 74.6 | 1944 | 45.6 | 848.4 | 894.0 | 848.4 |
| 1920 | 2.8 | 168.3 | 171.1 | 1945 | 14.0 | 914.8 | 928.8 | 808.1 |
| 1921 | 0.3 | 90.2 | 92.0 | 1946 | 4.1 | 757.4 | 761.5 | 734.8 |

As happened at the close of World War I and was to be expected after the close of World War II, the production of chromite practically ceased in the United States, leaving the supply dependent on imports. The normal prewar pattern of supply was altered considerably by war conditions and the postwar readjustments were still under way late in 1947.

Domestic consumption was expected to continue to expand.

Table III.—*Imports of Chromite into the United States*

(Thousands of short tons)

| | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|---|
| Cuba . . . . . . . | 58.2 | 179.9 | 137.8 | 310.7 | 349.1 | 297.8 | 204.3 |
| Greece . . . . . . | 15.7 | 2.2 | ... | ... | ... | ... | ... |
| U.S.S.R. . . . . . . | ... | ... | 30.1 | 99.9 | 112.3 | 166.1 | 99.0 |
| India . . . . . . . | 36.6 | 10.9 | 21.3 | 2.8 | ... | ... | 17.3 |
| Philippines . . . . . | 175.4 | 288.4 | 30.5 | ... | ... | ... | 30.5 |
| Turkey . . . . . . | 78.5 | 61.8 | 119.5 | 90.8 | 98.8 | 70.8 | 9.0 |
| South Africa . . . . | 126.3 | 189.7 | 262.3 | 111.6 | 40.4 | 110.4 | 235.3 |
| S. Rhodesia . . . . | 177.9 | 269.2 | 277.3 | 243.5 | 187.8 | 221.9 | 99.6 |
| New Caledonia . . . | 48.0 | 90.2 | 82.7 | 32.5 | 34.5 | 34.4 | 21.0 |
| Total . . . . . . | 736.6 | 1,115.3 | 981.6 | 928.6 | 848.4 | 914.8 | 757.4 |

The U.S. imports represented 51% of the world output in 1936 but 55% of the total in 1941. After 1942 world output had declined but the percentage of the total required for domestic consumption had increased to 62% in 1946.

New technological developments in the use of chromium and its alloys were expected to bring continued expansion in consumption, especially as applied to jet propulsion and other high-temperature alloys.

(G. A. Ro.)

**Chronology:** *see* CALENDAR OF EVENTS, 1947, pages 1–16.
**Churches, World Council of:** *see* CHRISTIAN UNITY.

## Churchill, Winston Leonard Spencer

(1874– ), British statesman, was born at Blenheim palace, Oxfordshire, England, on Nov. 30, the elder son of Lord Randolph Churchill. For his biography and his political career during World Wars I and II, see *Encyclopædia Britannica.*

In 1947 Churchill took further steps in his efforts for a United States of Europe, which he had advocated in a speech in Zürich, Switzerland, on Sept. 19, 1946. In January the formation of a United Europe committee, with Churchill as chairman, was announced. At a public rally in London on May 15, he called for "an organization in Great Britain to promote the cause of united Europe."

In the house of commons Churchill led the Conservative opposition. On Oct. 28, in moving an amendment to the king's speech he stated that the Conservative policy was to "establish a basic standard for life and labour, and (to) provide the necessary foods for all. Once that is done, set the people free." He was also active as leader of the party in its nation-wide campaign to prepare for the next election.

In May he visited Paris, where the premier, Paul Ramadier, decorated him with the *Médaille Militaire* in recognition of his services in the Allied cause.

## Church Membership.

The latest information concerning church membership in 54 religious bodies in the United States, each reporting more than 50,000 members, was that published by the *Christian Herald,* New York city, in June 1947 (*see* Table I). The total given for continental U.S. was 73,673,182 persons, mainly for years ending in 1946, compared with 71,700,142 reported by the same bodies the year previously. Some religious bodies do not compile and publish figures annually. In a few instances the latest data in the table are for the year 1936, the date of the last census of religious bodies taken by the federal bureau of the census. According to the official reports of the statisticians of the religious bodies, total church membership had been increasing for many years.

Church membership figures published in 1946 and 1947 represented the highest proportion of the total population ever reported in the religious bodies.

Table I.—*Church Membership in Continental United States, as Reported in 1947, for the Religious Bodies with More Than 50,000 Members*

| Body | Members 1947 | Members 1946 |
|---|---|---|
| Adventists, Seventh Day . . . . . . . . . . . . . . . . | 208,030 | 201,035 |
| Assemblies of God . . . . . . . . . . . . . . . . . | 241,782 | 241,782 |
| Baptist Bodies: | | |
| Northern Baptist Convention . . . . . . . . . . . . . | 1,592,349 | 1,565,400 |
| Southern Baptist Convention . . . . . . . . . . . . . | 6,079,305 | 5,667,926 |
| National Baptist Convention, U.S.A., Inc. . . . . . . . | 4,122,315 | 4,076,380 |
| National Baptist Convention of America . . . . . . . . | 2,575,621 | 2,352,339 |
| American Baptist Association. . . . . . . . . . . . . | 115,022 | 115,022 |
| Free Will Baptists . . . . . . . . . . . . . . . . . | 221,317 | 228,643 |
| National Baptist Evangelical Life and Soul Saving Assembly of U.S.A. . . . . . . . . . . . . . . . . . . . | 70,843 | 70,843 |
| Primitive Baptists . . . . . . . . . . . . . . . . . | 69,157 | 69,157 |
| United American Free Will Baptist Church . . . . . . . | 75,000 | 75,000 |

Table I.—*Church Membership in Continental United States, As Reported in 1947, for the Religious Bodies with More Than 50,000 Members—Continued*

| Body | Members 1947 | Members 1946 |
|---|---|---|
| Buddhist Churches of America | 70,000 | 70,000 |
| Church of the Brethren | 182,497 | 181,087 |
| Church of Christ, Scientist | 268,915 | 268,915 |
| Churches of God: | | |
| Church of God | 77,926 | 101,441 |
| Church of God (Anderson, Ind.) | 95,325 | 88,176 |
| Church of God in Christ | 300,000 | 300,000 |
| Church of the Nazarene | 201,487 | 190,620 |
| Churches of Christ | 309,551 | 309,551 |
| Congregational Christian | 1,140,824 | 1,113,930 |
| Disciples of Christ | 1,889,066 | 1,691,374 |
| Eastern Orthodox Churches: | | |
| Greek Orthodox (Hellenic) | 275,000 | 275,000 |
| Russian Orthodox | 300,000 | 300,000 |
| Evangelical and Reformed | 695,029 | 689,780 |
| Evangelical | | 248,195 |
| Evangelical United Brethren* | 705,102 | |
| Federated | 88,411 | 88,411 |
| Religious Society of Friends (Five Years' Meeting) | 113,465 | 113,638 |
| Independent Fundamental Churches of America | 65,000 | 65,000 |
| Jewish congregations | 4,641,000 | 4,641,200 |
| Latter Day Saints: | | |
| Church of Jesus Christ of Latter Day Saints | 911,279 | 810,644 |
| Reorganized Church of Jesus Christ of Latter Day Saints | 116,888 | 114,027 |
| Lutherans: | | |
| American Lutheran Conference: | | |
| American Lutheran | 601,839 | 584,499 |
| Evangelical Lutheran Augustana Synod of N.A. | 396,999 | 487,266 |
| Evangelical Lutheran Church† | 661,355 | 620,907 |
| Lutheran Synodical Conference of N.A.: | | |
| Evangelical Lutheran Synod of Missouri, Ohio and other states | 1,422,513 | 1,394,134 |
| Evangelical Lutheran Joint Synod of Wisconsin and other states | 259,097 | 259,097 |
| United Lutheran Church in America | 1,748,183 | 1,719,821 |
| Mennonite | 52,596 | 51,611 |
| Methodist Bodies: | | |
| African Methodist Episcopal | 868,735 | 868,735 |
| African Methodist Episcopal Zion | 489,244 | 489,244 |
| Colored Methodist Episcopal | 381,000 | 380,000 |
| Methodist | 8,430,146 | 8,083,767 |
| Polish National Catholic | 250,000 | 250,000 |
| Presbyterian Bodies: | | |
| Cumberland Presbyterian | 75,427 | 70,567 |
| Presbyterian Church in the U.S. | 596,037 | 580,665 |
| Presbyterian Church in the U.S.A. | 2,174,530 | 2,104,443 |
| United Presbyterian Church of North America | 198,815 | 198,759 |
| Protestant Episcopal | 2,155,514 | 2,163,711 |
| Reformed Bodies: | | |
| Christian Reformed | 134,608 | 128,914 |
| Reformed Church in America | 176,244 | 173,975 |
| Roman Catholic | 24,402,124 | 23,963,671 |
| Salvation Army | 210,000 | 206,412 |
| International General Assembly of Spiritualists | 100,000 | 100,000 |
| Unitarian | 74,789 | 61,948 |
| United Brethren in Christ | | 433,480 |
| Totals: | 73,673,182 | 71,700,142 |

Source: "Church Membership" publication—by *Christian Herald*.
*A merger of the Evangelical Church and the United Brethren in Christ, Nov. 1946.
†Name changed from Norwegian Lutheran Church.

The religious bodies having more than 50,000 members had 97.4% of all the church members in continental United States, according to a compilation of the reports of 256 religious bodies, published in the *Yearbook of American Churches* (1945). The remaining 2.6% of the members were in more than 200 bodies. Of the total reported church membership in 1945, 32.3% was Roman Catholic, 1.3% Old Catholic, Polish Catholic and Eastern Orthodox; 6.4% Jewish and 60% Protestant. In 1945 there were reported by 256 religious bodies 72,492,669 members, of whom 59,717,181 were 13 years of age and over, mainly for years ending in 1944. (B. Y. L.)

**Great Britain.**—The figures in Table II rest for the most part on a calculation of communicants; the figures for the Church of England, however, are taken from the electoral roll membership, and those of the Roman Catholic Church represent the adult membership as given in the *Catholic Directory*. This difference between methods of calculating membership prevents a comparison between the churches; a clearer estimation of the comparative numbers of each church was not yet possible in 1947, since official returns had not in every case been made during and after World War II.

Table II.—*Church Membership in Great Britain*

| | Membe |
|---|---|
| Church of England | 3,388,8 |
| Church of Wales | 196,3 |
| Episcopal Church in Scotland | 57,0 |
| Roman Catholic Church: England | 2,048,2 |
| Roman Catholic Church: Scotland | 488,2 |
| Church of Scotland | 1,264,1 |
| United Free Church of Scotland | 23,4 |
| Presbyterian Church of England | 74,5 |
| Presbyterian Church of Wales | 174,6 |
| Methodist Church | 767,4 |
| Wesleyan Reform Union | 11,9 |
| Independent Methodists | 9,9 |
| Congregational Church | 416,4 |
| Baptist Church | 382,3 |
| Churches of Christ | 12,7 |
| Society of Friends | 20,2 |
| Brethren | 80,0 |
| Unitarians | 30,0 |

Source: *A Christian Year Book* (London, 1947).

Figures for Northern Ireland are not included. (A. J. MAC.)

## Church of England.

In the course of the year the chur assembly inaugurated measures improve the payment and pensions of the clergy. Separate se sions of the house of laity, held under Lord Grey, resolved ask the laity to raise the stipends of the clergy to a minimu of £400 per annum, together with a house free of rates ar dilapidation charges, and allowances for dependents; the chur commissioners undertook to contribute £100,000 annually du ing the next six years for this purpose. Several diocesan boar supported the scheme, or a part of it, and in some cases t minimum stipend adopted was £500. A pensions measure, pr viding £200 at the age of 70 after 40 years of service, with £ for widows and £25 for orphans or fatherless children under r received general approval. Contributions were at the rate 5% per annum.

The work of reconstruction of the dioceses in bombed are went slowly forward. The Pastoral Re-organization measure w approved; it provided for the union of benefices and holdin in plurality, the diversion of endowment income and the r striction, in some cases, of the rights of patronage. The City London Tithe bill was passed by parliament, abolishing Lond tithe payments within 60 years and reducing the payments the successors of existing incumbents by 33%. Lord Selborn regulation to establish a Central Church of England Council Education to co-ordinate the work of the five councils co trolling different branches of educational activity received fin approval. The convocations of Canterbury and York receiv the report of the Canon Law commission (chairman, Dr. Cy Garbett, archbishop of York), together with a proposed ne code of canons. The code of 1603 had been completely revise and modernized. Important new regulations concerning nulli suits in marriage cases and concerning the church courts we proposed.

On Sept. 27 the four dioceses of Madras, Tinnevelly, Trava core and Dornakal were severed from the Anglican communi and became the Church of South India. They united with th Presbyterians, Methodists and Congregationalists in that are In convocation in October the archbishop of Canterbury fo mally condemned the book *The Rise of Christianity,* written b the bishop of Birmingham (Dr. E. W. Barnes), because it di not "adequately and faithfully express the general doctrines the Church of England."

The bishop of London (Dr. J. W. C. Wand) conducted h primary visitation at five centres of the diocese, the first epi copal visitation of London for 30 years. Bishop Arthur Hea lam of Gloucester died on Jan. 17. (A. J. MAC.)

**Church Reunion:** *see* CHRISTIAN UNITY.
**Cigars and Cigarettes:** *see* TOBACCO.
**Cinema Industry:** *see* MOTION PICTURES.

**Cinnamon:** *see* SPICES.

**C.I.O.:** *see* CONGRESS OF INDUSTRIAL ORGANIZATIONS.

**Citrus Fruits:** *see* FRUIT.

**City and Town Planning:** *see* TOWN AND REGIONAL PLANNING.

**City Government:** *see* MUNICIPAL GOVERNMENT.

**City Manager Plan:** *see* MUNICIPAL GOVERNMENT.

## Civil Aeronautics Administration.

The year 1947 was one of increased, though not always profitable, activity in civil aviation, resulting in a heavy workload for the Civil Aeronautics administration.

The scheduled air carriers added 41,500 route miles, or more than 30%. Nonscheduled air-carrier operations were brought under regulation for the first time, CAA issuing 1,479 certificates to such services, with 1,384 applications pending.

Student pilot permits were issued at the rate of about 200,000 a year, due in great part to activity under the G.I. Bill of Rights.

To assure prompt performance of the safety regulation functions involved in this growing volume, the system of designating qualified volunteer personnel in the industry was used to a greater degree. By the end of the year, more than 8,000 designees were acting for the CAA in specified inspection capacities.

Significant improvements were effected on the 40,000-mi. airways system operated by CAA. Regular commercial use of the CAA instrument landing system was begun by 11 air lines at 41 cities, making possible completion of schedules under lower ceilings and visibility than previously permitted.

More than 50 very high frequency radio ranges were installed under the program of converting the airways system to this virtually static-free form of transmission.

Use of airport surveillance and precision beam radar was begun by CAA at Washington National airport, La Guardia field, N.Y., and Chicago Municipal airport, with equipment turned over by the army air forces.

The Federal Aid Airport program was moving into high gear by year's end, with more than 100 grants made to communities for airport construction or improvement. Appropriations by congress to CAA for this program, which works on a matching basis similar to that used for public roads, totalled $77,500,000. A list of 908 projects to be handled with these funds was prepared by CAA—171 of them being class 4 or larger airports, the balance smaller fields, significant in the development of personal and local commercial flying.

Two technical advances of outstanding importance to personal flying were carried forward. One involved the development of cross-wind landing gear for seven types of planes, ranging from the Piper Cub to the DC-3. For this purpose the CAA had $150,000 in contracts with six manufacturers, three of whom already had completed successfully the application of cross-wind gear to smaller aircraft. It was hoped that this gear would make possible single-strip landing fields in metropolitan areas where undeveloped land is scarce.

The other big technical effort for personal flying is in the direction of quieter aeroplanes. At the request of CAA, the National Advisory Committee on Aeronautics was sponsoring a study of propeller and engine noise and had developed a multi-bladed propeller that considerably reduces the noise of light aircraft.

Other technical development work covered prevention and detection of fires; impact-resistant windshields; new types of airport and approach lights; distance-measuring equipment to be used in connection with the V.H.F. radio ranges; and crash-resistant fuel tanks.

Psychological research was carried out on the relationship of eyesight to the ability to learn to fly safely; improved methods for selecting, training and up-grading air line pilots on the basis of the critical requirements of the job; and stall-perception.

Assistance was furnished by CAA to state school systems in extending and improving their aviation education programs for peacetime purposes, through consultations, staging of institutes, preparation of materials, etc. Courses were given in the U.S. by CAA to trainees from Central and South America and the Philippines. (*See* also AIRPORTS AND FLYING FIELDS; AVIATION, CIVIL.)

(T. P. W.)

## Civil Liberties.

U.S. civil liberties experienced both progress and regression in the year 1947. On the affirmative side, a federal court held segregation by state law on interstate railroads unconstitutional. The supreme court reversed a conviction on the ground that the defendants were deprived of a fair trial because the state systematically excluded women from the juries. A federal court in California held that the segregation of Mexican-U.S. children in schools was unlawful. In Massachusetts, in the first important trial under a new statute, sale of the book *Forever Amber* was permitted.

Perhaps the most important forward step in decades was the report of the president's committee on civil rights. The committee of 15 issued a widely debated report emphasizing particularly the impairment of civil rights because of race, creed or colour. It proposed legislation strengthening federal criminal statutes, a bill against lynching, legislation directed towards equality of employment privileges, abandonment of restrictive covenants on the occupancy of real estate and the withholding of federal grants-in-aid to schools, hospitals or housing develop-

STUDENTS, demonstrating before the N.Y. state capitol at Albany in March 1947, demanded passage of a bill to outlaw racial and religious discrimination in the schools

ments practising racial or religious discrimination. It further proposed a system of full disclosure, through income tax returns and as a requirement for postal privileges, of the powers behind mass movements directed towards influencing thought.

In addition to its recommendations for federal action, the report stressed that U.S. democracy was dependent on local vigilance in maintaining civil rights and that much progress lay within the power of the individual states. The government began preparing legislation in support of some of the measures recommended by the committee.

The Labor-Management Relations (Taft-Hartley) act aroused criticism as being an impairment of many rights of labour, including the right to strike.

Also criticized were actions of the house of representatives committee on un-American activities, particularly the hearings involving political affiliations of Hollywood writers. Cases arising out of these hearings raised the fundamental question whether congress had the right to inquire into a person's political party affiliation, even without violating the secrecy of his ballot. A collateral question involved the problem of the government as an employer vis-à-vis persons who because of affiliation with underground organizations presented a potential danger of division of loyalty. The civil liberties question impinged primarily on the propriety of congress' instructing the state and defense departments to discharge suspected persons without any hearing. Employees of other departments of the government continued to be protected in their right to be presented with the charges against them, to have counsel and a full hearing and appeal by the president's proclamation on loyalty issued to forestall more stringent action by congress. An important civil rights question arose with respect to the right of an accused employee to be confronted with the witness who obtained the evidence against him. The rights of the individual sometimes conflicted with the fact that there were some areas where the government could not afford to sacrifice an investigating employee whose usefulness would be ended once his identity was known.

By 1947 a dozen states had already branded the Communist party as illegal and banned it from the electoral ballot. The only alternative which might succeed in preventing the spread of communism and yet preserve civil liberties seemed to be the proposal, submitted by the president's committee and approved by J. Edgar Hoover, that anonymity is unnecessary to any organization in a democracy and that repressive measures are unnecessary among a people informed as to the exact nature and sponsorship of organizations. (*See* also Aliens; Anti-Semitism; Birth Control; Education; Law; Lynching; Motion Pictures; Negroes, American; Newspapers and Magazines; Radio.) (M. L. E.)

**Great Britain and British Commonwealth.**—The economic crisis compelled the British government to introduce planning measures that were thought by some to be restrictive of liberty. The only measures which affected civil liberty appeared to be limited to: (1) the Control of Engagement order, which came into force on Oct. 6, 1947, providing that all engagement of employees should, with certain exceptions, be effected through an employment exchange; (2) the announcement that the powers of direction in Defense regulation 58A would be used more freely; (3) the restrictions under the Exchange Control act, 1947, and the Defense (Finance) regulations on the movement of travellers by prohibiting or limiting the taking of money out of the country; (4) the increased tax on foreign films; and (5) the limitation of the importation of books.

Lord Reading, for the Liberal party, introduced a bill known as a Bill of Rights into the house of lords which dealt with a miscellaneous collection of matters, including some recommendations of the 1932 committee on ministers' powers. The problems it dealt with were important but the bill was ill-draf and, after severe criticism by the lord chancellor, was dropp The Crown Proceedings act, 1947, increased the citizen's rig against the crown by removing mediaeval privileges which p vented action in the courts against a government departm and by removing exceptional rights to which the crown was titled. For nearly all practical purposes the crown (includ government departments) was then placed on an equal ba with other litigants.

A small revival of fascist activities caused some concern, the home secretary declined to introduce antifascist legislat because of the difficulty of defining fascism without includ other parties or unnecessarily interfering with free speech. T existing law was enforced, however, whenever disorders w caused.

In Australia an act for the protection of approved defe projects provided heavy penalties for obstructing any s project and was introduced as a result of communist opposit to the experimental base for long-range rockets in cent Australia. Freedom of speech could, according to the minist be safe-guarded for pacifists and persons concerned with Australian aborigine, since "reasonable cause" was a defense a charge of obstructing a project by speech or writing.

**Other Countries.**—In Austria nazi activities were bann and members of the nazi party deprived of the rights to v and to hold public office; they were barred from certain prof sions. In Bulgaria, Hungary and Rumania the peace treat were ratified and came into force; in each, the state was f bidden to make a law abridging human rights or civil liberti In Italy the new constitution was still under discussion in 19

The French constitution adopted at the close of 1946 c tained in the preamble a definition of civil liberties and hum rights; earlier in 1946, forced labour and other practices w suppressed in the French overseas territories.

During the year the United Nations Committee on Hun Rights, appointed by the Economic and Social council, p duced a draft international Bill of Rights which was under c sideration by all governments. The adoption of such a would enable world public opinion to be focused on the need civil liberties and on any state or body which interfered w them. (R. S. W. P.

**Civil Service.** During 1947, the civil service of fede state and municipal governments in the Uni States achieved, for the most part, a return to peacetime con tions of operation after a readjustment period extending thro the preceding year. An economy-minded congress orde budget cuts for many federal agencies, resulting in further ductions in federal pay rolls that had already declined marke from the end of the war. In contrast with the decline in f eral employment, state and local government pay rolls increa somewhat during the year.

Toward the end of 1947, federal employment showed indi tions of approaching a stable postwar level after dropp steadily for more than two years. As the year began, there w 1,980,000 federal civilian employees within the U.S. and an ad tional 296,000 stationed outside the country—a combined to of 2,276,000 federal employees. During the next ten mon this total decreased steadily, and by the end of October offic figures showed 1,774,000 federal employees within the U.S. a an additional 250,000 employed outside the country—a reduction of more than 250,000 employees. While turnover the release of many war emergency employees accounted most of this reduction, several thousand "career" employ were also laid off.

The year produced an upsurge of popular feeling against s versive activity, and one of its by-products was an extensive program for checking on the loyalty of federal employees. This program, conducted jointly by the Federal Bureau of Investigation and the U.S. civil service commission, contemplated investigations of all current employees and all future applicants for employment. To protect employees against dismissal on unfounded charges of disloyalty, an appeal board was set up and staffed by a group of distinguished citizens. By the end of the year, the loyalty investigation program was well under way, but it was still too soon to determine how many actual cases of disloyalty would be disclosed. (*See* also CIVIL LIBERTIES.)

Strikes by government employees became the subject of restrictive legislation in several quarters during the year. The Labor-Management Relations Act of 1947 (the so-called "Taft-Hartley law") included a provision prohibiting strikes by federal employees under penalty of dismissal. Strikes by state and municipal government employees were also outlawed in ten states during the year: Indiana, Michigan, Minnesota, Missouri, Nebraska, New Jersey, New York, Pennsylvania, Texas, and Washington. One state, Virginia, had passed such a law during the previous year. Very few strikes among public employees were reported during 1947; those that occurred were minor in scope and of short duration.

An employee union, the United Public Workers of America, attacked the constitutionality of the Hatch act, restricting political activity by federal and certain state and local employees. The U.S. supreme court upheld the law, ruling that congress has full authority to enact such legislation whenever, in its judgment, such restrictions are needed to protect the integrity and competency of the civil service.

Several states and cities increased the pay of their employees to alleviate the economic pressure produced by mounting inflation. In most instances lower-paid employees received the greatest proportionate increases; in a few localities, however, elected officials and other higher-paid appointive employees also received pay raises.

Legislation establishing civil service systems was adopted in several localities during the year, including Hartford, Conn., University City, Mo., and Brown County, Wis. In Texas a law was passed requiring that a referendum be held in each of the state's larger cities on the question of adopting a civil service system for their fire and police departments. (J. J. DN.)

**Great Britain.**—In 1947 the civil service still carried a large, though declining, volume of work in winding up war activities. Thus, the number in the service and supply departments fell during the first nine months of 1947 by 15,000. The continued scarcity of so many goods and supplies did not permit any relaxation of rationing or of measures for the control of raw materials. These made heavy demands on manpower.

There was some expansion in the social service departments, the main feature being the building up of the ministry of national insurance, largely by transfers from approved societies, in preparation for the new scheme of social insurance which was to come into force in July 1948. Strong efforts were, however, made to reduce the total number in the civil service, which fell in 1947 from 722,000 on Jan. 1 to 690,000 on Oct. 1. The reconstruction recruitment competitions were more than half completed. Recruitment at the normal ages of entry was resumed.

A ministry of defense was set up at the beginning of the year under the Ministry of Defense act, 1946. A central economic planning staff was set up in April 1947. It was part of the cabinet office, but afterward served under the minister for economic affairs, appointed in October. The dominions office was renamed the commonwealth relations office and absorbed such functions of the India office as remained after the constitutional changes in that country. With the transfer of power to the Burmans Jan. 4, 1948, the Burma office was closed. (E. E. Bs.)

## Clark, Thomas Campbell

(1899– ), U.S. lawyer and attorney-general, was born Sept. 23 in Dallas, Tex. He was graduated with an A.B. degree from the University of Texas (1921) and practised law. He was civil district attorney of Dallas county, 1927–32. In 1937, Clark was made special assistant to the attorney-general of the U.S. He was shifted to the department's antitrust division (1938), was later named co-ordinator of alien enemy control in the Western Defense command, and was given charge of the war frauds unit in the antitrust division in May 1942. Clark became assistant attorney-general of the antitrust division (March 1943) and in Aug. 1943, he headed the justice department's criminal division with his authority extending to the war frauds unit. President Truman named Clark to succeed Francis Biddle as U.S. attorney-general, May 23, 1945. Clark assumed office June 30.

The alarming growth of "red" hysteria in early 1947 led Clark to promise on May 10, in a Boston speech, that there would be no "witch hunts" in the government move to eliminate "subversive groups." However, on Dec. 4, after listing 90 organizations which he claimed were "subversive," Clark was criticized by civil liberties groups who urged that hearings be given the accused organizations.

In the summer of 1947, an effort made by G.O.P. to probe charges that Clark had blocked an investigation of vote frauds in Kansas City, Mo., was defeated by the Democrats in the upper house.

## Clay, Lucius DuBignon

(1897– ), U.S. army officer, was born April 23 in Marietta, Ga. He was graduated from the U.S. Military academy in 1918, and during the latter days of World War I was an instructor at an officers' training school. In March 1942, he was made a deputy chief of staff in the army service of supply and was promoted to the rank of a major general the following December. Two years later (Dec. 1944), he was transferred to the Office of War Mobilization and Reconversion as deputy director for war programs and administration.

As the war in Germany was nearing its end, President F. D. Roosevelt appointed Clay (March 29, 1945) as deputy to Gen. Dwight D. Eisenhower in charge of civil affairs in Germany; the following month he was made a lieutenant general. On Jan. 6, 1947, he was named commander of U.S. occupation forces in the European theatre and commander-in-chief of U.S. occupation forces in Germany as well as U.S. military governor in Germany. He was made a full general on March 27.

At first Clay was tactful and friendly in his relations with the Russians on the Allied Control Council for Germany, but irked by their propaganda barrage, he announced (Oct. 28) that the U.S. would launch a counter propaganda program in the reich. His domestic policy in his zone was based on the concept of giving the Germans more local self-government; he also said they would have to decide for themselves on the question of whether they should have a capitalist or socialist economy. However, his criticism of German ineptness in handling their food program was reported (Sept. 6) to have brought down on him a Washington admonition not to overemphasize their "bungling" lest congress cut requested funds for food exports to the reich.

## Clays.

Data on the production and consumption of the various types of clays used in the United States (except bentonite and fuller's earth, which are treated separately) are shown in the following table, in thousands of short tons.

| | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|
| Ball clay | 147.8 | 155.7 | 174.5 | 243.1 |
| Kaolin | 929.4 | 873.1 | 940.0 | 1,322.3 |
| Fire clay | 7,798.2 | 6,344.4 | 6,090.4 | 7,908.0 |
| Miscellaneous clays | 11,215.3 | 9,080.7 | 10,848.7 | 20,190.3 |
| Total | 20,090.7 | 16,453.8 | 18,053.6 | 29,663.8 |
| Sold as raw clay | 4,140.4 | 3,520.7 | 3,611.9 | 4,455.2 |
| Used by producer | 15,950.3 | 12,933.1 | 14,441.7 | 25,208.6 |

The effect of the revival in the building industry is seen especially in the miscellaneous clays, used for brick, sewer pipe and other building materials. (*See* also BENTONITE; FULLER'S EARTH.) (G. A. RO.)

## Clayton, William Lockhart

(1880– ), U.S. government official and cotton broker, formerly headed the firm of Anderson, Clayton and company in Houston, Tex. He joined the department of commerce in 1942 as an assistant secretary, and, in 1944, was appointed federal war surplus property administrator.

On Dec. 4, 1944, Pres. Franklin D. Roosevelt named Clayton assistant secretary of state, and on Aug. 1, 1946, he was appointed undersecretary of state for economic affairs, a newly created office.

In the summer of 1947, Clayton was the state department's representative at the Geneva, Switzerland, conference of the International Trade organization and at the European Conference for Economic Co-operation in Paris, which drew up the blueprint for the requirements of western Europe under the Marshall plan. At the latter parley, some foreign delegates objected to Clayton's insistence that the U.S. be permitted to oversee European expenditure of U.S. funds; although all conferees signed the 16-nation report on Sept. 22.

Clayton resigned his governmental office Oct. 15.

## Cleveland.

Sixth largest city in the United States, Cleveland, O., had a population of 878,336 by the federal census of 1940. Area 73.1 sq.mi.

Mayor Thomas A. Burke was re-elected chief executive of Cleveland Nov. 4, 1947, by the largest majority ever given a mayoralty candidate in the city. Burke, a Democrat, polled 168,412 votes to 85,990 received by his Republican opponent, former Safety Director Eliot Ness. Although there was a heavy turnover in the personnel of city council, the Democrats retained control of that body.

Nine judges were elected to municipal court, Chief Justice John J. Busher, and Judges Mary B. Grossman, Andrew M. Kovachy, Lillian M. Westropp, Joseph H. Silbert, Charles A. Vanik, James T. Cassidy, Frank D. Celebrezze and Edward F. Feighan. William J. Reichle was elected clerk of the court. Robert H. Jamison, Franklin A. Polk and Joseph M. Gallagher were elected to the Cleveland school board.

An amendment to the city charter which would put the community on daylight saving time from the last Sunday in April to the last Sunday in September was approved by the voters. Also approved were a 2.5-mill Cleveland tax levy, and a 6-mill Cleveland school levy. The county 1.3-mill welfare levy, requiring a 65% vote, hung in the balance as the first count showed it defeated by a small margin and a recount showed it winning by a single vote. A further recount was ordered and court action was threatened.

The city council voted a pay increase for all city employees. A $22,000,000 bond issue for the municipal traction system was approved by the council but the issue was not sold because of an unfavourable bond market. In its final meeting of 1947 the council enacted legislation to redistrict the city, making the population of the city's wards nearly equal for the first time in more than a quarter of a century. The city reduced its bonded debt $7,091,000 in the fiscal year ended June 30, 1947, bringing its gross bonded debt to $89,309,500, the lowest it had bee in 25 years.

Mrs. Norma F. Wulff was re-elected president of the Clev land board of education, and Mark C. Schinnerer was given th post of school superintendent.

The Lakefront airport for light planes was opened Aug. 2 At the close of 1947, employment in Cleveland stood at 586,00 close to a peacetime high. Of these, 215,000 were factory worl ers receiving an estimated $10,500,000 in pay each week. I 1947 there were 125 new manufacturing companies establishe in the city. Exports and imports of Cleveland companies totalle about $405,000,000 for the year. (P. BY.)

**Climate:** *see* METEOROLOGY.

## Clothing Industry.

The year 1947 was one of profitab activity for the clothing industry. Pric in the United States and Canada rose to record heights as pos war inflation filtered through the industry. In comparison wi the calendar year 1939, prices of woollen fabrics in the U.S. o June 30, 1947, had risen 116%; cottons were up 340%. Th retail price of men's and boys' tailored wool clothing rose 79 during that period while wages increased 74%. The price women's apparel and cotton garments in general rose highe percentage-wise, than did woollen clothing. While unit produ tion and sales held their own, as compared with 1946, doll volume jumped greatly because of increased prices.

Despite the fact that profits were substantial, manufacture faced many difficulties. Rising raw material costs made futu operations hazardous; in staple sections of the industry (such regular woollen clothing, shirts and workwear) that factor intr duced a speculative note. Shortages of tropical worsteds and ce tain cotton constructions hindered production. A congression investigation into alleged high clothing prices badgered the i dustry. Some special machines were still unobtainable. Th most ominous fact of all, to some producers, was that consum ers were asking for standard brands—which spelled trouble f newcomers in the industry. This was responsible for an i crease in the quality of merchandise which, although not up prewar standards, was substantial.

GERMAN manufactures of women's wear consisted largely of samples li these in 1947. Textiles were among the severest shortages in Germany duri the year

Machinery research advanced. Several new cutting room devices promised added production and ease of operation. New variations of the electrically driven cloth spreader appeared; these included machines with trailer attachments (for laying material face one way) and knit goods machines. Aluminum cutting tables, featuring adjustable legs for uneven floors, came in short sections of any desired width. A new cutting machine feature provided automatic sharpening of cutting knives to different edges. New lights, needle coolers, pullers and feeders facilitated sewing. A new feed-off-the-arm felling machine (for joining long seams such as shirt sideseams) featured a pedestal mount for easier operation. An effort was made to introduce finger-tip control, compressed-air pressing machines; but their acceptability in the men's clothing industry, where pressers were used to handling heavy foot pedal machines, was problematical. Minor tools became available; but some small items were still short and new left-handed shears were virtually nonexistent.

Style changes were simple but noticeable. Shoulders were wide and backs were cut very narrow so that, from the front, suits had a straight hanging, tubelike effect. Sleeves were made wider at the top. Winterwear featured cotton garments lined with alpaca pile, spun glass or similar insulation. There was no style change in shirts, summer sportswear, work clothing or rainwear. The large sales of war surplus garments continued without seriously affecting other retail sales.

Textile development accented quantity. The enormous demand for U.S. fabrics placed emphasis on efficiency of operation. New and unusual synthetic textiles were not satisfactory for clothing.

Labour did not lose ground in the clothing industry. The union and a manufacturers' central organization in the tailored woollen clothing trade set labour prices and conditions of employment. In the garment trades, however, negotiations were carried on individually by manufacturers and local union boards. A jurisdictional dispute between the Amalgamated and the International Ladies' Garment Workers' union in Rochester, N.Y., concerned the status of men's wear factories which were making ladies' tailored suits.

In other countries, the clothing industry suffered from a lack of dollar exchange which hindered the importation of efficient equipment. Manufacturers were especially interested in production techniques with emphasis on time and labour-saving devices and methods. Varied problems beset the industry in different lands. Australia experienced a manpower shortage, and many factories were operating at one-half prewar strength. Great Britain, to build foreign exchange, sacrificed woollens for dollars. South American countries, however, forged ahead with large modern installations. The reconstruction of world-wide clothing manufacturing facilities was a bright spot in the postwar era.

A great number of manufacturers and technicians went to the U.S. to observe factory methods and machines. A New York exhibit of garment textiles, machinery and equipment attracted 50,000 tradesmen, many from overseas.

Prices of consumer goods were high, and inventories were normal at the year's end. Great Britain prepared to regain its pre-eminent position as a style and production centre of men's wear; a new council was formed to gather technical data throughout the world and funnel it to London for analysis and distribution. A clearinghouse of such type would render invaluable aid to the industry. (S. L. S.)

## Coal.

Most of the gaps in production data for coal had been eliminated by the end of 1947, and Table I is more nearly complete than at any time since 1938. Also it is possible to show for the first time the approximate world totals for the years of World War II.

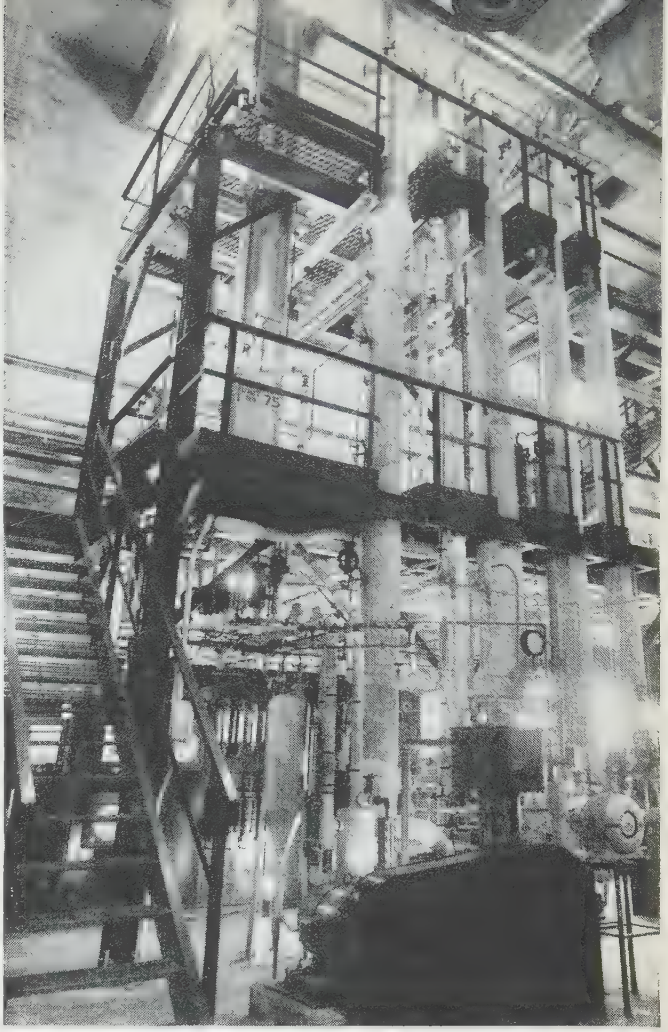
A PILOT PLANT, modelled on the one above, was under construction for the Pittsburgh Consolidated Coal Co. in 1947, as part of a revolutionary fuel project. If successful, coal was to be made into synthetic gas and liquid fuels at place of origin, rather than transported and burned as lump coal

Table I.—*Coal Production of the World, 1940–46*
(Millions of short tons—all grades)

| | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|---|
| Canada | 17.57 | 18.23 | 18.86 | 17.86 | 17.03 | 16.51 | 17.80 |
| United States | 512.25 | 570.51 | 643.02 | 650.82 | 683.27 | 630.93 | 592.51 |
| Belgium | 28.23 | 28.50 | 27.43 | 26.12 | 14.89 | 17.33 | 25.11 |
| Czechoslovakia | 46.62 | 46.91 | 49.55 | 56.49 | 54.31 | 30? | 37.00 |
| France | 45.18 | 48.34 | 48.37 | 46.77 | 29.30 | 38.65 | 54.56 |
| Germany | 511.52 | 527.57 | 547.42 | 500? | 450? | 180? | 275? |
| Hungary | 12.69 | 13.89 | 14.30 | 13.97 | 10? | 4.43 | 7.00 |
| Italy | 4.84 | 4.88 | 5.32 | 2.62 | ? | 1.46 | 2.95 |
| Netherlands | 13.61 | 14.94 | 13.90 | 14.20 | 9.43 | 6.85 | 9.71 |
| Poland | 84.96 | 84.15 | 92.56 | 100.70 | 96.33 | 30.17 | 52.13 |
| Spain | 10.40 | 10.53 | 11.42 | 11.69 | 12.88 | 13.16 | 13.31 |
| United Kingdom | 251.21 | 231.11 | 228.07 | 217.83 | 203.18 | 190.00 | 212.34 |
| U.S.S.R. | 181.44 | 175? | 100? | 145? | 130? | 160? | 176? |
| China | 6.31 | 6.61 | 6.23 | 6.61 | 6.02 | ? | ? |
| India | 28.66 | 33.00 | 32.97 | 28.66 | 29.26 | 32.67 | 32.79 |
| South Africa | 18.94 | 20.21 | 22.50 | 22.66 | 25.34 | 25.96 | 26.05 |
| Australia | 17.92 | 21.03 | 22.22 | 21.60 | 20.99 | 20.45 | 21.59 |
| Total | 1,983 | 2,044 | 2,076 | 2,080 | 2,000 | 1,650 | 1,750 |

Following the postwar slump, there was a marked improvement in coal output in most of the European countries, but far from enough to meet the demand for comfort, and hardly enough for bare existence in some areas. In few cases had outputs attained or even approached the prewar level of operations and so, with supplies inadequate for their own needs, surpluses for export were scarce.

**United States.**—The salient features of the coal industry of the United States are shown in Table II.

Coal output in the United States during 1946 declined to the lowest level since 1941, as a result of strikes in the industry during a quarter of the year. In 1947 the only major stoppage was in the "mourning period" in April that followed the Centralia,

Table II.—*Data of the Coal Industry in the United States, 1942–46*

(In thousands of short tons)

| | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|
| Production, total | 643,021 | 650,821 | 683,278 | 632,551 | 592,507 |
| Anthracite | 60,328 | 60,644 | 63,701 | 54,934 | 60,507 |
| Soft coals | 582,693 | 590,177 | 619,576 | 577,617 | 532,000 |
| Bituminous | 579,762 | 587,428 | 617,022 | 574,949 | ? |
| Lignite | 2,931 | 2,749 | 2,554 | 2,668 | ? |
| Anthracite | | | | | |
| Open-cut | 9,071 | 8,989 | 10,953 | 10,056 | 12,859 |
| Underground | 51,257 | 51,654 | 52,748 | 44,878 | 47,648 |
| Used locally | 6,418 | 6,608 | 6,061 | 6,391 | 6,398 |
| Shipped | 53,910 | 54,036 | 57,641 | 48,542 | 54,109 |
| Exports | 4,439 | 4,139 | 4,180 | 3,691 | 6,507 |
| Imports | 140 | 166 | 12 | 0.1 | 10 |
| Stocks | 798 | 329 | 445 | 130 | 251 |
| Consumption | 56,500 | 57,100 | 59,400 | 51,600 | 53,900 |
| Bituminous and lignite | | | | | |
| Open-cut | 67,203 | 79,685 | 100,898 | 109,987 | ? |
| Underground | 515,490 | 510,492 | 518,678 | 467,630 | ? |
| Used locally | 4,888 | 5,252 | 5,258 | 5,102 | ? |
| Shipped | 577,805 | 584,925 | 614,318 | 572,515 | ? |
| Exports | 22,943 | 25,836 | 26,032 | 27,947 | 41,192 |
| Imports | 498 | 758 | 634 | 467 | 435 |
| Stocks | 93,022 | 62,359 | 63,401 | 50,751 | 52,783 |
| Consumption | 542,214 | 596,164 | 591,830 | 559,567 | 500,352 |
| Railroads | 115,410 | 130,283 | 132,049 | 125,120 | 110,166 |
| Coke ovens | 100,850 | 102,460 | 105,296 | 95,349 | 82,999 |
| Power utilities | 65,636 | 76,403 | 78,887 | 71,603 | 68,739 |
| Steel mills | 10,434 | 11,238 | 10,734 | 10,084 | 8,603 |
| Cement mills | 7,570 | 5,851 | 3,789 | 4,215 | 6,969 |
| Other industrial | 137,564 | 147,165 | 136,169 | 131,391 | 122,290 |
| Retail dealers | 104,750 | 122,764 | 124,906 | 121,805 | 100,586 |

Ill., mine disaster and the temporary government closure of more than 500 mines for safety reasons.

Up to August there was a pronounced downward trend in the 1947 weekly bituminous production figures; in the later months production improved, but failed to come back to the January average. Through the week ending Dec. 13, the bituminous output totalled 590,455,000 short tons, an increase of 17% over the same period of 1946. The final total for the year was estimated to be 618,800,000 tons, or somewhat better than the 1944 peak.

Table III.—*United States Production of Coal, by States, 1940–46*

(Millions of short tons)

| | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|---|
| Alabama | 15.3 | 15.5 | 19.3 | 17.2 | 18.8 | 18.2 | 15.8 |
| Colorado | 6.6 | 6.9 | 8.1 | 8.3 | 8.2 | 7.6 | 5.9 |
| Illinois | 50.6 | 54.7 | 65.1 | 72.6 | 76.8 | 73.0 | 62.6 |
| Indiana | 18.9 | 22.5 | 25.4 | 25.1 | 28.0 | 25.2 | 21.8 |
| Kentucky | 49.1 | 53.7 | 62.2 | 63.2 | 71.4 | 69.6 | 66.8 |
| Ohio | 22.8 | 29.3 | 32.8 | 32.3 | 33.9 | 32.7 | 32.8 |
| Pennsylvania | 116.6 | 130.2 | 144.1 | 141.0 | 146.1 | 133.0 | 125.2 |
| Tennessee | 6.0 | 7.0 | 8.2 | 7.2 | 7.3 | 6.3 | 6.2 |
| Utah | 3.6 | 4.1 | 5.5 | 6.7 | 7.1 | 6.7 | 6.0 |
| Virginia | 15.3 | 18.4 | 20.1 | 20.3 | 19.5 | 17.2 | 16.3 |
| West Virginia | 126.4 | 140.3 | 155.9 | 158.8 | 164.7 | 152.0 | 142.1 |
| Wyoming | 5.8 | 6.6 | 8.1 | 9.2 | 9.5 | 9.8 | 7.8 |
| Others | 23.7 | 24.8 | 27.9 | 28.3 | 28.3 | 26.2 | 22.9 |
| Total Bituminous | 460.8 | 514.1 | 582.7 | 590.2 | 619.6 | 577.6 | 532.0 |
| Anthracite | 51.5 | 56.4 | 60.3 | 60.6 | 63.7 | 54.9 | 60.5 |
| Grand Total | 512.3 | 570.5 | 643.0 | 650.8 | 683.3 | 632.6 | 592.5 |

Anthracite operations were interrupted only to a minor degree in 1947, but there was decided lowering of the production rate, extending over practically the whole year, and the output suffered accordingly. Through the week ending Dec. 13, the anthracite output totalled 54,516,000 short tons, a drop of 6% from the same period of 1946. The final total for the year was estimated at 57,000,000 tons.

The total output, bituminous plus anthracite, through Dec. 13, 1947, was 644,971,000 tons, and the final total for the year was estimated to be 675,800,000 tons, just under the 1944 peak.

**Great Britain.**—On Jan. 1, 1947, the National Coal board, under the chairmanship of Lord Hyndley, took over 1,647 coal mines, 692,000 mineworkers and 20,000 officials, 1,000,000 ac. of land, 100,000 houses, and a host of railway wagons, ships, loading depots, brickworks and ancillary services. Colliery owners would receive £164,600,000 indemnity, in addition to the £66,450,000 paid when all unworked coal was taken over by the Coal commission under the Coal act of 1938. The National Coal board set up eight divisional boards to administer the coal fields of Great Britain and under them 49 area managements in charge of groups of pits. The latter became the board's "units of management" in place of the former 850 colliery companies. Colliery managers retained their statutory powers and responsibiliti under the Coal Mines (Regulations) act of 1911, and the Mine inspectorate continued to function independently. The interes of the coal consumers at home were protected by two Co Consumers' councils (industrial and domestic).

Scarcely had the new organization been set up when the fu crisis of February and March hit the country. In averting th worst consequences of this crisis the coal-mining industr played a notable part, practically all collieries remaining a work in spite of terrible weather and many miners workin extra hours, including Sundays, to help the country through.

This was only the first of the serious setbacks. On Aug. 1 there was the tragic explosion at Whitehaven, Cumberland, i which 104 men lost their lives, and this was followed by othe disasters in Durham and Yorkshire.

From Aug. 11 to Sept. 15 came the unofficial Grimethorp strike, which, starting as a dispute over an increased daily tas under the five-day week agreement, spread throughout Sout Yorkshire and cost the country nearly 600,000 long tons of coa

Throughout the year, the National Coal board pressed on wit short-term measures to increase coal production and also wit steps designed to improve the lot of the miner and to enlist hi good will, including: five-day week (with attendance bonus) payment for six statutory holidays a year; wages increas mainly for the lower-paid miner; doubling of the welfare lev of 1*d*. per ton; relief of the miners from maintenance charge for pithead baths; comprehensive schemes for training and education; establishment of a mines medical service; reorganization of the conciliation procedure; introduction of consultativ procedure at all levels down to and including the pit.

The five-day week agreement and other measures resulted i an increase in costs of production necessitating an increase i the pithead price of coal by 4*s*. a ton, bringing the total ir crease to 23*s*.5*d*. per ton above the 1939 average, but this represented a percentage increase still well below that of other ra material prices during the same period.

After an initial spurt in production it was found impossibl to produce sufficient coal for the nation's needs in five days week, even with the help of 710,000 tons imported from th United States and Poland; an agreement was therefore reache between the National Coal board and the National Union c Mineworkers by which the miners volunteered to work longe hours, on overtime rates, during the winter months.

This had immediate results and towards the end of the yea the weekly output reached and stayed at more than 4,000,00 tons, bringing within sight the achievement of the 200,000,00 long ton target (deep-mined and opencast) for the year, and als making it possible to resume, on a small scale, the export c coal as bunkers and to coaling-stations.

Improved production in the year was assisted by smoot working of machinery for the rapid settlement of pit dispute and by the establishment of consultative committees, representing the management, the deputies and the men, at nationa divisional and colliery level. Though accused of a tendenc toward overcentralization, the board could point at the end c the year to an increased annual production of 6,500,000 tons to an average output per manshift 7% higher than 1946; to a absentee rate in December 35% lower than the year before; t the increase in the industry's manpower of 26,000, compare with a net loss in 1946 of 3,000 and in 1945 of 17,000; and cor siderable progress in the planning of new sinkings, the modern zation of suitable long-life pits, and the development of shallo drift mines.

Opencast coal continued to be worked by the ministry of fu and power and some 197,000 tons per week were produce from this source during the year. (*See* also FUEL BRIQUETTES.

RELATIVES of 117 trapped miners waiting for news at the William mine in Whitehaven on the northwest coast of England after an explosion in undersea mine tunnels on Aug. 15, 1947. Only 13 colliers were rescued

**Canada.**—Coal production declined from 17,797,747 short tons in 1946 to 14,028,113 tons through Nov. 1947, a drop of 14% from the same period of 1946. To offset the decreased output, imports were increased to 21,538,532 tons through September, 17% over the same period of 1946.

**India.**—Production was proceeding at a uniform rate, with 32,790,000 short tons in 1946 and 18,286,000 tons through July 1947.

**Japan.**—Coal production in Japan rose from 1,447,000 short tons in Jan. 1946 to 2,421,000 tons in December, and 18,762,000 tons in the first eight months of 1947.

**South Africa.**—Production was 26,053,000 short tons in 1946 and 16,809,000 tons in the first eight months of 1947.

**Australia.**—Coal output declined from 21,589,000 short tons in 1946 to 10,322,000 tons through Aug. 1947.

**European Countries.**—In order to show the progress in the postwar revival of coal production in Europe, there are reproduced in Table IV the monthly production figures as reported by the Statistical office of the United Nations.

Table IV.—*Data of Coal Production in Europe*

(Thousands of short tons)

| | Monthly average in | | Monthly output in | | | Months reptd. to | Total tonnage reptd. | Monthly average 1947 |
|---|---|---|---|---|---|---|---|---|
| | 1938 | 1945 | Jan. 1946 | Jan. 1947 | latest 1947 | | | |
| Belgium . . . . . | 2,717 | 1,240* | 2,143 | 2,366 | 2,211 | Sept. | 20,138 | 2,238 |
| Czechoslovakia . . | 2,928 | 2,466 | 3,204 | 3,560 | 3,795 | Oct. | 35,367 | 3,537 |
| France . . . . . . | 4,368 | 2,443 | 4,372 | 5,074 | 5,098 | Oct. | 45,617 | 4,562 |
| Germany . . . . . | 32,508 | 13,685 | 20,307 | 21,908 | 23,476 | Sept. | 208,872 | 23,208 |
| Hungary . . . . . | 859 | 442 | 546 | 783 | 821 | Sept. | 6,888 | 766 |
| Netherlands . . . . | 1,254 | 489 | 711 | 969 | 1,062 | Oct. | 9,784 | 978 |
| Poland . . . . . . | 3,500 | 2,315 | 3,968 | 5,013 | 5,916 | Sept. | 47,100 | 5,233 |
| Spain . . . . . . | 519 | 977 | 991 | 935 | 960 | Apr. | 3,738 | 934 |
| United Kingdom . . | 21,127 | 17,015 | 15,277 | 16,607 | 18,014 | Sept. | 183,401 | 18,340 |

*1944.

The first two columns of Table IV show the average monthly output reported in 1938, and in the lowest year, usually 1945. Columns three, four and five show the gradual recovery of output during 1946 and 1947. Column six shows the latest month in 1947 for which output was reported, while column seven gives the 1947 output up to and including that month, and column eight gives the monthly average during these months of 1947, for comparison with the averages during preceding years.

(G. A. Ro.; N. F. Ne.; J. A. S. R.)

## Coast and Geodetic Survey, U.S.

During the year 1947 activities of the coast and geodetic survey were devoted especially to carrying on surveys and investigations in coastal areas of commercial importance and in the interior where planning for development of natural resources was contemplated. It is the function of this bureau to furnish basic engineering and scientific data essential in all surveying and mapping projects and for large scale public works and construction programs. Triangulation and precise levelling were performed along the tributaries and in major river valleys for purposes of developing multiple water uses. Growing appreciation of the economic value of tying local surveys to the national network of geodetic control was indicated.

A new program of systematic tidal observations in the western Pacific and in the areas along the continental and Alaskan coasts provided original data for the prediction of ocean tides.

Magnetic projects were undertaken in the arctic and antarctic as part of navy expeditions to those regions. In the study of earthquakes, 52 strong-motion seismographs were maintained in the western part of the United States and in seven countries of the western hemisphere subject to frequent earthquakes. Six moderately strong earthquakes were recorded and the records were distributed among co-operating agencies for further study.

There was an increase in the sale of charts to the mariner and the aviator. These charts provide information for the safe navigation of surface ships and aeroplanes and are one of the major products of the bureau. A series of radio facility charts covering the entire United States was issued to provide the latest information for air navigation along the national airways. The charts were revised and reissued at frequent intervals to show existing information and were widely used by the military services and by commercial and private aviators.

Nineteen survey vessels were operated in the coastal waters of the United States and Alaska. The ships conducted hydrographic surveys and oceanographic observations for the production of navigation charts for the mariner. The use of shoran was continued with good results during the year. The equipment was used to fix the positions of soundings taken in the waters of the western Aleutian Islands and off the Atlantic coast. The coast and geodetic survey electronic position indicator designed for installation on a low-lying shoreline was successfully used for extending hydrographic surveys well offshore in the Gulf of Mexico.

To compile topographic features of coastal areas, aerial photographs were obtained and photogrammetric surveys made of nearly 2,000 mi. of Alaskan coastline; this included the shores of Bristol bay, the Aleutians and the Arctic ocean.

Under authorization of congress, the bureau participated in the program for Philippine rehabilitation by providing for the resumption of the coastal survey work in the Philippines interrupted by the war. The program included the training of Philippine citizens in the technical operations of this work both in the Philippines and in the United States. Co-operative projects for exchange of surveying and charting techniques were continued with all of the American republics participating. (*See* also CARTOGRAPHY; GEOGRAPHY; OCEANOGRAPHY.) (L. O. C.)

## Coast Guard, U.S.

Coast guard activities during 1947 were highlighted by the dramatic rescue in mid-Atlantic of 62 passengers and 7 crew members of the transatlantic flying boat "Bermuda Sky Queen." The plane had left Foynes, Ireland, for Gander, Newfoundland, at 3:40 P.M. on Oct. 13. En route she passed over the coast guard cutter "Bibb," stationed 800 mi. east of Argentia, Newfoundland, as an ocean weather observation vessel. After the plane had flown another 100 mi. westward, and beyond the point of no return, Capt. Charles Martin of the "Sky Queen" found that violent headwinds had eaten so deeply into his fuel supply that he could not risk going on to Gander. He decided to double back to the "Bibb" and about 7 A.M. on Oct. 14, the cutter received a report that the "Sky Queen" was returning to weather station "Charlie" for a landing. A short time later the plane was sighted and soon made a perfect landing on a sea where the waves were running as high as 35 ft.

The moderating weather which had been forecast would have reduced the hazard of rescue, but by 3 P.M. the weather had shown no signs of moderating and the plane was beginning to leak. Transfer of personnel was begun, therefore, despite the high seas that were still running. Three merchant seamen aboard the "Sky Queen" volunteered to make the first trip in a small rubber life raft, and they were picked up successfully by the cutter. A larger raft completed three more trips safely
bringing survivors to the "Bibb." On the fourth trip, with 1
persons aboard, the raft broke adrift. A motor surfboat wa
sent to the raft's aid and both were swamped. As the surfboa
began to break up, the "Bibb" moved in with seamen over th
side on landing nets. By miracles of courage and effort all thos
on the surfboat and in the water were rescued. By this tim
darkness had fallen and operations were suspended with 22 pe
sons still on the plane. Early next morning the "Bibb" radioe
"all passengers and crew safely aboard" and four days later sh
steamed proudly into Boston harbour, a broom lashed to he
masthead signifying a "clean sweep" in the rescue operation.

Ocean weather stations, such as the "Bibb" was patrolling, a
mid-ocean areas 10 mi. square, station "Charlie" being locate
at 52° 45′ N., 35° 30′ W. This and another station at 62° N
33° W. were the only two U.S. weather stations operating i
1947 in the North Atlantic. A third weather station was mai
tained in the Pacific halfway between San Francisco and Hon
lulu. As a member state of the International Civil Aviatio
organization the United States had agreed to man seven
these stations, and one jointly with Canada as soon as appr
priation would permit. The stations are a joint weather bureau
coast guard operation, the coast guard providing the ships an
communication facilities and the weather bureau providing th
observational personnel and special equipment required. The
obtain surface observations every 3 hr., winds aloft observation
every 6 hr. and transmit these to the weather bureau at Wash
ington, D.C., together with twice daily radiosonde observation
Transocean aviation interests make wide use of these report
basing their flights on them. The weather ships also serve as
radio beacon for the high-flying air liners. As they pass ove
head, often unseen in the overcast, they are picked up on th
weather ship's radar screen; radio communication is establishe
and, if they request it, they are given a radar fix as to the
actual course and speed as plotted aboard the coast guar
cutter. When all 13 weather stations, United States and foreig
called for by international convention, are fully manned an
equipped, no aircraft flying the Atlantic would ever be mo
than one and one-half hours' flying time from a source
rescue, and it would be possible to run a constant plot on a
transatlantic planes during the entire time they were over wate

The "Sky Queen" rescue was one of a number of less-specta
ular coast guard search and rescue activities which, during th
fiscal year 1947, resulted in 5,755 lives being saved or perso
rescued from peril. Brought into action by about 1,000 calls f
assistance received each month in the eastern area of the U.
alone, 180 lifeboat stations, 10 air stations, with 110 aircraf
and more than 2,000 vessels of all sizes, were able to carry o
instant and systematic search and rescue procedure. In Marc
the entire crew of a collier, wrecked off Cape Elizabeth, Me
was brought ashore by breeches buoy from a coast guard st
tion. In October, coast guard vessels carried hundreds trappe
by a forest fire at Bar Harbor, Me., to safety on the mai
land. In November, coast guard planes dropped food and su
vival gear to 41 survivors of a vessel shipwrecked in Belle Is
straits. In December, two cutters went to the assistance of th
"S.S. Michael" aground off Cape Charles, Va. The vessel, aflo
later and under her own power, was escorted to Hampt
Roads, Va. There were 1,074 flood rescues on the Mississip
and tributaries. Twenty-six coast guard radio stations, whic
supplemented land telephone lines and submarine cables ope
ating along the coast, formed a constantly alerted system
communications, connecting land, sea and air units instantl
effective in every maritime emergency.

During May and June, the coast guard cutter "Mendot
conducted the 1947 International Ice patrol. Ever watchful f
icebergs which drift into the transatlantic shipping lanes in th

Grand Banks area, the cutter detected only 37 icebergs and growlers in what was one of the "leanest" years of ice occurrence on record.

The ice-breaking cutter "Mackinaw," cruising more than 9,000 mi. on the Great Lakes, helped free 641 lake carriers from the ice during the late winter and early spring. Thousands of tons of iron ore thus reached their destination at eastern blast furnaces earlier in the open season, augmenting thinning stock piles. Meanwhile, the icebreaker "Northwind" led a navy scientific expedition through south polar ice to Antarctica.

Coast guard emergency communications trucks were in contact with outside points 20 min. after the explosion at Texas City, Tex. Later other units engaged in fire-fighting and assistance work during the disaster. After a coast guard investigation, a special interagency committee appointed by the secretary of the treasury recommended steps to be taken for the handling of ammonium nitrate with greater safety.

In the interests of greater maritime safety the coast guard maintained 36,465 aids to navigation. These included lightships, lighthouses, buoys, daymarks, fog signals and radio beacons. Thirty-seven Loran stations located at widely separated points from Labrador, around the coasts of the United States and into the Pacific as far as Japan, assisted surface and air craft to determine their longitude and latitude at all times and under all weather conditions through a pulse radio transmission system. At the same time 14 Racon, or radar beacons, gave distance and bearings to aeroplanes or ships within 120 mi.

During 1947 the coast guard operated 307 cutters, ranging in length from 65 ft. to 327 ft. These included icebreakers, patrol craft, ocean-going tugs, cargo ships, buoy tenders, cable layers, harbour tugs and patrol boats.

In addition it had 1,740 motorboats in service ranging in length from 10 ft. to 65 ft.

Among its 18,714 military personnel were 848 regular commissioned officers, 775 temporary service officers, 572 regular reserve officers, 227 cadets, 532 chief warrant and warrant officers and 15,760 enlisted men.

There were 4,535 civilian employees.

**U.S. Coast Guard Academy.**—The U.S. Coast Guard academy at New London, Conn., founded in 1876, is an institution of higher learning for the training of commissioned officers for the coast guard. Its present home, overlooking the Thames river, was constructed in 1932, with additions made just prior to World War II. The red brick, Georgian colonial buildings centre around the administrative building, Hamilton hall, named after Alexander Hamilton, first secretary of the treasury and founder of the coast guard in 1790.

At the end of 1947 there were 332 cadets. Entrance is restricted to unmarried men between 17 and 22 years of age, and appointments are obtained through competitive examinations. While emphasis is placed on a practical program in which engineering, navigation, seamanship, tactical signal drills and damage control drills are featured in a 21-week program, utilizing three training vessels, standard college courses in mathematics, languages and physical education complete a well-rounded curriculum. The academy confers upon its graduates the bachelor of science degree in engineering and a commission as ensign in the U.S. coast guard. About 100 cadets are graduated each year. (J. F. Fy.)

U.S. COASTGUARDSMEN and volunteers using a breeches buoy to bring a crew member to safety off Cape Elizabeth, Me., after a storm wrecked his vessel in March 1947

## Cobalt.

In the years prior to World War II Northern Rhodesia was the major producer of cobalt, but in late years about half of the world output has come from Belgian Congo. While the United States is the third largest producer, its output is limited to a few hundred tons a year. War demand brought the world total to about 6,600 short tons in 1945, an increase of about 50% over the normal output.

The consumption rate for cobalt in the United States during 1947 was about 2,000 to 2,200 short tons annually, about one-third of which went into the production of magnet steels. Other prominent uses were in stellite and related alloys, ceramic frits and enamels, and salts and driers. (G. A. Ro.)

**Cochin-China:** *see* French Overseas Territories.

## Cocoa

(Cacao). The supply of cocoa for the year 1947–48 was estimated at about 643,000 tons by the International Emergency Food council in Oct. 1947. The U.S. cocoa market was thrown into disorder when OPA control ended with the price at 14.95 cents per pound. Prices advanced to the unprecedented peak of 49 cents per pound—about 900% above the 1939 price. This advance was said to be due to speculative buying, when United States supplies were short, from the West Africa crop, controlled by the British Cocoa Control board, as well as from Brazil. Allocations of 429,300 tons by the International Emergency Food council in Oct. 1947 included 184,000 tons to the United States.

The United States remained the world's largest consumer of cocoa, with Britain second and France third. During the year ending Oct. 1, 1947, the U.S. received a total of about 270,000 tons. The West Africa production of cocoa for 1947–48 was reported as about 10% higher than a year earlier. (J. C. Ms.)

## Coconuts

(Copra). Imports of products of the coconut, copra or nut meat and oil, into the United States increased rapidly during the 1946–47 fiscal year. A total of 1,304,000,000 lb. of copra was imported to July 1, 1947, compared with 314,152,000 lb. in 1946; 16,336,000 lb. of coconut oil were imported, compared with 10,181,000 lb. in 1946. An allocation equivalent to about 966,000,000 lb. of copra was made to the United States by the International Emergency Food council for the year 1947–48.

Prices of copra advanced sharply in 1947 to nearly $200 per ton—more than double the record of 1920, when world production was beginning to expand. Coconut oil advanced in a similar manner, from about 7 cents per pound in 1940 to 20 cents in 1947. Production was rapidly increasing in the Philippines and Netherlands Indies. (J. C. Ms.)

**Coffee.** The supply of coffee in the United States in 1947 was ample to meet all demands, but prices advanced slightly with the general price rise. Imports to July 1947 were slightly less than a year earlier—2,471,633,000 lb. compared with 2,860,487,000 lb. in the year ending July 1946.

World coffee production in 1947–48 was expected to reach 40,086,000 bags, compared with 37,500,000 bags in 1946–47. About 31,000,000 bags of the new crop were expected to be exportable, and Brazil had at least 3,000,000 bags of old coffee on hand.

The Brazil crop was estimated at about 16,600,000 bags, largest since 1939.

Production in Colombia was estimated at 6,500,000 bags, of which about 6,000,000 (50% above prewar) would be available for export. Brazil and Colombia together produced two-thirds of the world's total crop; very little coffee was exported from India or the Netherlands Indies.

World coffee consumption was expected to be about 28,502,000 bags in 1947–48.

Coffee consumption in the United States increased during World War II but later declined; stocks were large throughout 1947. Per capita consumption was estimated at 18 lb. green basis compared with 19.3 lb. in 1946. In Europe only 60% as much coffee was used during the war as previously, and European countries were buying as little as possible in 1947. Colonial nations bought all they could to acquire foreign exchange. Prices declined in all markets but were still high enough to encourage production in Brazil. (*See* also BRAZIL.)

(J. C. Ms.)

**Coinage.** The three United States coinage mints located at Philadelphia, Pa., San Francisco, Calif., and Denver, Colo., manufactured a total of 1,174,017,781 domestic and foreign coins during the calendar year 1947.

United States coin production was valued at $48,043,575.50 and consisted of the following denominations:

| Denomination | Pieces |
|---|---|
| Half dollars: | |
| Regular issue | 7,994,600 |
| Booker T. Washington commemorative | 300,051 |
| Quarter dollars | 43,426,400 |
| Dimes | 203,195,000 |
| Five-cent pieces | 157,542,000 |
| One-cent pieces | 484,305,000 |
| Total domestic | 896,763,051 |

The composition of half dollars, quarter dollars and dimes was 90% silver and 10% copper; five-cent coins, 75% nickel and 25% copper; and one-cent coins, 95% copper and 5% zinc and tin in conformity with the United States coinage laws.

Foreign coinage during 1947 totalled 277,254,730 pieces of various denominations and alloys for nine governments, namely—Colombia, Dominican Republic, Ecuador, El Salvador, Ethiopia, Panamá, Philippines, Saudi Arabia and Venezuela.

In addition to the coinage mints, four other mint service institutions were in operation in 1947—assay offices at New Yor city and Seattle, Wash.; gold bullion depository at Fort Kno Ky.; and silver bullion depository at West Point, N.Y. Th entire mint service is administered by the director of the min with administrative offices in Washington, D.C.

The United States government gold and silver holdings i custody of the several mint service institutions on Dec. 31, 194 were as follows: Gold bullion, 650,107,101 fine troy ounce which, with a value of $35 a fine ounce, totalled $22,753,748 547; silver bullion amounted to 1,682,613,624 fine troy ounce The mint institutions were in custody of additional values cor sisting of silver and minor coins running into several millio of dollars.

At the Philadelphia mint many medals and decorations we produced in 1947 for the armed forces, consisting chiefly c World War II victory medals, American defense medals an others. Special gold medals awarded by the congress were mad for General George C. Marshall, General John J. Pershing, th late General William Mitchell and Admiral Ernest J. King. (*Se* also DECORATIONS, MEDALS AND BADGES—MILITARY, NAVAL AN CIVIL.) (N. T. R.)

**Coke.** In Table I below are presented the coke outputs of th major producing countries and the estimated world t tal, so far as data were available for late years.

Table I.—*World Production of Coke*

(Thousands of short tons)

| | 1942 | 1943 | 1944 | 1945 | 194 |
|---|---|---|---|---|---|
| Australia | 1,838 | 1,772 | 1,562 | 1,188 | ? |
| Belgium | 4,858 | 4,862 | 2,257 | 2,071 | 4,2 |
| Canada | 2,796 | 2,987 | 3,546 | 3,316 | 2,8 |
| Czechoslovakia | 4,287 | 4,497 | 4,991 | ? | ? |
| France | 5,521 | 5,500 | 3,206 | 2,762 | 5,4 |
| Germany | 56,590 | 58,159 | 58,863 | ? | ? |
| Great Britain | 16,688 | 16,186 | 15,771 | 15,664 | 15,6 |
| India | 2,075 | 1,740 | 1,550 | ? | ? |
| Italy | 1,839 | 2,200 | ? | ? | ? |
| Japan | 6,440 | 5,292 | 4,144 | ? | ? |
| Netherlands | 2,135 | 2,095 | ? | ? | ? |
| U.S.S.R. | 6,708 | 8,599 | 10,929 | 14,300 | ? |
| United States | 70,569 | 71,676 | 74,037 | 67,308 | 58,4 |
| Total | 188,213 | 191,928 | 191,179 | 126,708 | 129,4 |

**United States.**—Salient data on the production and co sumption of by-product and beehive coke in the United Stat are shown in the following table.

Table II.—Coke *Production in U.S., 1941–46*

(In thousands of short tons)

| | 1941 | 1942 | 1943 | 1944 | 1945 | 194 |
|---|---|---|---|---|---|---|
| Production | 65,187 | 70,569 | 71,676 | 74,038 | 67,308 | 58,4 |
| By-product | 58,482 | 62,295 | 63,743 | 67,065 | 62,094 | 53,9 |
| Beehive | 6,704 | 8,274 | 7,933 | 6,973 | 5,214 | 4,5 |
| Breeze made | 4,555 | 4,752 | 4,941 | 5,116 | 4,721 | 4,3 |
| Coal charged | 93,138 | 100,850 | 102,460 | 105,296 | 95,672 | 83,5 |
| Consumption, total | 64,944 | 70,107 | 71,407 | 72,971 | 66,074 | 57,3 |
| By iron furnaces | 49,470 | 54,695 | 56,701 | 57,072 | 50,653 | 43,0 |

Strikes in the steel and coal industries during the first half 1946 cut the coke output to far below its normal level.

As a result, coke output for 1946 was 13% less than that 1945 and 22% less than the peak of 1944.

There was a marked improvement in production in 1947, wi a total production of 60,250,276 short tons of by-product a beehive coke in the first 10 months of the year, equivalent a rate of 73,200,000 tons for the year. This 10-months' tot included 54,840,633 tons of by-product coke and 5,410,043 to of beehive coke.

In addition to the oven coke already reported, there were 1946 the following outputs of other varieties of coke: 131,1 tons of low temperature coke accompanied by 14,490 tons breeze, and 753,335 tons of gashouse coke accompanied b 96,819 tons of breeze.

The total coke output of all kinds in 1946 amounted to 5 382,377 tons, accompanied by 4,419,576 tons of breeze.

**Canada.**—The Canadian coke production decreased fro

3,862,000 short tons in 1945 to 3,314,000 in 1946. Conditions improved somewhat in 1947 with a total of 2,600,000 short tons in the first nine months, against 2,402,000 tons in the same period of 1946. Imports play a large part in the Canadian coke industry, since 70–80% of the coal used is imported, and in addition coke is imported to the extent of about one-third of the local production. (G. A. Ro.)

## Cold, Common.

Large-scale attacks on the problem of the common cold were under way in 1947 at the National Institute for Medical Research in England, the National Institute of Health at Bethesda, Md., and Western Reserve Medical school in Cleveland, O.

The chief problems were to classify the apparent group of similar disease entities which compose what is called the common cold and to isolate the cause or causes—presumably viruses. According to current views in 1947, several distinct diseases give rise to symptoms of the common cold, but they are clinically indistinguishable, unless their special characteristics emerge when many patients are seen at once in an epidemic. These diseases were classified tentatively thus: (1) the common cold; (2) exudative pharyngitis; (3) a mild epidemic disease of which the viral pneumonias are the severe forms and (4) true influenza, the cause of which is now known. Another new entity was delineated and called acute respiratory disease. Once the various entities were accurately grouped and their causes determined, further advances might be expected in methods for their prevention and treatment.

During 1947 the customs of prevention and treatment were critically reviewed. It was obvious that much nonsense still prevailed, chiefly because of habit, tradition and the desire "to do something." So long as no injury was done and so long as the normal progress of recovery was not impeded, these procedures were harmless, but many involved needless expense. Nothing in a practical way could be done to prevent these diseases, except influenza, for which a vaccine had become available. Studies showed that colds are fewer among groups of persons living in atmosphere into which certain aerosols are sprayed or in which the air is irradiated with ultra-violet light, but neither of these procedures was available for practical use. The same could be said for the use of gamma globulin when injected into the muscles.

Many measures used for the treatment of colds have no beneficial effects except perhaps psychic ones. The use of cough syrups, antiseptic sprays or gargles, poultices, foot baths, expectorants, vitamins, cathartics, diuretics, agents to cause sweating or to reduce fever, and ultra-violet light have no value in shortening colds or in curing them. Some of these measures may be harmful.

In 1947 the measures considered most comforting during colds were rest, warmth, a normal amount of food and drink and regular elimination. Warm drinks and small amounts of alcohol provide relaxation, aspirin is helpful for aching, and lozenges or codeine relieve severe coughing. Nasal congestion and running nose are relieved by sprays of vasoconstrictive agents, but they should be used as seldom as possible and only to the point of opening the airways. Inhalation of steam containing camphor or other volatile substances gives similar relief.

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(H. A. Rn.)

**Colleges and Universities:** *see* UNIVERSITIES AND COLLEGES.

## Colombia.

A republic situated in northwestern South America adjoining the Isthmus of Panama. It is the only South American country with both Caribbean and Pacific coast lines. Area: 439,714 sq.mi.; pop. (1946 est.): 10,342,519. Approximately 68% of the population is classified as mixed blood, 20% as white, 7% as Indian and 5% as Negro. Most of the inhabitants live in the highlands and mountain valleys of the interior. The capital is Bogotá (pop. in 1945, 443,520). Other principal cities are Barranquilla (206,630), Bucaramanga (66,220), Cali (135,610), Cartagena (101,520), Cúcuta (72,440), Ibagué (78,970), Manizales (109,820), Medellín (219,790), Neiva (38,270), Pasto (60,070), Popayán (34,550), Santa Marta (41,310) and Tunja (25,380). Language: Spanish; religion: predominantly Roman Catholic. President in 1947: Mariano Ospina Pérez.

**History.**—The year 1947 brought renewed grief to the Conservative administration as congressional, state and municipal elections returned majorities for the Liberal party. The economic and social situation was marked by stringent new trade controls to offset a critical shortage of foreign exchange credits and by vigorous protests from labour against the rising cost of living.

In the congressional elections of March 16 (in which senators were elected by direct vote for the first time), the Liberals were divided between the leadership of the extremist Jorge Eliécer Gaitán, unsuccessful presidential candidate in 1946, and the moderate Eduardo Santos, a former chief executive. The balloting, however, gave them control of both houses of congress for the second consecutive year. Receiving a total of 801,341 votes, the Liberals won 35 seats in the senate and 74 in the chamber while the Conservatives, polling 650,840 votes, elected 28 senators and 27 deputies.

The cabinet resigned after the elections to allow a more representative membership, and Pres. Ospina Pérez's new appointments included an equal number of ministers from each party. When the new congress convened on July 21, the Liberal majority elected Dr. Gaitán president of the senate and César Ordóñez Quintero, another extremist, president of the lower house.

On Oct. 5, municipal elections throughout the country gave the Liberals a majority in 472 city councils and the Conservatives control of 307, but the Liberal victory was by the narrow margin of 13% of the 1,309,534 votes cast, and 135 councils formerly dominated by the Liberals passed over to the administration's party.

On Oct. 26, Dr. Gaitán was formally endorsed as the 1950 presidential candidate of the Liberal party. In November, the territory of Choco was admitted as the 15th state of the nation.

In the United Nations security council, Colombia's representative formally denied that a Hispanic-American bloc was being formed to control the international balance of power. An agreement was signed in March with the intergovernmental committee on refugees to admit an unspecified number of European immigrants into Colombia. At Washington, D.C., in March, former President Alberto Lleras Camargo was elected director general of the Pan American union, and at Bogotá preparations were made for the Inter-American conference scheduled to meet there in 1948 to discuss military, social and economic matters not considered at the 1947 conference in Rio de Janeiro.

A formal suggestion by the United States that the special privileges of the Grand Colombia fleet constituted discrimination against U.S. shipping aroused popular demonstrations in September which damaged the U.S. embassy at Bogotá. The administration apologized for the incident and offered indemnities, but the chamber of deputies resolved to insist on maintaining Colombia's navigation system.

A precarious economic situation arising out of an unfavourable balance of trade was reflected in the rapidly rising cost of living in Bogotá. The general retail price index (100 in Feb. 1937) was 231 in January and 252.2 in July. As a protest, organized labour struck for higher wages in several localities, and on May 13, the Colombian Federation of Workers declared a 24-hr. general strike. This demonstration only partially halted normal business activity, and the federation was temporarily suspended for its efforts. The government did create a new price-control agency, with powers to ration, and tried with little success to alleviate the dollar shortage by establishing monthly quotas and priority lists for imports. In its long-range drive for centralized control of key industries, the government created national boards in 1947 for the administration of petroleum, water utilities, telecommunications and aviation.

Increased control over civil aeronautics followed a series of five commercial air line disasters during the first three months of the year, the most serious costing 53 lives when a four-engine air liner crashed into the peak of Mt. El Tablazo on Feb. 15. Other disasters during the year included three earthquakes which shook the city of Pasto in July, injuring seven, and the collapse of a suspension bridge at Pauna in December which killed 120 persons.

**Education.**—In 1945, 12,147 elementary schools reported enrolments totalling 788,143 pupils with 23,432 teachers; 1,830 secondary and vocational schools listed 94,669 students and 7,825 teachers (1,421 elementary and 606 other schools not reporting). There were six public and two private universities. Approximately 7.4% (14,733,953 pesos) of the 1945 national budget was allocated to public education. As of Jan. 1, 1947, there were 430 motion-picture theatres with a seating capacity of 250,000.

**Finance.**—The monetary unit of Colombia is the peso, valued officially on Sept. 30, 1947, at 56.98 cents U.S. The preliminary budget for 1948 provided for expenditures of 320,500,000 pesos (291,695,159 pesos in 1947). For the first four months of 1947 the fiscal deficit was $11,764,000. The national debt as of May 31, 1946, was 269,129,235.30 pesos, internal; 420,279,960.58 pesos, external. On Jan. 1, 1947, money in circulation amounted to 662,000,000 pesos; savings bank deposits, 88,000,000 pesos; commercial deposits, 498,000,000 pesos. Gold and foreign exchange holdings by the national bank totalled $151,000,000 on April 30, 1947.

**Trade.**—Exports for 1946 were valued at $200,900,000 ($140,566,000 in 1945) while imports totalled $230,000,000 ($160,555,000 in 1945). The United States took 78% and supplied 63% of the trade. During the first seven months of 1947, exports amounted to $129,200,000 and imports, $217,900,000. Coffee shipments in 1946 established a new record, 5,661,463 bags of 132 lb., and August estimates placed the 1947 exports at 6,500,000 bags. Other important shipments were petroleum, gold, silver and platinum; imports were chiefly manufactured goods and construction materials.

**Communications.**—In 1945 there were 2,159 mi. of railways, 9,850 mi. of improved highways, 4,620 mi. of navigable rivers, 72.5 mi. of aerial cables and 41 airports. Registered motor vehicles included 15,306 automobiles, 3,738 buses and 10,062 trucks. Air, rail and highway transportation continued to expand rapidly in 1947, but oceanic commerce was hampered by severe fire damage to the Pacific port of Tumaco and silt clogging of the Caribbean port of Barranquilla. Plans were announced in December for port improvements costing 46,000,000 pesos.

In 1945 there were 28,842 mi. of telegraph and 103,826 mi. of telephone lines, exclusive of municipal services. In 1946 there were 112 private radio broadcasting stations in addition to the national transmitter. In 1947 the national government planned more than 3,000 mi. of new telephone and telegraph lines with modern automatic equipment.

**Agriculture.**—The basic industry of Colombia is agriculture, and coffee is the main commercial crop. The 1946–47 coffee yield amounted to 6,500,000 bags (5,478,000 bags for 1945–46). Other crops (with 1946 production figures) are: corn (25,408,000 bu.), potatoes (16,902,000 bu.), wheat (65,000 tons), rice (3,999,000 bu.), cotton (22,000 bales), tobacco (40,785,000 lb.), sugar (96,000 tons), rubber (1,845,250 lb.) and cinchona bark (12,500 lb.). In 1945 livestock estimates included 12,334 cattle, 1,000,000 sheep, 2,500,000 hogs and 630,000 goats.

**Manufacturing.**—The leading manufacturing industries are foodstuff processing, textiles and beverages. In 1945 industrial establishments totalled 7,853, capitalized at 399,940,643 pesos and employing 135,400 persons at pay totalling 641,081,498 pesos.

**Mineral Production.**—The chief extractive industries (with 1945 production figures) are petroleum (22,825,026 bbl.), gold (506,695 troy oz.), silver (168,699 troy oz.), platinum (34,757 troy oz.), salt (90,627 tons) and cement (302,730 tons). In 1947 petroleum production was estimated at 24,966,000 bbl. (22,119,000 bbl. in 1946). Gold mining slumped during the year as production costs rose without a corresponding rise in the price of the metal.

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**Colorado.** A Rocky mountain state of the United States, the west-central part; mean elevation above s level, 6,800 ft., the highest of any state. Admitted to the uni in 1876 as the 38th state and known as the "Centennial state Area 104,247 sq.mi., including 280 sq.mi. of water surface. T U.S. owns 34.5% of the total land area and 59.3% is in priva ownership, the remainder belonging to state, county and munic pal governments.

The central and western portions are mountainous and t eastern half consists of rolling plains.

Population (1940) 1,123,296; 52.6% urban, 47.4% rura 93.6% native, 6.4% foreign-born; white 98.5%, Negro 1.1 other .4%; 102.6 males per 100 females. The 1940 census r ported 2,734 Japanese, the largest in number of all races oth than white and Negro. On July 1, 1947, the bureau of cens estimated the civilian population at 1,159,000, a gain of 3.2 from 1940. Capital, Denver (1940 census, 322,412) 1947 es (metropolitan district) 471,000; other cities, Pueblo (52,16 1947 est. 63,800; Colorado Springs (36,789) 1947 est. 45,00 Greeley (15,995) 1947 est. 19,000.

**History.**—The 36th general assembly met in regular sessi from Jan. 1 through April 18, 1947. The first major acti taken was the adoption of two public health bills; one reo ganized the state department of public health and greatly e larged the powers and duties of the department concerning su matters as the control of disease, the rendering of public heal services, sanitation and sewage inspection, etc.; the other pr vided for the optional creation of district or county health d partments.

To promote highway safety, the uniform financial respons bility bill was enacted, the personnel of the Colorado sta patrol increased, a highway safety council was created and state radio system authorized. The gasoline tax was increase from four cents to six cents per gallon to finance an enlarge highway construction program, covering not only state highwa but county roads and city streets as well.

In the field of public welfare legislation, amendments ma to the old age pension laws resulted in the payment of a max mum pension of $69 per month, the highest in the U.S. A to indigent residents afflicted with tuberculosis was increase as were allotments of funds for dependent children and the blin

To aid veterans, the duties of the state department of ve erans' affairs were extended, the appropriation for the depar ment greatly increased and its work co-ordinated with count veterans' officers. Municipalities were authorized to set u housing authorities and to give veterans preference in all housin constructed or acquired.

Increased state aid was given to schools, mainly for teacher salaries, financed by an increase in the state income tax rat and in the ad valorem property tax. State employees' salari were raised and for the first time based upon a classified sala plan. Workmen's compensation and unemployment compens tion benefits were increased. In a series of 23 bills a 10-yea building program for state institutions and agencies was aut orized, to be financed by a mill levy on property.

Finally, the legislature referred to the people, to be voted at the 1948 election, a measure providing for the racing horses and other animals and legalizing pari-mutuel wagering such race meets.

**Education.**—The 1947 legislature made appropriations $2,150,000 for county school tax replacement and $6,000,00 for equalization and general participation. These direct appr priations, in addition to about $800,000 earned income fro public school lands, provided roughly $9,000,000 for state su port of Colorado schools.

The 1947 census of school population including ages of through 21 years was 295,537, compared with 297,281 on the 1946 census.

**Social Insurance and Assistance, Public Welfare and Related Programs.**—Disbursements from the state public welfare fund in 1946 amounted to $30,137,775.34. A total of 40,692 persons received a monthly average old age pension payment of $41.49. In Jan. 1947 each pension recipient received a bonus of $220.80. Total pensions paid in 1946, including burials and 1946 bonus, amounted to $23,463,499. Allotments of state and federal funds for 10,027 aid to dependent children recipients were $2,022,077.31; 441 blind recipients received $162,090.32. Federal grants in 1946 for the above programs, including grants for child welfare services, amounted to $10,146,667.04. Allotments of state funds for general assistance to supplement county funds totalled $974,096.03. Tuberculosis allotments (matched 50% by counties, 50% by state funds) $114,724.98. Miscellaneous, including grants-in-aid for child care, and federal funds for child welfare administration, commodity distribution, etc., $56,109.33.

**Communications.**—Construction on the state highway system in 1947 was the greatest in history. Of the system's 12,416 mi., 4,045 were federal aid primary, 3,345 mi. were federal aid secondary and 5,026 mi. were state roads. City streets totalled 3,133 mi.; county and local roads 63,161 mi.; national forests roads 788 mi.; toll roads 8 mi.; total 79,506 mi. There were 24 railroads operating with 3,883 mi. of main line track. On July 1, 1947, the number of certified aircraft had increased to 1,088. There were 6 scheduled air lines serving the state; 93 designated airports and landing fields. As of June 21, 1947, Colorado had 321,165 telephones in use.

**Banking and Finance.**—As of Dec. 1946, there were 77 national banks and 65 state banks. Deposits in all banks at the close of 1946 amounted to $1,088,460,000. Clearing in Denver, Pueblo and Colorado Springs aggregated $4,393,339,745.03. The unexpended balance in the treasury on June 30, 1947, was $44,875,379.23, the largest on record. General revenue in the fiscal year of 1946 was $103,194,083.88. All expenditures, including functional services, debt services and transfers amounted to $100,574,449.36. Debts—bonded, $590,000; anticipation warrants, $12,315,000; warrants—cash and general revenue, $2,488,623.27. Investments totalled $26,701,510.29, which, plus an unexpended balance June 30, 1947, of $44,875,379.23 made a total of $71,576,889.52.

**Agriculture.**—New production records were established in 1947. Hay and roughage were ahead of 1946 and the 10-year average and the crops of peaches and beans were unusually large. Sugar beets harvested yielded 2,386,000 tons, a substantial increase over 1946. Farm wages were at a record high. Colorado marketed $20,000,000 worth of farm truck crops through the marketing agencies and Marketing act. Prices received by farmers for farm products in 1947 were higher than the 10-year average from 40% on fruits and vegetables to 120% on bean products.

Table I.—*Leading Agriculture Products of Colorado, 1947*

| Crop | Unit | Indicated Yield 1947 |
|---|---|---|
| Corn | Bu. | 13,756,000 |
| Wheat | " | 39,245,000 |
| Barley | " | 13,856,000 |
| Oats | " | 3,350,000 |
| Dry beans | 100# bags | 2,126,000 |
| Sugar beets | Tons | 2,386,000 |
| Tame hay | Tons | 1,760,000 |
| Broomcorn | Tons | 12,468,000 |
| Potatoes | Bu. | 20,626,000 |
| All sorghum (grain) | " | 1,850,000 |
| Peaches | " | 2,238,000 |
| Apples | " | 1,120,000 |

**Manufacturing.**—Colorado ranks high among the states in the manufacture of many commodities: beet sugar, chemicals, cement, coke, rubber products, mining machinery (in which Colorado is a leader in the world), canned fruits, vegetables, coffee roasting and grinding. It was estimated that in 1947 there were 1,500 industries in Colorado employing 57,800 workers, annually turning out an industrial product valued at $665,000,000.

**Mineral Production.**—Mining is Colorado's chief industry. It is a major gold-producing state and the largest producer of vanadium in the world. Colorado leads the entire world in the production of molybdenum and is among the first in the production of vanadium and uranium.

Table II.—*Mineral Production of Colorado, 1946 and 1945*

| | Value 1946 | Value 1945 |
|---|---|---|
| Gold—placer and lode | $4,991,455 | $3,532,725 |
| Silver | 1,810,042 | 1,583,488 |
| Copper | 568,296 | 400,950 |
| Lead | 3,713,848 | 2,931,568 |
| Zinc | 8,774,200 | 8,227,790 |

The production of coal in Colorado was 5,928,823 tons in 1946 compared with 7,653,979 tons in 1945. (P. Ae.)

## Colorado, University of.

The 1947 fall enrolment consisted of 8,700 on the Boulder campus, 500 in the medical and nursing schools in Denver, 2,500 in extension classes in Denver and other Colorado cities, and 5,000 in the correspondence school; a total of 16,700 individuals. Five out of six of the new dormitory buildings were completed, the total cost of the project amounting to $3,000,000. Approximately $400,000 was received from outside sources to support 90 research projects. The Bureau of Business Research compiled studies for state communities indicating the kind of industry the areas could support. The Division of Industrial Hygiene reduced industrial hazards and worked on ways of improving health of workers. In the Engineering Experiment station, 15 research projects were conducted on the Boulder campus, including experiments in solar heating which were expected to have an important effect on low-cost housing. The Child Research council work at the university medical centre in Denver was regarded as one of the most significant developments in the field of pediatrics. The university was one of 52 colleges and universities selected for the naval reserve officers' training corps educational program. A two-year program of cosmic-ray research was begun in June 1947. In December the university joined the Missouri Valley Intercollegiate Athletic association, which includes the universities of Kansas, Nebraska, Missouri and Oklahoma, Kansas State college and Iowa State college. (For statistics of endowment, enrolment, faculty, library volumes, etc., *see* UNIVERSITIES AND COLLEGES.)

(R. L. St.)

**Colour Photography:** *see* MOTION PICTURES; PHOTOGRAPHY.

**Columbia, District of:** *see* WASHINGTON, D.C.

## Columbia University.

An institution of higher learning in New York city. The budget appropriation for the academic year 1946–47 was $21,876,616.96. At a special meeting of the trustees on June 24, 1947, Gen. Dwight D. Eisenhower was elected 13th president of Columbia, to take office upon the termination of his service as chief of staff of the U.S. army; it was expected that General Eisenhower would assume his duties on June 7, 1948. Dr. Frank D. Fackenthal, acting president, became chairman of the trustees' committee on education. Upon the retirement of Virginia Crocheron Gildersleeve as dean of Barnard college, she was succeeded by Mrs. Millicent Carey McIntosh. The affiliation of Columbia with the New York Post-Graduate Medical school and hospital was terminated during the year, and the university announced its affiliation, for purposes of medical instruction, with three hospitals in Cooperstown and New York city. A large cyclotron for experimental work in nuclear fission was being erected by the university at the Hamilton estate, Nevis, at Irvington-on-Hudson, N.Y. (For statistics of endowment, enrolment, faculty, library volumes, etc., *see* Universities and Colleges.)

(M. H. T.)

**Columbium.** The production of columbium ores in the United States is relatively small—3,208 lb. in 1944 and 1,149 lb. in 1945, with 1946 production not yet reported at the close of 1947. The demand is met almost entirely from imports, which amounted to 1,842 short tons in 1944, 2,139 tons in 1945 and 1,213 tons in 1946, mainly from Nigeria.

(G. A. Ro.)

**Comets:** *see* Astronomy.

**Cominform:** *see* Communism; Union of Soviet Socialist Republics.

**Commerce:** *see* Business Review; International Trade.

**Commerce, U.S. Department of:** *see* Government Departments and Bureaus.

**Commerce Commission, Interstate:** *see* Interstate Commerce Commission.

## Committee for Economic Development.

The Committee for Economic Development was formed late in 1942 by U.S. businessmen to plan during World War II for quick conversion, and the attainment of a new high level of peacetime production and employment after victory.

Originally C.E.D. was set up in two divisions. One, the field development division, was formed to stimulate planning at the grass roots toward the above objectives. The national field development division helped organize 2,900 local committees with 70,000 businessmen serving as volunteer members.

The other, the research division, sought through objective study to determine what policies of government, business, labour and agriculture would contribute best toward the attainment and later the maintenance of high national levels of peacetime production and employment.

Early in 1946, six months after final victory, work of the field development division was terminated, its task of helping to achieve high employment having been largely completed.

On the basis of a comprehensive survey of results, C.E.D. was able to report to President Harry S. Truman in Sept. 1945, that within 12 months the United States would have 58,000,000 gainfully employed workers, and hence that no prolonged period of serious unemployment was to be expected during the transition from war to peace. The accuracy of this report was shown just one year later when the U.S. census bureau reported 58,370,000 such workers.

In 1947 all of the activities of C.E.D. were directed toward the central target of a more stable dynamic economy with high-level employment and production. The objective, which the C.E.D. considers to be practical and obtainable, is a reduction in the cyclical business swings from a maximum of 50% to between 15% and 20%. If achieved, it could bring about a doubling of the average standard of living in the next 25 years.

The procedures followed by C.E.D. in its research activities consist of four steps. These are: (1) selecting for study those factors which have important impact upon employment and business stability; (2) designating the economists and businessmen who are to undertake each study and whose first step is to gather all pertinent facts; (3) sifting the facts by subjecting them to intensive discussion by the economists and businessm and (4) integrating the facts into suggested policies for acti and submitting the recommendations to the public.

Up to the end of 1947, 13 statements on national policy w produced and distributed by the C.E.D. Research and Pol committee of businessmen. These statements and the date their issue follow:

*Postwar Employment and the Settlement of Terminated War Contra* (Oct. 1943); *Postwar Employment and the Liquidation of War Product* (July 1944); *Postwar Federal Tax Plan for High Employment* (Se 1944); *Postwar Employment and the Removal of Wartime Cont* (April 1945); *International Trade, Foreign Investment and Dome Employment* (May 1945); *The Problem of Changeover Unemploym* (Aug. 1945); *Toward More Production, More Jobs and More Freed* (Nov. 1945); *Agriculture in an Expanding Economy* (Dec. 1945); *End of Price Control—How and When?* (April 1946); *Fiscal Policy Fight Inflation* (Sept. 1946); *Collective Bargaining: How to Make More Effective* (Feb. 1947); *Meeting the Special Problems of Small B ness* (June 1947) and *Taxes and the Budget: A Program for Prospe in a Free Economy* (Nov. 1947).

During the same period 11 research reports also were co pleted for C.E.D. by independent scholars. These stateme and their authors follow:

*The Liquidation of War Production,* by A. D. H. Kaplan; *Demobili tion of Wartime Economic Controls,* by John Maurice Clark; *Provid for Unemployed Workers in the Transition,* by Richard A. Lester; *P duction, Jobs and Taxes,* by Harold M. Groves; *International Trade Domestic Employment,* by Calvin B. Hoover; *Agriculture in an Unsta Economy,* by Theodore W. Schultz; *Jobs and Markets,* by six members C.E.D. research staff; *Postwar Taxation and Economic Progress,* Harold M. Groves; *Financing Business during the Transition,* by Cha C. Abbott; *Controlling World Trade—Cartels and Commodity Ag ments,* by Edward S. Mason; *Small Business—Its Place and Probl* by A. D. H. Kaplan.

Most of the research reports and policy statements produ up to the end of 1946 dealt largely with problems of the tra tion. At that time there remained before the C.E.D. resea division numerous incompleted assignments, studies of lo range economic problems. Many representatives of governme business, agriculture, labour and the public urged that the search program be continued until these assignments could completed.

C.E.D. took two steps to meet the responsibilities of condu ing such an intensive research program and making known results of this research. One was to increase the members of its national board of trustees from 26 to 100. The other to form a national information committee, whose function is bring to the attention of interested individuals and groups results of this program.

During the year 1947, and growing out of the C.E.D. resea program, an important activity was started in the field of hig education. Precedent for this had been furnished by the U versity of Wisconsin and other universities which carried their liaison operations with C.E.D. beyond the termination the latter's field activities. Under a fulltime director assig by the University of Wisconsin, economic seminars were ganized throughout the state at which educators and busine men discussed important problems at the "grass root" le This activity was so promising that it was becoming nationa scope and was enlisting the interest of many leading universi and colleges.

The board of trustees is the governing body of C.E.D. P G. Hoffman, president of the Studebaker corporation of So Bend, Ind., was chairman of the board from the date the co mittee was organized. Ralph E. Flanders of Springfield, served as chairman of the Research and Policy committee u he resigned in Jan. 1947, following his election as United Sta senator from Vermont. He was succeeded by Raymond Ru cam of New York, co-founder and, until he retired, chairm of the board of the Young and Rubicam advertising age Sumner Slichter, Lamont professor of Harvard university, chairman of the Research Advisory board.

Walter Fuller, president of the Curtis Publishing company Philadelphia, was chosen as chairman of the National Infor tion committee when it was formed in 1946.

Officers of the corporation during 1947 were: executive director, Henry R. Johnston; research director, Theodore O. Yntema, professor on leave from the University of Chicago; associate research director, Howard B. Myers; director of information, John H. Van Deventer; field director, Robert S. Donaldson, and secretary, Elizabeth H. Walker.

C.E.D. is supported entirely by voluntary contributions from hundreds of business concerns. It has no relation whatever to any agency of government nor to any private business organization. It maintains offices in Washington, D.C., in Chicago and in New York. The address in the latter city is 285 Madison Ave., New York 17, N.Y. (P. G. H.)

**Commodity Prices:** *see* Business Review; Prices.

**Commons, Members of House of:** *see* Parliament, Houses of.

**Commonwealth Fund, The:** *see* Societies and Associations.

## Communism.

During 1947 the world revolutionary movement of communism, under the leadership of soviet Russia, consolidated the gains which it made after 1944. But in spite of persistent efforts, it was unable to make further inroads against democracy, which regained its vitality and its confidence.

The strength of communism could be learned from membership figures of communist parties all over the world as published at the British empire communist congress in Feb. 1947. The influence of the movement, however, was many times greater. Several countries, above all the U.S.S.R., Yugoslavia and a large part of China, were totally controlled by communists although the party membership in each case represented only a small minority of the population. In other countries not so controlled the party represented only the hard and well-disciplined core of a movement whose influence was spread through a great number of organizations following the party line, especially in foreign policy, without actually adhering to the party.

According to the figures published at the British empire congress and later figures published in Moscow in Nov. 1947, the membership in the Soviet Union was placed at 6,000,000 in addition to 3,000,000 communist youth; Italy and China were reported to count more than 2,000,000 members each; France and Czechoslovakia had more than 1,000,000 members each. In most European countries membership was reported as having multiplied many times after 1938. The number of party members in Great Britain was listed as 43,000; in the United States, 74,000.

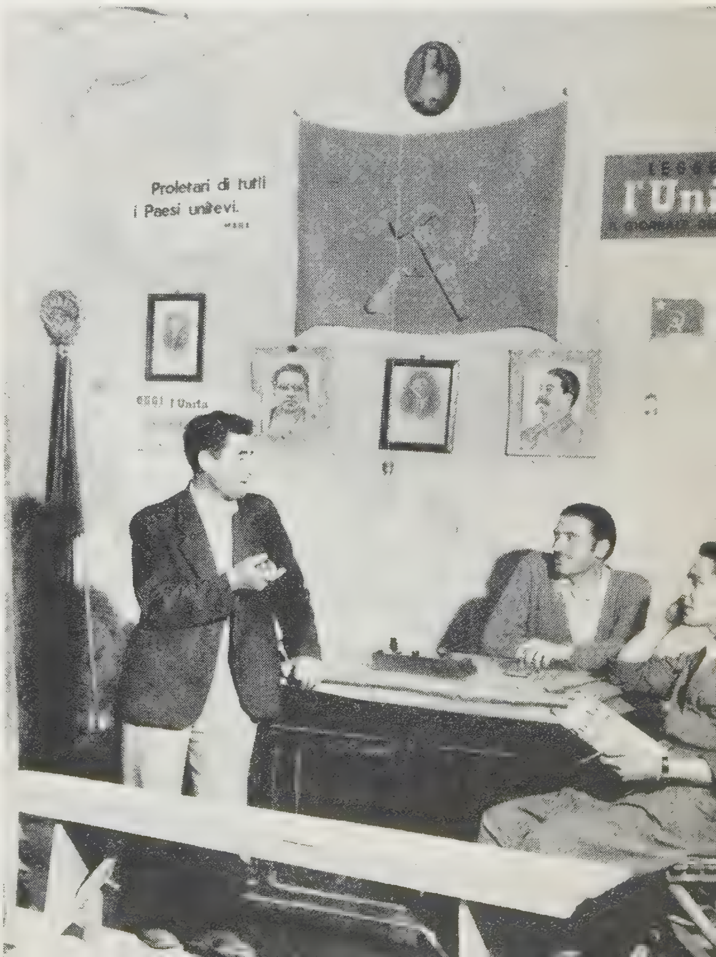
In Latin America 16 parties, many of which did not use the name "communist," had a total reported membership of 491,800; the strongest were those in Cuba, Brazil and Chile. Large votes were polled by the communists in the provincial elections in Bengal (India) and in the municipal elections in Brazil. The Communist party in Canada reported a membership of 23,000 and held one seat in the federal legislature until this member, Fred Rose, was convicted of giving wartime secrets to soviet agents. Communism was relatively weak in the middle east.

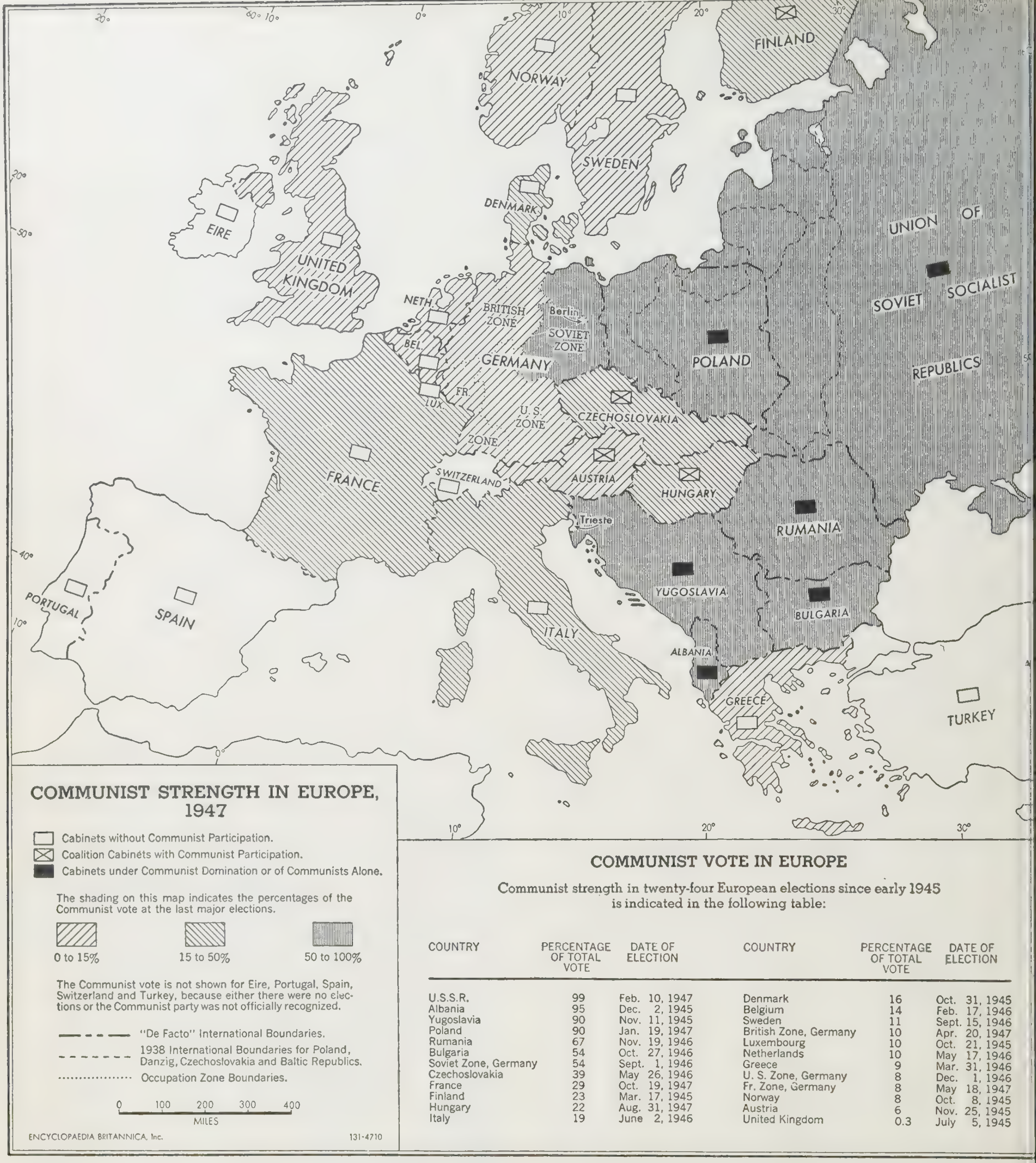
The competition between communism and democracy was especially strong where the "two worlds" met—in Germany, for example; at Greece's northern border and in Korea. In the soviet zone of Germany communism worked through the Socialist Unity party and the Free German Youth. These movements advocated a strongly centralized German government and proposed to arrive "by way of a plebiscite to the unity of Germany." In Germany, as throughout Asia, communism stressed the struggle against the imperialism of the western powers which "wished to enslave the world." This line of thought and proposed action was carried on through a number of organizations with world-wide affiliations which avoided use of the word "communist" and replaced it with derivatives of the word "democracy."

The communists called only communism or a pro-soviet attitude "democracy"; they called democracy "reaction" and an attitude critical of soviet policy or communist expansion "warmongering." In the struggle against reaction as defined by the communists, representatives of nine communist parties (U.S.S.R., France, Italy, Poland, Yugoslavia, Bulgaria, Rumania, Hungary and Czechoslovakia) met in Sept. 1947 in Poland and decided to establish a Communist Information bureau (Cominform) in Belgrade, Yugoslavia. This new unit represented the core of a united front against the threat of "reactionary and imperialist aggression" led by the United States. All those in favour of "democracy and peace" were asked to close ranks around this new people's front of "anti-imperialists." The attack against such European social democratic leaders as Léon Blum in France, Clement Attlee and Ernest Bevin in Britain, Karl Renner in Austria and others, was almost as strongly worded as that against U.S. "reaction." The Cominform established in Belgrade a fortnightly magazine, "For lasting peace—for the people's democracy." The first issue appeared on Nov. 15, in French and Russian. Weekly publication in several other languages was planned.

In the United States the loyalty of government employees in positions involving military security was checked, and a number of persons were dismissed. Government and public opinion in the U.S. asked the necessary precautionary measures to safeguard the rights and liberties of Americans against any indis-

REVIVAL of a communist international to defend the national sovereignty of European peoples "against U.S. aggression" was announced from Moscow on Oct. 5, 1947. This picture shows three members of a communist cell in Italy, one of the nine member nations of the new Cominform




FINLAND
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ZONE
POLAND
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HUNGARY
RUMANIA
FRANCE
SWITZERLAND
Trieste
YUGOSLAVIA
BULGARIA
ALBANIA
GREECE
TURKEY
ITALY
PORTUGAL
SPAIN
20°
10°
0°
30°
40°
50°
☐ Cabinets without Communist Participation.
☒ Coalition Cabinets with Communist Participation.
■ Cabinets under Communist Domination or of Communists Alone.
The shading on this map indicates the percentages of the Communist vote at the last major elections.
0 to 15%
15 to 50%
50 to 100%
The Communist vote is not shown for Eire, Portugal, Spain, Switzerland and Turkey, because either there were no elections or the Communist party was not officially recognized.
"De Facto" International Boundaries.
1938 International Boundaries for Poland, Danzig, Czechoslovakia and Baltic Republics.
Occupation Zone Boundaries.
0 100 200 300 400
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COMMUNIST STRENGTH IN EUROPE, 1947

### COMMUNIST VOTE IN EUROPE

Communist strength in twenty-four European elections since early 1945 is indicated in the following table:

| COUNTRY | PERCENTAGE OF TOTAL VOTE | DATE OF ELECTION | COUNTRY | PERCENTAGE OF TOTAL VOTE | DATE OF ELECTION |
|---|---|---|---|---|---|
| U.S.S.R. | 99 | Feb. 10, 1947 | Denmark | 16 | Oct. 31, 1945 |
| Albania | 95 | Dec. 2, 1945 | Belgium | 14 | Feb. 17, 1946 |
| Yugoslavia | 90 | Nov. 11, 1945 | Sweden | 11 | Sept. 15, 1946 |
| Poland | 90 | Jan. 19, 1947 | British Zone, Germany | 10 | Apr. 20, 1947 |
| Rumania | 67 | Nov. 19, 1946 | Luxembourg | 10 | Oct. 21, 1945 |
| Bulgaria | 54 | Oct. 27, 1946 | Netherlands | 10 | May 17, 1946 |
| Soviet Zone, Germany | 54 | Sept. 1, 1946 | Greece | 9 | Mar. 31, 1946 |
| Czechoslovakia | 39 | May 26, 1946 | U. S. Zone, Germany | 8 | Dec. 1, 1946 |
| France | 29 | Oct. 19, 1947 | Fr. Zone, Germany | 8 | May 18, 1947 |
| Finland | 23 | Mar. 17, 1945 | Norway | 8 | Oct. 8, 1945 |
| Hungary | 22 | Aug. 31, 1947 | Austria | 6 | Nov. 25, 1945 |
| Italy | 19 | June 2, 1946 | United Kingdom | 0.3 | July 5, 1945 |

criminate accusations. Soviet Russia and the eastern European and Balkan governments under communist control tried to enlist the sympathy of U.S. citizens of Slav descent for soviet policy.

Energetic action against communism was taken in Latin America. In Brazil the Communist party was outlawed and the government broke off relations with soviet Russia. The same happened in Chile. Communist influence remained strong in Brazil even at the end of the year with the infiltration of party members and their friends into the administration of the states of Pernambuco and São Paulo. President Eurico Dutra of Brazil warned on Nov. 6 "against the infiltration of foreign ideologists into national political life and the alliance of communists with democratic forces which is as illogical as it dangerous."

Growing strength was shown by the communists in Chin Their leader, Mao Tse-tung, had succeeded in creating strongly disciplined party under his authority and in winni the support of rural masses by intelligent consideration of the economic demands. In their foreign policy the Chinese communists followed the general party line against U.S. "reactio ary imperialism," which was accused of having replaced Ja anese and German fascism as the new common enemy of t peoples of the world. But they foresaw the triumph of t "democratic" forces supported by the "progressives" in the United States and the broad masses everywhere. On Christmas day 1947 Mao Tse-tung called for a Cominform of the far east to co-ordinate the "liberation movement" of 1,000,000,000 Asiatics.

By the end of 1947 communism was battling on several fronts: in Germany it represented itself as defending German national unity and greatness, and organized in Berlin a National All-People's Congress for Unity and Just Peace with the intention of developing it into a parliament and government claiming the whole of Germany. In China, communist forces advanced south of the Lung-Hai railway, in Shantung province, and especially in Manchuria against the last government strongholds there. Under Marshal Tito's leadership the complete consolidation and unification of the communist-led bloc along the Danube and in the Balkans was achieved; the attempt was intensified to mobilize world opinion and to influence opinion in the United States against American policy. In France and Italy, communist-led strikes tried to overthrow the two governments for their co-operation with the United States; and in Greece a communist "democratic government" was proclaimed on the northern borders of the country and tried to capture Konitsa, a small Greek town on the Albanian frontier, as its capital. (*See* also Democracy; Fascism; Political Parties, British; Socialism; World Federation of Trade Unions.)

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(H. Ko.)

## Community Chest.

The community chest is the name given to a local federation made up of social-service agencies and individuals, the purpose of which is to promote joint planning for voluntary health and welfare services in the community and to raise, by a united annual campaign, the funds for their support.

Community Chests and Councils, Inc., was organized in Feb. 1918 as the national association of local community chests and councils of social agencies. It is a clearinghouse of information and ideas for its members and provides them with many services in the fields of health and welfare planning and fund raising.

Of the 1,247 community chests and councils of social agencies in operation in Aug. 1947 (897 chests and 350 councils), 854 chests and 325 councils were in continental U.S.; 4 chests and 3 councils in Hawaii; 35 chests and 21 councils in Canada; 2 chests in South Africa; 1 chest in the Virgin Islands; 1 chest in Puerto Rico; and 1 council in the British West Indies. Almost every city in the U.S. (except New York city, which has a limited joint financing organization) in 1947 had a community chest or similar plan of federated financing for its voluntary social services. In 897 cities in 1946 more than 16,000,000 contributions totalling $168,521,984 were given to community chests to be used during 1947 for voluntary social work in their communities and for national agencies. In 1946 the chest campaigns were united under the name "The Community Chests of America," using the national symbol of the Red Feather and the slogan "Everybody Benefits—Everybody Gives." In that year a national budget committee was organized by C.C.C., Inc. to review budgets of national and international services and relief agencies, and to make recommendations for their possible support by local chests.

Officers of C.C.C., Inc., for 1947 were: honorary president, Gerard Swope, New York city; president, Edward L. Ryerson, Chicago, Ill.; vice-presidents, J. B. Adoue, Jr., Dallas, Tex., H. L. R. Emmet, Erie, Pa., Philip Morgan, Worcester, Mass., Mrs. Henry P. Russell, San Francisco, Calif.; treasurer, Milton H. Glover, Hartford, Conn.; secretary, Mrs. Oswald B. Lord, New York city. Ralph H. Blanchard was executive director. The address of the association was 155 East 44th St., New York 17, N.Y. (*See* also Relief.)

(B. A.)

## Community Trusts.

Funds totalling $77,800,000 were under administration in 76 community foundations in the United States and Canada for charitable uses at the beginning of 1947.

In the preceding year, their aggregate appropriations for public purposes were $2,205,000.

A community trust consists of a number of trust funds of differing sizes and for varied charitable purposes, which funds retain their separate identities as investment units but are grouped for administrative simplicity into a single operational entity. If originally expressed desires of the founder of a fund concerning the purposes to be served by it become impossible or impracticable of execution, remedial action may be taken by a central distribution committee which has the donor's authorization and instruction to recast, if necessary or advisable, the philanthropic application of any fund within the trust.

Largest among community foundations at Jan. 1, 1947, was the New York Community trust in which were 76 funds valued at $17,543,000. Resources of the Chicago Community trust were $13,094,000.

The Cleveland foundation had $10,222,000; the Boston Permanent Charity fund, $6,030,000; and the California Community foundation, $4,283,000.

Out of the total disbursements of $2,205,000 in 1946, the New York Community trust allocated $580,059; Chicago, $349,012; Cleveland, $316,986; and Boston, $249,552.

New gifts to these foundations totalled $5,207,000 in that year. Winston-Salem, N.C., received $975,194; Chicago, $768,529; New York, $579,720; and Cleveland, $551,888. During the same period, the Seattle foundation became operative, the Pittsburgh foundation received its first funds and the Community Welfare foundation of Wilmington, N.C., made its initial outpayment.

(R. Hs.)

**Composers, Authors and Publishers, American Society of:** *see* Societies and Associations.

**Confectionery:** *see* Candy.

**Congo, Belgian:** *see* Belgian Colonial Empire.

## Congregational Christian Churches.

The Congregational Christian Churches of the United States represent a union (1931) of the Congregational Churches, established in 1620, and the Christian Churches, founded after the American Revolution. There were 5,783 churches in 1947, organized in 51 conferences, with a membership of 1,150,853. They are community institutions with no restrictions of race, creed or station, and each church elects its own minister and officers and writes its own covenant. Total contributions received for home expenses during 1947 were $21,718,437; for benevolences, $5,411,677; total property value was $186,408,296; and invested funds of the churches amounted to $34,593,156. There were 267 missionary churches of this fellowship in foreign lands, not including areas in Japan, north China and the Philippines where work was being resumed gradually. The central office of the denomination is the General Council of Congregational Christian Churches, 287 Fourth Ave., New York 10, N.Y. (*See* also Church Membership.)

**Congress, United States.** The 80th U.S. congress convened for its second session on Jan. 6, 1948. It comprised the following members (as of Jan. 6, 1948):

## United States Senate

Presiding Officer: Arthur H. Vandenberg of Michigan[1]
Majority Leader; Wallace H. White, Jr., of Maine
Minority Leader: Alben W. Barkley of Kentucky
Republicans: 51; Democrats: 45.

| State | Name | Party | Term Expires | Residence |
|---|---|---|---|---|
| Ala. | Hill, Lister | Dem. | 1951 | Montgomery |
| | Sparkman, John J. | Dem. | 1949 | Huntsville |
| Ariz. | McFarland, Ernest W. | Dem. | 1953 | Florence |
| | Hayden, Carl | Dem. | 1951 | Phoenix |
| Ark. | Fulbright, J. W. | Dem. | 1951 | Fayetteville |
| | McClellan, John L. | Dem. | 1949 | Camden |
| Calif. | Knowland, William F. | Rep. | 1953 | Oakland |
| | Downey, Sheridan | Dem. | 1951 | Laguna Beach |
| Colo. | Johnson, Edwin C. | Dem. | 1949 | Craig |
| | Millikin, Eugene D. | Rep. | 1951 | Denver |
| Conn. | McMahon, Brien | Dem. | 1951 | Norwalk |
| | Baldwin, Raymond E. | Rep. | 1953 | Stratford |
| Del. | Buck, C. Douglass | Rep. | 1949 | Wilmington |
| | Williams, John J. | Rep. | 1953 | Millsboro |
| Fla. | Pepper, Claude | Dem. | 1951 | Tallahassee |
| | Holland, Spessard L. | Dem. | 1953 | Bartow |
| Ga. | George, Walter F. | Dem. | 1951 | Vienna |
| | Russell, Richard B. | Dem. | 1949 | Winder |
| Ida. | Taylor, Glen H. | Dem. | 1951 | Pocatello |
| | Dworshak, Henry C. | Rep. | 1949 | Burley |
| Ill. | Brooks, C. Wayland | Rep. | 1949 | Chicago |
| | Lucas, Scott W. | Dem. | 1951 | Havana |
| Ind. | Capehart, Homer E. | Rep. | 1951 | Washington |
| | Jenner, William E. | Rep. | 1953 | Bedford |
| Iowa | Wilson, George A. | Rep. | 1949 | Des Moines |
| | Hickenlooper, Bourke B. | Rep. | 1951 | Cedar Rapids |
| Kan. | Capper, Arthur | Rep. | 1949 | Topeka |
| | Reed, Clyde M. | Rep. | 1951 | Parsons |
| Ky. | Barkley, Alben W. | Dem. | 1951 | Paducah |
| | Cooper, John S. | Rep. | 1949 | Somerset |
| La. | Overton, John H. | Dem. | 1951 | Alexandria |
| | Ellender, Allen J. | Dem. | 1949 | Houma |
| Me. | Brewster, Owen | Rep. | 1953 | Dexter |
| | White, Wallace H., Jr. | Rep. | 1949 | Auburn |
| Md. | Tydings, Millard E. | Dem. | 1951 | Havre de Grace |
| | O'Conor, Herbert R. | Dem. | 1953 | Annapolis |
| Mass. | Saltonstall, Leverett | Rep. | 1949 | Boston |
| | Lodge, Henry Cabot, Jr. | Rep. | 1953 | Beverly |
| Mich. | Vandenberg, Arthur H. | Rep. | 1953 | Grand Rapids |
| | Ferguson, Homer | Rep. | 1949 | Detroit |
| Minn. | Ball, Joseph H. | Rep. | 1949 | St. Paul |
| | Thye, Edward J. | Rep. | 1953 | Northfield |
| Miss. | Eastland, James O. | Dem. | 1949 | Ruleville |
| | Stennis, John C. | Dem. | 1953 | De Kalb |
| Mo. | Donnell, Forrest C. | Rep. | 1951 | Webster Groves |
| | Kem, James P. | Rep. | 1953 | Kansas City |
| Mont. | Murray, James E. | Dem. | 1949 | Butte |
| | Ecton, Zales N. | Rep. | 1953 | Manhattan |
| Neb. | Wherry, Kenneth S. | Rep. | 1949 | Pawnee City |
| | Butler, Hugh A. | Rep. | 1953 | Omaha |
| Nev. | McCarran, Patrick A. | Dem. | 1951 | Reno |
| | Malone, George W. | Rep. | 1953 | Reno |
| N.H. | Tobey, Charles W. | Rep. | 1951 | Temple |
| | Bridges, H. Styles | Rep. | 1949 | Concord |
| N.J. | Hawkes, Albert W. | Rep. | 1949 | Montclair |
| | Smith, H. Alexander | Rep. | 1953 | Princeton |
| N.M. | Hatch, Carl A. | Dem. | 1949 | Clovis |
| | Chavez, Dennis | Dem. | 1953 | Albuquerque |
| N.Y. | Wagner, Robert F. | Dem. | 1951 | New York City |
| | Ives, Irving M. | Rep. | 1953 | Norwich |
| N.C. | Umstead, William B. | Dem. | 1949 | Durham |
| | Hoey, Clyde R. | Dem. | 1951 | Shelby |
| N.D. | Langer, William | Rep. | 1953 | Bismarck |
| | Young, Milton R. | Rep. | 1951 | Berlin |
| Ohio | Taft, Robert A. | Rep. | 1951 | Cincinnati |
| | Bricker, John W. | Rep. | 1953 | Columbus |
| Okla. | Thomas, Elmer | Dem. | 1951 | Medicine Park |
| | Moore, E. H. | Rep. | 1949 | Tulsa |
| Ore. | Cordon, Guy | Rep. | 1949 | Roseburg |
| | Morse, Wayne L. | Rep. | 1951 | Eugene |
| Pa. | Myers, Francis J. | Dem. | 1951 | Philadelphia |
| | Martin, Edward | Rep. | 1953 | Washington |
| R.I. | Green, Theodore F. | Dem. | 1949 | Providence |
| | McGrath, J. Howard | Dem. | 1953 | Providence |
| S.C. | Johnston, Olin D. | Dem. | 1951 | Spartanburg |
| | Maybank, Burnet R. | Dem. | 1949 | Charleston |
| S.D. | Bushfield, Harlan J. | Rep. | 1949 | Miller |
| | Gurney, Chan | Rep. | 1951 | Yankton |
| Tenn. | McKellar, Kenneth | Dem. | 1953 | Memphis |
| | Stewart, Tom | Dem. | 1949 | Winchester |
| Tex. | O'Daniel, W. Lee | Dem. | 1949 | Fort Worth |
| | Connally, Tom | Dem. | 1953 | Marlin |
| Utah | Thomas, Elbert D. | Dem. | 1951 | Salt Lake City |
| | Watkins, Arthur V. | Rep. | 1953 | Orem |
| Vt. | Aiken, George D. | Rep. | 1951 | Putney |
| | Flanders, Ralph E. | Rep. | 1953 | Springfield |
| Va. | Byrd, Harry F. | Dem. | 1953 | Berryville |
| | Robertson, A. Willis | Dem. | 1949 | Lexington |
| Wash. | Magnuson, Warren G. | Dem. | 1951 | Port Blakely |
| | Cain, Harry P. | Rep. | 1953 | Tacoma |
| W.Va. | Revercomb, Chapman | Rep. | 1949 | Charleston |
| | Kilgore, Harley M. | Dem. | 1953 | Beckley |
| Wis. | Wiley, Alexander | Rep. | 1951 | Chippewa Falls |
| | McCarthy, Joseph R. | Rep. | 1953 | Appleton |
| Wyo. | O'Mahoney, Joseph C. | Dem. | 1953 | Cheyenne |
| | Robertson, Edward V. | Rep. | 1949 | Cody |

## United States House of Representatives (*served in 79 congress)

Speaker: Joseph W. Martin, Jr., of Massachusetts
Majority Leader: Charles A. Halleck, of Indiana
Minority Leader: Sam Rayburn, of Texas
Republicans: 245; Democrats: 185; American Labor: 1.

| State | Dist. | Name | Party | Residence |
|---|---|---|---|---|
| Ala. | 1 | *Boykin, Frank W. | Dem. | Mobile |
| | 2 | *Grant, George M. | Dem. | Troy |
| | 3 | *Andrews, George W. | Dem. | Union Springs |
| | 4 | *Hobbs, Sam | Dem. | Selma |
| | 5 | *Rains, Albert | Dem. | Gadsden |
| | 6 | *Jarman, Pete | Dem. | Livingston |
| | 7 | *Manasco, Carter | Dem. | Jasper |
| | 8 | Jones, Robert E., Jr.[1] | Dem. | Scottsboro |
| | 9 | Battle, Laurie C. | Dem. | Birmingham |
| Ariz. | | *Harless, Richard F. | Dem. | Phoenix |
| | | *Murdock, John R. | Dem. | Tempe |
| Ark. | 1 | *Gathings, E. C. | Dem. | West Memphis |
| | 2 | *Mills, Wilbur D. | Dem. | Kensett |
| | 3 | *Trimble, James W. | Dem. | Berryville |
| | 4 | *Cravens, Fadjo | Dem. | Fort Smith |
| | 5 | *Hays, Brooks | Dem. | Little Rock |
| | 6 | *Norrell, W. F. | Dem. | Monticello |
| | 7 | *Harris, Oren | Dem. | El Dorado |
| Calif. | 1 | *Lea, Clarence F. | Dem. | Santa Rosa |
| | 2 | *Engle, Clair | Dem. | Red Bluff |
| | 3 | *Johnson, Leroy | Rep. | Stockton |
| | 4 | *Havenner, Franck R. | Dem. | San Francisco |
| | 5 | *Welch, Richard J. | Rep. | San Francisco |
| | 6 | *Miller, George P. | Dem. | Alameda |
| | 7 | Allen, John J., Jr. | Rep. | Oakland |
| | 8 | *Anderson, Jack Z. | Rep. | San Juan Bautista |
| | 9 | *Gearhart, Bertrand W. | Rep. | Fresno |
| | 10 | *Elliott, Alfred J. | Dem. | Tulare |
| | 11 | Bramblett, Ernest K. | Rep. | Pacific Grove |
| | 12 | Nixon, Richard M. | Rep. | Whittier |
| | 13 | Poulson, Norris | Rep. | Los Angeles |
| | 14 | *Douglas, Helen Gahagan | Dem. | Los Angeles |
| | 15 | *McDonough, Gordon L. | Rep. | Los Angeles |
| | 16 | Jackson, Donald L. | Rep. | Santa Monica |
| | 17 | *King, Cecil R. | Dem. | Los Angeles |
| | 18 | Bradley, Willis W. | Rep. | Long Beach |
| | 19 | *Holifield, Chet | Dem. | Montebello |
| | 20 | *Hinshaw, Carl | Rep. | Pasadena |
| | 21 | *Sheppard, Harry R. | Dem. | Yucaipa |
| | 22 | *Phillips, John | Rep. | Banning |
| | 23 | Fletcher, Charles K. | Rep. | San Diego |
| Colo. | 1 | Carroll, John A. | Dem. | Denver |
| | 2 | *Hill, William S. | Rep. | Fort Collins |
| | 3 | *Chenoweth, J. Edgar | Rep. | Trinidad |
| | 4 | *Rockwell, Robert F. | Rep. | Paonia |
| Conn. | 1 | Miller, William J. | Rep. | Wethersfield |
| | 2 | Seely-Brown, Horace | Rep. | Pomfret Center |
| | 3 | Foote, Ellsworth B. | Rep. | North Branford |

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[1] President pro tempore of the senate in the absence of a vice-president.

[1] Elected Jan. 28, 1947, to fill the vacancy caused by the resignation of John J. Sparkm Nov. 5, 1946.

| State | Dist. | Name | Party | Residence |
|---|---|---|---|---|
| Conn. | 4 | Lodge, John Davis | Rep. | Westport |
|  | 5 | Patterson, James T. | Rep. | Naugatuck |
|  |  | Sadlak, Antoni N. | Rep. | Rockville |
| Del. |  | Boggs, J. Caleb | Rep. | Wilmington |
| Fla. | 1 | *Peterson, J. Hardin | Dem. | Lakeland |
|  | 2 | *Price, Emory H. | Dem. | Jacksonville |
|  | 3 | *Sikes, Robert L. F. | Dem. | Crestview |
|  | 4 | Smathers, George A. | Dem. | Miami |
|  | 5 | *Hendricks, Joe | Dem. | De Land |
|  | 6 | *Rogers, Dwight L. | Dem. | Fort Lauderdale |
| Ga. | 1 | Preston, Prince H., Jr. | Dem. | Statesboro |
|  | 2 | *Cox, Edward E. | Dem. | Camilla |
|  | 3 | *Pace, Stephen | Dem. | Americus |
|  | 4 | *Camp, A. Sidney | Dem. | Newnan |
|  | 5 | Davis, James C. | Dem. | Decatur |
|  | 6 | *Vinson, Carl | Dem. | Milledgeville |
|  | 7 | Lanham, Henderson | Dem. | Rome |
|  | 8 | Wheeler, W. M. | Dem. | Alma |
|  | 9 | *Wood, John S. | Dem. | Canton |
|  | 10 | *Brown, Paul | Dem. | Elberton |
| Ida. | 1 | Goff, Abe McGregor | Rep. | Moscow |
|  | 2 | Sanborn, John | Rep. | Hagerman |
| Ill. | 1 | *Dawson, William L. | Dem. | Chicago |
|  | 2 | Vail, Richard B. | Rep. | Chicago |
|  | 3 | Busbey, Fred E. | Rep. | Chicago |
|  | 4 | *Gorski, Martin | Dem. | Chicago |
|  | 5 | *Sabath, Adolph J. | Dem. | Chicago |
|  | 6 | *O'Brien, Thomas J. | Dem. | Chicago |
|  | 7 | Owens, Thomas L. | Rep. | Chicago |
|  | 8 | *Gordon, Thomas S. | Dem. | Chicago |
|  | 9 | Twyman, Robert J. | Rep. | Chicago |
|  | 10 | *Church, Ralph E. | Rep. | Evanston |
|  | 11 | *Reed, Chauncey W. | Rep. | West Chicago |
|  | 12 | *Mason, Noah M. | Rep. | Oglesby |
|  | 13 | *Allen, Leo E. | Rep. | Galena |
|  | 14 | *Johnson, Anton J. | Rep. | Macomb |
|  | 15 | *Chiperfield, Robert B. | Rep. | Canton |
|  | 16 | *Dirksen, Everett M. | Rep. | Pekin |
|  | 17 | *Arends, Leslie C. | Rep. | Melvin |
|  | 18 | Jenison, Edward H. | Rep. | Paris |
|  | 19 | *McMillen, Rolla C. | Rep. | Decatur |
|  | 20 | *Simpson, Sid | Rep. | Carrollton |
|  | 21 | Vacancy[2] |  |  |
|  | 22 | *Price, Melvin | Dem. | East St. Louis |
|  | 23 | *Vursell, Charles W. | Rep. | Salem |
|  | 24 | *Clippinger, Roy | Rep. | Carmi |
|  | 25 | *Bishop, C. W. | Rep. | Carterville |
|  |  | Stratton, William G. | Rep. | Morris |
| Ind. | 1 | *Madden, Ray J. | Dem. | Gary |
|  | 2 | *Halleck, Charles A. | Rep. | Rensselaer |
|  | 3 | *Grant, Robert A. | Rep. | South Bend |
|  | 4 | *Gillie, George W. | Rep. | Fort Wayne |
|  | 5 | *Harness, Forest A. | Rep. | Kokomo |
|  | 6 | *Johnson, Noble J. | Rep. | Terre Haute |
|  | 7 | *Landis, Gerald W. | Rep. | Linton |
|  | 8 | Mitchell, E. A. | Rep. | Evansville |
|  | 9 | *Wilson, Earl | Rep. | Huron |
|  | 10 | Harvey, Ralph[3] | Rep. | New Castle |
|  | 11 | *Ludlow, Louis | Dem. | Indianapolis |
| Iowa | 1 | *Martin, Thomas E. | Rep. | Iowa City |
|  | 2 | *Talle, Henry O. | Rep. | Decorah |
|  | 3 | *Gwynne, John W. | Rep. | Waterloo |
|  | 4 | *LeCompte, Karl M. | Rep. | Corydon |
|  | 5 | *Cunningham, Paul | Rep. | Des Moines |
|  | 6 | *Dolliver, James I. | Rep. | Fort Dodge |
|  | 7 | *Jensen, Ben F. | Rep. | Exira |
|  | 8 | *Hoeven, Charles B. | Rep. | Alton |
| Kan. | 1 | *Cole, Albert M. | Rep. | Holton |
|  | 2 | *Scrivner, Errett P. | Rep. | Kansas City |
|  | 3 | Meyer, Herbert A. | Rep. | Independence |
|  | 4 | *Rees, Edward H. | Rep. | Emporia |
|  | 5 | *Hope, Clifford R. | Rep. | Garden City |
|  | 6 | Smith, Wint | Rep. | Mankato |
| Ky. | 1 | *Gregory, Noble J. | Dem. | Mayfield |
|  | 2 | Vacancy[4] |  |  |
|  | 3 | Morton, Thruston Ballard | Rep. | Glenview |
|  | 4 | *Chelf, Frank L. | Dem. | Lebanon |
|  | 5 | *Spence, Brent | Dem. | Fort Thomas |
|  | 6 | *Chapman, Virgil | Dem. | Paris |
|  | 7 | Meade, W. Howes | Rep. | Paintsville |
|  | 8 | *Bates, Joe B. | Dem. | Greenup |
|  | 9 | *Robsion, John M. | Rep. | Barbourville |
| La. | 1 | *Hébert, F. Edward | Dem. | New Orleans |
|  | 2 | Boggs, Hale | Dem. | New Orleans |
| La. | 3 | *Domengeaux, James | Dem. | Lafayette |
|  | 4 | *Brooks, Overton | Dem. | Shreveport |
|  | 5 | Passman, Otto E. | Dem. | Monroe |
|  | 6 | *Morrison, James H. | Dem. | Hammond |
|  | 7 | *Larcade, Henry D., Jr. | Dem. | Opelousas |
|  | 8 | *Allen, A. Leonard | Dem. | Winnfield |
| Me. | 1 | *Hale, Robert | Rep. | Portland |
|  | 2 | *Smith, Margaret Chase | Rep. | Skowhegan |
|  | 3 | *Fellows, Frank | Rep. | Bangor |
| Md. | 1 | Miller, Edward T. | Rep. | Easton |
|  | 2 | Meade, Hugh A. | Dem. | Baltimore |
|  | 3 | Garmatz, Edward A.[5] | Dem. | Baltimore |
|  | 4 | *Fallon, George H. | Dem. | Baltimore |
|  | 5 | *Sasscer, Lansdale G. | Dem. | Upper Marlboro |
|  | 6 | *Beall, J. Glenn | Rep. | Frostburg |
| Mass. | 1 | *Heselton, John W. | Rep. | Deerfield |
|  | 2 | *Clason, Charles R. | Rep. | Springfield |
|  | 3 | *Philbin, Philip J. | Dem. | Clinton |
|  | 4 | Donohue, Harold D. | Dem. | Worcester |
|  | 5 | *Rogers, Edith Nourse | Rep. | Lowell |
|  | 6 | *Bates, George J. | Rep. | Salem |
|  | 7 | *Lane, Thomas J. | Dem. | Lawrence |
|  | 8 | *Goodwin, Angier L. | Rep. | Melrose |
|  | 9 | Nicholson, Donald W.[6] | Rep. | Wareham |
|  | 10 | *Herter, Christian A. | Rep. | Boston |
|  | 11 | Kennedy, John F. | Dem. | Boston |
|  | 12 | *McCormack, John W. | Dem. | Dorchester |
|  | 13 | *Wigglesworth, Richard B. | Rep. | Milton |
|  | 14 | *Martin, Joseph W., Jr. | Rep. | North Attleboro |
| Mich. | 1 | *Sadowski, George G. | Dem. | Detroit |
|  | 2 | *Michener, Earl C. | Rep. | Adrian |
|  | 3 | *Shafer, Paul W. | Rep. | Battle Creek |
|  | 4 | *Hoffman, Clare E. | Rep. | Allegan |
|  | 5 | *Jonkman, Bartel J. | Rep. | Grand Rapids |
|  | 6 | *Blackney, William W. | Rep. | Flint |
|  | 7 | *Wolcott, Jesse P. | Rep. | Port Huron |
|  | 8 | *Crawford, Fred L. | Rep. | Saginaw |
|  | 9 | *Engel, Albert J. | Rep. | Muskegon |
|  | 10 | *Woodruff, Roy O. | Rep. | Bay City |
|  | 11 | Potter, Charles E.[7] | Rep. | Cheboygan |
|  | 12 | Bennett, John B. | Rep. | Ontonagon |
|  | 13 | Coffin, Howard A. | Rep. | Detroit |
|  | 14 | Youngblood, Harold F. | Rep. | Detroit |
|  | 15 | *Dingell, John D. | Dem. | Detroit |
|  | 16 | *Lesinski, John | Dem. | Dearborn |
|  | 17 | *Dondero, George A. | Rep. | Royal Oak |
| Minn. | 1 | *Andresen, August H. | Rep. | Red Wing |
|  | 2 | *O'Hara, Joseph P. | Rep. | Glencoe |
|  | 3 | MacKinnon, George | Rep. | Minneapolis |
|  | 4 | Devitt, Edward J. | Rep. | St. Paul |
|  | 5 | *Judd, Walter H. | Rep. | Minneapolis |
|  | 6 | *Knutson, Harold | Rep. | Manhattan Beach |
|  | 7 | *Andersen, H. Carl | Rep. | Tyler |
|  | 8 | Blatnik, John A. | Dem. | Chisholm |
|  | 9 | *Hagen, Harold C. | Rep. | Crookston |
| Miss. | 1 | *Rankin, John E. | Dem. | Tupelo |
|  | 2 | *Whitten, Jamie L. | Dem. | Charleston |
|  | 3 | *Whittington, William M. | Dem. | Greenwood |
|  | 4 | *Abernethy, Thomas G. | Dem. | Okolona |
|  | 5 | *Winstead, Arthur | Dem. | Philadelphia |
|  | 6 | *Comer, William M. | Dem. | Pascagoula |
|  | 7 | Williams, John Bell | Dem. | Raymond |
| Mo. | 1 | *Arnold, Wat | Rep. | Kirksville |
|  | 2 | *Schwabe, Max | Rep. | Columbia |
|  | 3 | *Cole, William C. | Rep. | St. Joseph |
|  | 4 | *Bell, C. Jasper | Dem. | Blue Springs |
|  | 5 | Reeves, Albert L., Jr. | Rep. | Kansas City |
|  | 6 | *Bennett, Marion T. | Rep. | Springfield |
|  | 7 | *Short, Dewey | Rep. | Galena |
|  | 8 | Banta, Parke M. | Rep. | Arcadia |
|  | 9 | *Cannon, Clarence | Dem. | Elsberry |
|  | 10 | *Zimmerman, Orville | Dem. | Kennett |
|  | 11 | Bakewell, Claude I. | Rep. | St. Louis |
|  | 12 | *Ploeser, Walter C. | Rep. | Chesterfield (R.F.D.) |
|  | 13 | Karsten, Frank M. | Dem. | St. Louis |
| Mont. | 1 | *Mansfield, Mike | Dem. | Missoula |
|  | 2 | *D'Ewart, Wesley A. | Rep. | Wilsall |
| Neb. | 1 | *Curtis, Carl T. | Rep. | Minden |
|  | 2 | *Buffett, Howard H. | Rep. | Omaha |
|  | 3 | *Stefan, Karl | Rep. | Norfolk |
|  | 4 | *Miller, A. L. | Rep. | Kimball |
| Nev. |  | Russell, Charles H. | Rep. | Ely |
| N.H. | 1 | *Merrow, Chester E. | Rep. | Center Ossipee |

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[2] Vacancy caused by the resignation of Evan Howell, Oct. 5, 1947.

[3] Elected Nov. 4, 1947, to fill the vacancy caused by the death of Raymond S. Springer, Aug. 28, 1947.

[4] Vacancy caused by the resignation of Earle C. Clements, Jan. 6, 1948.

[5] Elected July 15, 1947, to fill the vacancy caused by the resignation of Thomas D'Alesandro, Jr., May 16, 1947.

[6] Elected Nov. 18, 1947, to fill the vacancy caused by the death of Charles L. Gifford, Aug. 23, 1947.

[7] Elected Aug. 26, 1947, to fill the vacancy caused by the death of Fred Bradley, May 24, 1947.

| State | Dist. | Name | Party | Residence |
|---|---|---|---|---|
| N.H. | 2 | Cotton, Norris | Rep. | Lebanon |
| N.J. | 1 | *Wolverton, Charles A. | Rep. | Merchantville |
| | 2 | *Hand, T. Millet | Rep. | Cape May City |
| | 3 | *Auchincloss, James C. | Rep. | Rumson |
| | 4 | *Mathews, Frank A., Jr. | Rep. | Riverton |
| | 5 | *Eaton, Charles A. | Rep. | Watchung |
| | 6 | *Case, Clifford P. | Rep. | Rahway |
| | 7 | *Thomas, J. Parnell | Rep. | Allendale |
| | 8 | *Canfield, Gordon | Rep. | Paterson |
| | 9 | *Towe, Harry L. | Rep. | Rutherford |
| | 10 | *Hartley, Fred A., Jr. | Rep. | Kearny |
| | 11 | *Sundstrom, Frank L. | Rep. | East Orange |
| | 12 | *Kean, Robert W. | Rep. | Livingston |
| | 13 | *Norton, Mary T. | Dem. | Jersey City |
| | 14 | *Hart, Edward J. | Dem. | Jersey City |
| N.M. | | *Fernandez, Antonio M. | Dem. | Santa Fe |
| | | Lusk, Georgia L. | Dem. | Santa Fe |
| N.Y. | 1 | Macy, W. Kingsland | Rep. | Islip |
| | 2 | *Hall, Leonard W. | Rep. | Oyster Bay |
| | 3 | *Latham, Henry J. | Rep. | Queens Village |
| | 4 | McMahon, Gregory | Rep. | Ozone Park |
| | 5 | Ross, Robert Tripp | Rep. | Jackson Heights |
| | 6 | Nodar, Robert, Jr. | Rep. | Maspeth |
| | 7 | *Delaney, John J. | Dem. | Brooklyn |
| | 8 | *Pfeifer, Joseph L. | Dem. | Brooklyn |
| | 9 | *Keogh, Eugene J. | Dem. | Brooklyn |
| | 10 | *Somers, Andrew L. | Dem. | Brooklyn |
| | 11 | *Heffernan, James J. | Dem. | Brooklyn |
| | 12 | *Rooney, John J. | Dem. | Brooklyn |
| | 13 | *O'Toole, Donald L. | Dem. | Brooklyn |
| | 14 | Multer, Abraham J.[8] | Dem. | Brooklyn |
| | 15 | *Celler, Emanuel | Dem. | Brooklyn |
| | 16 | *Buck, Ellsworth B. | Rep. | Staten Island |
| | 17 | Coudert, Frederic R., Jr. | Rep. | New York city |
| | 18 | *Marcantonio, Vito | Am. Labor | New York city |
| | 19 | Klein, Arthur G. | Dem. | New York city |
| | 20 | *Bloom, Sol | Dem. | New York city |
| | 21 | Javits, Jacob K. | Rep. | New York city |
| | 22 | *Powell, Adam C., Jr. | Dem. | New York city |
| | 23 | *Lynch, Walter A. | Dem. | New York city |
| | 24 | Vacancy[9] | | |
| | 25 | *Buckley, Charles A. | Dem. | New York city |
| | 26 | Potts, David M. | Rep. | New York city |
| | 27 | *Gwinn, Ralph W. | Rep. | Bronxville |
| | 28 | *Gamble, Ralph A. | Rep. | Larchmont |
| | 29 | St. George, Katharine | Rep. | Tuxedo Park |
| | 30 | *LeFevre, Jay | Rep. | New Paltz |
| | 31 | *Kearney, Bernard W. | Rep. | Gloversville |
| | 32 | *Byrne, William T. | Dem. | Loudonville |
| | 33 | *Taylor, Dean P. | Rep. | Troy |
| | 34 | *Kilburn, Clarence E. | Rep. | Malone |
| | 35 | *Fuller, Hadwen C. | Rep. | Parish |
| | 36 | Riehlman, R. Walter | Rep. | Tully |
| | 37 | *Hall, Edwin Arthur | Rep. | Binghamton |
| | 38 | *Taber, John | Rep. | Auburn |
| | 39 | *Cole, W. Sterling | Rep. | Bath |
| | 40 | Keating, Kenneth B. | Rep. | Rochester |
| | 41 | *Wadsworth, James W. | Rep. | Geneseo |
| | 42 | *Andrews, Walter G. | Rep. | Buffalo |
| | 43 | *Elsaesser, Edward J. | Rep. | Buffalo |
| | 44 | *Butler, John C. | Rep. | Buffalo |
| | 45 | *Reed, Daniel A. | Rep. | Dunkirk |
| N.C. | 1 | *Bonner, Herbert C. | Dem. | Washington |
| | 2 | *Kerr, John H. | Dem. | Warrenton |
| | 3 | *Barden, Graham A. | Dem. | New Bern |
| | 4 | *Cooley, Harold D. | Dem. | Nashville |
| | 5 | *Folger, John H. | Dem. | Mount Airy |
| | 6 | *Durham, Carl T. | Dem. | Chapel Hill |
| | 7 | *Clark, J. Bayard | Dem. | Fayetteville |
| | 8 | Deane, Charles B. | Dem. | Rockingham |
| | 9 | *Doughton, Robert L. | Dem. | Laurel Springs |
| | 10 | Jones, Hamilton C. | Dem. | Charlotte |
| | 11 | *Bulwinkle, Alfred L. | Dem. | Gastonia |
| | 12 | Redden, Monroe M. | Dem. | Hendersonville |
| N.D. | | *Lemke, William | Rep. | Fargo |
| | | *Robertson, Charles R. | Rep. | Bismarck |
| Ohio | 1 | *Elston, Charles H. | Rep. | Cincinnati |
| | 2 | *Hess, William E. | Rep. | Cincinnati |
| | 3 | Burke, Raymond H. | Rep. | Hamilton |
| | 4 | McCulloch, William M.[10] | Rep. | Piqua |
| | 5 | *Clevenger, Cliff | Rep. | Bryan |

| State | Dist. | Name | Party | Residence |
|---|---|---|---|---|
| Ohio | 6 | *McCowen, Edward O. | Rep. | Wheelersburg |
| | 7 | *Brown, Clarence J. | Rep. | Blanchester |
| | 8 | *Smith, Frederick C. | Rep. | Marion |
| | 9 | *Ramey, Homer A. | Rep. | Toledo |
| | 10 | *Jenkins, Thomas A. | Rep. | Ironton |
| | 11 | *Brehm, Walter E. | Rep. | Logan |
| | 12 | *Vorys, John M. | Rep. | Columbus |
| | 13 | *Weichel, Alvin F. | Rep. | Sandusky |
| | 14 | *Huber, Walter B. | Dem. | Akron |
| | 15 | *Griffiths, P. W. | Rep. | Marietta |
| | 16 | Carson, Henderson H. | Rep. | Canton |
| | 17 | *McGregor, J. Harry | Rep. | West Lafayette |
| | 18 | *Lewis, Earl R. | Rep. | St. Clairsville |
| | 19 | *Kirwan, Michael J. | Dem. | Youngstown |
| | 20 | *Feighan, Michael A. | Dem. | Cleveland |
| | 21 | *Crosser, Robert | Dem. | Cleveland |
| | 22 | *Bolton, Frances P. | Rep. | Lyndhurst |
| | | *Bender, George H. | Rep. | Cleveland Heig |
| Okla. | 1 | *Schwabe, George B. | Rep. | Tulsa |
| | 2 | *Stigler, William G. | Dem. | Stigler |
| | 3 | Albert, Carl | Dem. | McAlester |
| | 4 | Johnson, Glen D. | Dem. | Okemah |
| | 5 | *Monroney, A. S. Mike | Dem. | Oklahoma City |
| | 6 | Morris, Toby | Dem. | Lawton |
| | 7 | Peden, Preston E. | Dem. | Altus |
| | 8 | *Rizley, Ross | Rep. | Guymon |
| Ore. | 1 | Norblad, Walter | Rep. | Astoria |
| | 2 | *Stockman, Lowell | Rep. | Pendleton |
| | 3 | *Angell, Homer D. | Rep. | Portland |
| | 4 | *Ellsworth, Harris | Rep. | Roseburg |
| Penn. | 1 | Gallagher, James | Rep. | Philadelphia |
| | 2 | McGarvey, Robert N. | Rep. | Philadelphia |
| | 3 | Scott, Hardie | Rep. | Philadelphia |
| | 4 | Maloney, Franklin J. | Rep. | Philadelphia |
| | 5 | Sarbacher, George W., Jr. | Rep. | Philadelphia |
| | 6 | Scott, Hugh D., Jr. | Rep. | Philadelphia |
| | 7 | Chadwick, E. Wallace | Rep. | Moylan |
| | 8 | Lichtenwalter, Franklin H.[11] | Rep. | Allentown |
| | 9 | Dague, Paul B. | Rep. | Downingtown |
| | 10 | *Scoblick, James P. | Rep. | Archbald |
| | 11 | Jenkins, Mitchell | Rep. | Trucksville |
| | 12 | *Fenton, Ivor D. | Rep. | Mahanoy City |
| | 13 | Muhlenberg, Frederick A. | Rep. | Wernersville |
| | 14 | *Gillette, Wilson D. | Rep. | Towanda |
| | 15 | *Rich, Robert F. | Rep. | Woolrich |
| | 16 | *McConnell, Samuel K., Jr. | Rep. | Penn Wynne |
| | 17 | *Simpson, Richard M. | Rep. | Huntingdon |
| | 18 | *Kunkel, John C. | Rep. | Harrisburg |
| | 19 | *Gavin, Leon H. | Rep. | Oil City |
| | 20 | *Walter, Francis E. | Dem. | Easton |
| | 21 | *Gross, Chester H. | Rep. | Manchester (R.F |
| | 22 | Van Zandt, James E. | Rep. | Altoona |
| | 23 | Crow, William J. | Rep. | Uniontown |
| | 24 | *Morgan, Thomas E. | Dem. | Fredericktown |
| | 25 | *Graham, Louis E. | Rep. | Beaver |
| | 26 | *Tibbott, Harve | Rep. | Ebensburg |
| | 27 | *Kelley, Augustine B. | Dem. | Greensburg |
| | 28 | Kearns, Carroll D. | Rep. | Farrell |
| | 29 | McDowell, John | Rep. | Wilkinsburg |
| | 30 | *Corbett, Robert J. | Rep. | Bellevue |
| | 31 | *Fulton, James G. | Rep. | Dormont (Pittsb |
| | 32 | *Eberharter, Herman P. | Dem. | Pittsburgh |
| | 33 | *Buchanan, Frank | Dem. | McKeesport |
| R.I. | 1 | *Forand, Aime J. | Dem. | Cumberland |
| | 2 | *Fogarty, John E. | Dem. | Harmony |
| S.C. | 1 | *Rivers, L. Mendel | Dem. | Charleston |
| | 2 | *Riley, John J. | Dem. | Sumter |
| | 3 | Dorn, W. J. Bryan | Dem. | Greenwood |
| | 4 | *Bryson, Joseph R. | Dem. | Greenville |
| | 5 | *Richards, James P. | Dem. | Lancaster |
| | 6 | *McMillan, John L. | Dem. | Florence |
| S.D. | 1 | *Mundt, Karl E. | Rep. | Madison |
| | 2 | *Case, Francis | Rep. | Custer |
| Tenn. | 1 | Phillips, Dayton E. | Rep. | Elizabethton |
| | 2 | *Jennings, John E., Jr. | Rep. | Knoxville |
| | 3 | *Kefauver, Estes | Dem. | Chattanooga |
| | 4 | *Gore, Albert | Dem. | Carthage |
| | 5 | Evins, Joe L. | Dem. | Smithville |
| | 6 | *Priest, J. Percy | Dem. | Nashville |
| | 7 | *Courtney, Wirt | Dem. | Franklin |
| | 8 | *Murray, Tom | Dem. | Jackson |
| | 9 | *Cooper, Jere | Dem. | Dyersburg |
| | 10 | *Davis, Clifford | Dem. | Memphis |
| Texas | 1 | *Patman, Wright | Dem. | Texarkana |
| | 2 | *Combs, J. M. | Dem. | Beaumont |
| | 3 | *Beckworth, Lindley | Dem. | Gladewater (E |

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[8] Elected Nov. 4, 1947, to fill the vacancy caused by the resignation of Leo F. Rayfiel, Sept. 13, 1947.

[9] Vacancy caused by the resignation of Benjamin J. Rabin, Dec. 31, 1947.

[10] Elected Nov. 4, 1947, to fill the vacancy caused by the resignation of Robert F. Jones, Sept. 2, 1947.

[11] Elected Sept. 9, 1947, to fill the vacancy caused by the death of Charles L. Ge May 5, 1947.

| State | Dist. | Name | Party | Residence |
|---|---|---|---|---|
| Texas | 4 | *Rayburn, Sam | Dem. | Bonham |
| | 5 | Wilson, J. Frank | Dem. | Dallas |
| | 6 | *Teague, Olin E. | Dem. | College Station |
| | 7 | *Pickett, Tom | Dem. | Palestine |
| | 8 | *Thomas, Albert | Dem. | Houston |
| | 9 | Thompson, Clark W.[12] | Dem. | Galveston |
| | 10 | *Johnson, Lyndon B. | Dem. | Johnson City |
| | 11 | *Poage, William R. | Dem. | Waco |
| | 12 | Lucas, Wingate H. | Dem. | Grapevine |
| | 13 | *Gossett, Ed | Dem. | Wichita Falls |
| | 14 | *Lyle, John E. | Dem. | Corpus Christi |
| | 15 | *West, Milton H. | Dem. | Brownsville |
| | 16 | Regan, Ken[13] | Dem. | Midland |
| | 17 | Burleson, Omar | Dem. | Ansom |
| | 18 | *Worley, Eugene | Dem. | Shamrock |
| | 19 | *Mahon, George H. | Dem. | Colorado City |
| | 20 | *Kilday, Paul J. | Dem. | San Antonio |
| | 21 | *Fisher, O. C. | Dem. | San Angelo |
| Utah | 1 | *Granger, Walter K. | Dem. | Cedar City |
| | 2 | Dawson, William A. | Rep. | Layton |
| Vt. | | *Plumley, Charles A. | Rep. | Northfield |
| Va. | 1 | *Bland, Schuyler Otis | Dem. | Newport News |
| | 2 | Hardy, Porter, Jr. | Dem. | Norfolk |
| | 3 | *Gary, J. Vaughan | Dem. | Richmond |
| | 4 | Vacancy[14] | | |
| | 5 | *Stanley, Thomas B. | Dem. | Stanleytown |
| | 6 | *Almond, J. Lindsay, Jr. | Dem. | Roanoke |
| | 7 | *Harrison, Burr P. | Dem. | Winchester |
| | 8 | *Smith, Howard W. | Dem. | Alexandria |
| | 9 | *Flannagan, John W., Jr. | Dem. | Bristol |
| Wash. | 1 | Jones, Homer R. | Rep. | Bremerton |
| | 2 | *Jackson, Henry M. | Dem. | Everett |
| | 3 | Mack, Russell V.[15] | Rep. | Hoquiam |
| | 4 | *Holmes, Hal | Rep. | Ellensburg |
| | 5 | *Horan, Walter F. | Rep. | Wenatchee |
| | 6 | Tollefson, Thor C. | Rep. | Tacoma |
| W.Va. | 1 | Love, Francis J. | Rep. | Wheeling |
| | 2 | Snyder, Melvin C. | Rep. | Kingwood |
| | 3 | Rohrbough, Edward G. | Rep. | Glenville |
| | 4 | *Ellis, Hubert S. | Rep. | Huntington |
| | 5 | *Kee, John | Dem. | Bluefield |
| | 6 | *Hedrick, E. H. | Dem. | Beckley |
| Wis. | 1 | *Smith, Lawrence H. | Rep. | Racine |
| | 2 | Davis, Glenn R.[16] | Rep. | Waukesha |
| | 3 | *Stevenson, William H. | Rep. | La Crosse |
| | 4 | Brophy, John C. | Rep. | Milwaukee |
| | 5 | Kersten, Charles J. | Rep. | Milwaukee |
| | 6 | *Keefe, Frank B. | Rep. | Oshkosh |
| | 7 | *Murray, Reid F. | Rep. | Ogdensburg |
| | 8 | *Byrnes, John W. | Rep. | Green Bay |
| | 9 | *Hull, Merlin | Rep. | Black River Falls |
| | 10 | *O'Konski, Alvin E. | Rep. | Mercer |
| Wyo. | | *Barrett, Frank A. | Rep. | Lusk |

[12] Elected Aug. 23, 1947, to fill the vacancy caused by the death of Joseph J. Mansfield, July 12, 1947.

[13] Elected Aug. 23, 1947, to fill the vacancy caused by the resignation of R. Ewing Thomason, July 31, 1947.

[14] Vacancy caused by the death of Patrick H. Drewry, Dec. 21, 1947.

[15] Elected June 6, 1947, to fill the vacancy caused by the death of Fred Norman, April 18, 1947.

[16] Elected April 22, 1947, to fill the vacancy caused by the death of Robert K. Henry, Nov. 20, 1946.

## Congress of Industrial Organizations.

During 1947 every union affiliated with the Congress of Industrial Organizations (C.I.O.), with but one exception, reported an increase in membership. Added gains to the total membership of 6,238,000 were achieved through the formation of the Telephone Workers Organizing committee. A number of the formerly independent unions affiliated with the committee. The one union that did not report a gain in membership was the Industrial Union of Marine and Shipbuilding Workers, which was confronted with a decrease in ship construction.

During the year, the C.I.O. continued its basic drive to organize the unorganized workers, notably in the south. Wholly apart from the efforts of the national C.I.O. organizing drive, the major C.I.O. unions threw increased forces of organizers into the southern states in co-operation with the national organization. The ninth constitutional convention held in Boston, Mass., in Oct. 1947 pledged increased financial and moral support to the drive.

Another issue brought strongly to the fore during the year was that of the guaranteed annual wage, as the basis for full employment and full consumption.

An outstanding event in the history of the organization was the appearance on the Boston convention speaking program of Secretary of State George C. Marshall. It was the first time in history that any U.S. secretary of state had addressed a major labour organization. Secretary Marshall in his address gave added emphasis to the necessity of aiding nations stricken by the war to reconstruct their economies and become self-supporting. Following the secretary's address, the C.I.O. unanimously adopted a foreign policy resolution that contained in essence the principles stated by Secretary Marshall. The resolution was given unanimous support by the convention delegates.

During the year the C.I.O. continued to expand its relationships with the labour movements of other countries through steady participation in affairs of the World Federation of Trade Unions. A full delegation of C.I.O. representatives was sent to the W.F.T.U. general council meeting held in Prague, Czechoslovakia, in June. The Boston convention authorized the national officers to continue full participation in the W.F.T.U. During the year added recognition of organized labour was obtained from the Economic and Social council of the United Nations.

LONGSHOREMEN of the A.F. of L. made idle in New York city as they struck in sympathy with C.I.O. maritime unions during the latter's 4-day national work stoppage based on the "no contract, no work" policy in June 1947

National C.I.O. headquarters were at 718 Jackson place, N.W., Washington 6, D.C. National officers were Philip Murray, president; James B. Carey, secretary-treasurer.

(*See* also AMERICAN FEDERATION OF LABOR; LABOUR UNIONS; STRIKES AND LOCK-OUTS; UNITED STATES.)

(P. MY.)

## Connally, Tom (Thomas Terry)

(1877–    ), U.S. statesman, was born Aug. 19, in McLennan county, Texas. Connally was graduated from Baylor university (1896) and from the University of Texas (1898) with an LL.B. degree. He served with the army in the Spanish-American War and World War I. Elected to the senate in 1928, after having served in the house of representatives, Connally later was only lukewarm in support of President Franklin D. Roosevelt's domestic measures, although he gave wholehearted backing to the administration's foreign policy. He was one of the U.S. delegates to the United Nations conference in San Francisco in 1945 and a member of U.S. delegations to the U.N. general assembly through 1946.

Connally was re-elected to the senate in Nov. 1946, but the Republican sweep of both houses of congress deprived him of much of his former influence. One of the stanchest backers of President Harry S. Truman's foreign policy, he helped push through many important issues in the senate; he joined forces with Sen. Arthur H. Vandenberg of Michigan to secure senate ratification of the Italian, Hungarian, Rumanian and Bulgarian peace pacts on June 5, 1947. The following month, he was omitted from the U.S. delegation to the U.N. at his own request.

## Connecticut.

Next to the smallest of the New England states and third smallest of all the states, Connecticut is variously known as the "Nutmeg state," "Constitution state" or the "Land of Steady Habits." It is one of the 13 original states. Its area is 5,009 sq.mi. including 110 sq.mi. of water. The population, according to the 1940 census, was 1,709,242, but semiofficial estimates for July 1, 1947, increased these figures to 2,042,000, a gain of 19.4%. Semiofficial population figures for large cities are: Hartford (capital) 184,000; New Haven, 160,605; Bridgeport, 147,478; Waterbury, 99,314; New Britain, 69,035; and Stamford, 64,096.

**History.**—The regular biennial session of the general assembly was held from Jan. 8, 1947, to June 3, 1947, inclusive. The Republican party had substantial majorities in both the senate and the house. Much important legislation was enacted. After the state supreme court had passed upon its constitutionality, a veterans' bonus act was passed, granting veterans of World War II a cash bonus of $10 for each month in service with a maximum of $300. A ten-year bond issue of $50,000,000 was authorized to defray the cost. An act imposing a temporary general sales and use tax of 3%, effective July 1, 1947, and ending June 30, 1951, was passed. State aid to towns for the purpose of meeting costs of education was increased from $2,700,000 to $20,500,000, and the allocation thereof was prescribed. The gasoline tax was increased from 3 cents per gallon to 4 cents; the cigarette tax was increased from 2 cents per package of 20 cigarettes to 3 cents with one-third of this tax to be allocated to the Soldiers', Sailors' and Marines' fund. The corporation business tax was increased from 2% to 3%, but the old-age assistance tax of $3 was abolished.

The banking laws were codified and, for the purposes of the negotiable instruments law, Saturday was made a legal holiday, so that banks could close on that day. A Fair Employment Practices act was enacted giving the Interracial commission authority to investigate alleged discriminations in hiring or promotions because of race, colour, creed, national origin or ancestry of an individual. The maximum of unemployment pensation benefit was increased from $22 per week to $24, the maximum number of weeks from 20 to 22; the depend allowance was increased from $2 to $3 weekly with a maxi of $12. The maximum monthly old-age assistance award made $45 instead of $40.

Altogether the general assembly authorized expenditure nearly $300,000,000 (including bond issues) for the bienniu

The elective state officers for 1948 were: governor, Jame McConaughy (Rep.); lieutenant governor, James C. Sha (Rep.); secretary of state, Mrs. Frances B. Redick (Re treasurer, Joseph A. Adorno (Rep.); comptroller, Fre Zeller (Rep.); attorney general, William C. Hadden (Rep.

**Education.**—Total enrolment in public day schools for the year 194 was 261,185 divided as follows in 894 public schools: kindergarten elementary schools, boys 92,456, girls 85,201; junior high schools, 8,623, girls 8,385; high schools, boys 30,906, girls 35,614. The current expenses of all these schools was $36,324,127, apportic kindergarten and elementary $21,102,799; junior high $3,123,548 high $12,097,780.

**Social Insurance and Assistance, Public Welfare and Related Progra** The state public welfare department reported that the total numb people receiving some type of public assistance in June 1947 was 4 as compared with 44,729 in June 1946, a gain of 6.2%, while the of such assistance in June 1947 was $1,849,437 as against $1,511,67 increase of 22.3%. Types and numbers of persons receiving reli June were: general local relief 11,035, old-age assistance 14,991, in institutions 6,500, dependent children 9,997, county wards 3,265, wards, 1,901, blind 205.

**Communications.**—For the first ten months of 1946 the commiss of motor vehicles reported a total of 542,194 motor vehicles regis and 618,683 operators' licences issued including 72,216 free licenc ex-service men. Although no figures for highway construction available, more than 20 contracts for new construction had bee including the last link in the Wilbur Cross highway on which work being concentrated.

There were 12 broadcasting stations in the state, an increase of over 1945. There were 107 newspapers and periodicals being publi The state was served by 3 railway companies and 1 street railway pany, 48 bus companies and 111 taxicab companies. There were 50 telephone outlets compared with 468,177 in 1945.

**Banking and Finance.**—The report of the treasurer for the fiscal ending June 30, 1947, reveals the following: cash balance July 1, $23,644,510.39; total receipts year ended June 30, 1947, $176,248,92 total $199,893,433.45; disbursements $180,298,571.40; cash ba June 30, 1947, $19,594,862.05. The Postwar Purposes fund at that was $12,282,417.71. The state bonded debt was $28,183,000, ag which there was a bond retirement fund of $13,736,164.94.

The bank commissioner reported that as of Sept. 30, 1947, th mutual savings banks of the state had total assets of $1,418,201, 62 state banks and trust companies had total assets of $784,069. 32 building and loan associations had total assets of $50,074,706 national banks as of June 30, 1947, had total assets of $743,769,0

**Agriculture.**—The bureau of agricultural economics reported tha total farm income for 1946 was $126,475,000 as compared with $ 966,000 for 1945. The former figure was made up of $49,514,000 crops and $76,961,000 from livestock and livestock products.

*Leading Agricultural Products of Connecticut, 1945 and 1946*

| Product | 1945 | 1 |
|---|---|---|
| Apples | $2,651,000 | $3,90 |
| Truck Crops | 5,558,000 | 4,37 |
| Potatoes | 5,346,000 | 5,60 |
| Tobacco | 22,725,000 | 25,66 |
| Dairy products, including cattle and calves | 33,751,000 | 37,32 |
| Poultry, including eggs | 37,064,000 | 37,55 |

**Manufacturing.**—The state commissioner of labour reported that a Oct. 1947, there were 664,600 workers (including 286,300 women) ployed in private nonagricultural industries and that unemployment dropped to the lowest level after World War II. There were only 2 unemployed, including 4,400 World War II veterans and 8,100 wo A shortage of steel was hampering the expansion of manufacturin dustries, but there were only seven labour disputes in progress invo a total of 850 workers.

(J. B

**Conscientious Objectors:** *see* PACIFISM.

**Conscription:** *see* SELECTIVE SERVICE.

**Conservation, Soil:** *see* SOIL EROSION AND SOIL CONSE TION.

**Conservative Party, Great Britain:** *see* POLITICAL TIES, BRITISH.

## Consumer Credit.

The important economic factor of sumer credit in the U.S. was part controlled by the government for the major part of 1947, was completely freed as of Nov. 1. Starting in January, total consumer credit outstanding was $10,024,000,000.

federal reserve system estimated that at the end of 1947 the total consumer credit outstanding exceeded $13,300,000,000, an increase of approximately $3,000,000,000 in 12 months.

Continuing their postwar program started in 1946 to secure new credit customers, many retail firms increased the tempo of their solicitation of charge-account business. Those offering 30-day consumer credit charge accounts as well as instalment credit sellers competed for this business.

Early in the year, leading retailers throughout the nation contemplated adhering closely to consumer credit terms laid down in Regulation W, the wartime measure controlling extension and use of such credit. However, pointed legal opinions from the U.S. department of justice, confirmed by outstanding attorneys throughout the country, emphasized the danger of concerted action of retailers to establish local community credit control policies.

More retail firms, even mail-order houses, expanded their service in the consumer credit field. Banks and finance companies not only increased their solicitation of personal loans but of consumer loans, financing directly with the consumer. They expanded credit service to retailers, offering to finance all such sales, absorbing investigation and contractual arrangement expense. While small and medium-sized retailers accepted their fairly new plan of financing, it marked a new departure generally in transferring the credit relationship between the customer and firm to an independent financing agent.

Generally, individual retail firms announced plans for retaining a majority of consumer credit terms effective under Regulation W. Almost immediately after control was terminated on Nov. 1, however, some retailers announced that they had lowered down-payment requirements from 33⅓% to 10% and had extended the over-all payment period from 15 to 24 months. This action was viewed with alarm by more conservative credit granters.

Railroads and travel services began a broad solicitation of use of their facilities on a credit basis. The major air lines also expanded their offers of business and social trips on a credit basis. Practically every form of luxury was being promoted on "easy terms." Banks continued to occupy a key position in the consumer credit field in lending money directly to consumers or finance companies and to business for financing consumer accounts receivable. Some of the larger cash chain retail firms established credit departments during 1947.

Reports from the credit bureaus of the country indicated that a larger percentage of families were becoming overburdened with too many obligations. Although not yet alarming, this trend was of particular importance in view of the high income tax rate, the abnormally high cost of living and the fact that credit reports to retailers indicated that more persons were having difficulty meeting payments. An analysis of the credit records of many consumers indicated that the obligations of families were quite diversified. They included all types of retailing, medical, personal loan and banking debts. The significance of the overburdened condition of these families was given considerably more thought by retailers, credit executives and credit bureau managers as the year closed. While government considered the advisability of re-establishing credit controls to help limit inflation and curtail overextension of consumer credit, business was about equally divided on the subject.

Various trade associations expressed the belief that consumer credit in 1947 did not materially influence inflation. A poll of members of the American Bankers association indicated that instalment lenders were holding a conservative line at the end of 1947 by requiring down payments of 33⅓% on new and used cars.

The Institute of Life Insurance indicated that at the end of 1947 the average U.S. wage earner owed approximately $750. The federal reserve board stated that 12,500,000 families spent more than they earned in 1947. The increase in production of semidurable and durable goods materially enlarged credit demand, a fact noted in all types of retailing. The rather sharp drop in collection turnover evidenced during the last half of 1947 by representative firms in cities in all population brackets caused some concern generally throughout all of North America. This trend toward slow payment of charge accounts indicated that some families were becoming overburdened with debt. More people were finding their savings exhausted, making necessary the use of consumer credit to help finance general living and current operating expenses. (H. A. We.)

**Great Britain.**—During World War II, the general increase of purchasing power, combined with the curtailed supply of consumer goods, especially durable goods, resulted in a much reduced demand for consumer credit facilities of all types. This tendency persisted during the immediate postwar period, despite an expanded supply of goods, largely because of the availability of wartime savings and ex-service gratuities. By 1947 there were signs of a revived demand for consumer credit facilities, but still much below the prewar volume.

Schemes of price control for practically all consumer goods, imposed during the war years and continued during the postwar period, were accompanied by restrictions on the charges additional to maximum cash prices which might be made for credit facilities of all kinds. These restrictions were codified during 1947 in the Hire-Purchase and Credit Sale Agreements (Maximum Prices and Charges) order. Certain goods were exempted from this control: bicycles and motorcycles; radios, phonographs and musical instruments; sewing machines, water softeners, refrigerators and other domestic appliances; deaf aids; hand tool kits; bakery machinery, cash registers and office machinery, hair-waving and drying machines. No restrictions were imposed on charges for the supply of the foregoing goods on credit terms, but such charges were prohibited in relation to all other price-controlled goods except those for long-term and short-term credit respectively which were specified in the order.

Charges for long-term credit, including hire-purchase, were permitted for furniture, carpets, linoleum, mattresses and perambulators on terms similar to those operating during the latter part of the war. The initial payment had to be not less than one-eighth of the maximum cash prices for the goods, and the balance was payable by at least nine instalments spread over not less than nine months nor more than two years. If these and certain supplementary conditions were fulfilled, but not otherwise, the balance referred to might be increased by 12½% for payment within 12 months, 15% for payment within 15 months, or 20% for payment within 2 years.

Additions to maximum cash prices in respect of short-term credit facilities were prohibited under wartime price control until the 1947 order. The latter provided that, if an initial payment was made amounting to at least one-eighth of the maximum cash prices and the balance was payable by instalments spread over from four to eight months, but not otherwise, 3¾% might be added to this balance. The foregoing applied where credit was provided by the supplier of the goods. The 1947 order itself did not make similar provision for "check" trading under which the credit was provided and instalments collected by enterprises not themselves supplying the goods.

Another significant change in this field, introduced during World War II, was the imposition of measures which in effect eliminated the right of repossessing goods supplied on hire-purchase agreements unless authorized by a court order.

(D. Bar.)

**Canada.**—Removal of wartime credit controls on Jan. 13, 1947, was greeted by business with mixed reactions. By October Canadian retailers noted that instalment buying business had jumped 43% in the first six months of 1947, while monthly repossessions were greater than during 1945 and 1946. The end of war veterans' rehabilitation credits, lower "family group" income because women had returned to homes from industrial jobs, and increasing supplies of consumer goods were factors in stimulating the demand for consumer credit. While 1947 down payments on appliances ran as low as 10% (during the control period one-third down payment was required), the minimum down payment on a new automobile was 30%.

With the lifting of federal controls, British Columbia and Saskatchewan passed enabling legislation to regulate consumer credit, but by the end of 1947 it had not been implemented. Quebec, however, passed specific legislation providing minimum payment of 15% down and specifying 6 months to pay when the sale was less than $50 and up to 24 months if $800, ceiling for the legislation. It became effective Aug. 15. (C. Cy.)

## Contract Bridge.

The popularity of contract bridge continued to increase in 1947, although the principal analysts and teachers of the game expected the upward trend to pause for a levelling-off period. The original contract bridge fad, which began in 1929, reached a peak in 1932, then gradually declined year by year until 1940. Then in 1941 the game suddenly became more popular than ever before. Each succeeding year saw another increase in the sales of bridge instruction books and playing cards, and in attendance at bridge tournaments. A poll taken by the American Institute of Public Opinion late in 1947 showed bridge to be the favourite card game of people of the U.S.,—especially those with high school education or better.

The principal tournament winners of 1947 in the championship contests of the American Contract Bridge league were: Charles J. Solomon of Philadelphia, Pa., masters' individual champion; Allen Harvey of Louisville, Ky., and Frank Weisbach of New York city, masters' pair champions; Waldemar von Zedtwitz, Lee Hazen, B. Jay Becker and Mrs. Helen Sobel of New York city and Charles H. Goren of Philadelphia, masters' team-of-four champions. (A "team of four" often has five members, so that each may have an occasional rest period.) Goren won the trophy awarded annually by William E. McKenney to the player with the best tournament record of the year.

At the end of 1947 McKenney retired as executive secretary of the American Contract Bridge league, and was elected honorary secretary by the members. He had been active in the league for 20 years, in which time its membership had grown from a few hundred to nearly 20,000.

There was no international competition with Europe, but early in the year a team composed of Mrs. Sobel and Goren, Becker and Sidney Silodor of Philadelphia, visited Brazil and played nine matches against teams in Rio de Janeiro and São Paulo. The U.S. team won all the matches. A proposed match between U.S. and British teams for the Charles M. Schwab international trophy was not played.

In bridge rules, and in methods of bidding and play, there was little development during the year. The lawmaking committees met regularly, with a view to replacing the 1943 U.S. laws and the 1935 international code used by British and European players with a 1948 international code to be issued late in the year. The Culbertson system of bidding had not been changed after 1941.

New trends included the variant (short contract) in which one plays four deals and then changes partners, instead of scoring by rubbers. On the first deal, neither side is vulnerable; the second and third deals, dealer's side only is vulnerable; the last deal, both sides are vulnerable. A deal passed out redealt by the same dealer. For making game, in one or mo deals, a side receives a bonus of 300 if not vulnerable and 500 vulnerable. A side making a part score on the fourth deal ceives a bonus of 100. Other scoring is as in regular bridg Oswald Jacoby was one of several authorities who express the opinion that this form of scoring would eventually repla rubber scoring. It was possible that elimination of the rubb which dated from 1683 or before, would be the next princip development in the history of a game that had progress from 16th-century *triomphe* (trump) through whist, brid whist and auction bridge. (E. Cul.; A. H. Md.)

**Great Britain and Europe.**—The increasing popularity the game during 1947 was evident from the fact that more th 900 teams competed in a new contest organized by the *Lond Sunday Times,* while 300 teams competed weekly in Glasgo Scotland, in regional league events.

In January an English team consisting of Ewart Kemps (captain), Graham Mathieson, Kenneth Konstam, L. Dodds a Edward Rayne paid a goodwill visit to Egypt and defeated t all-Egypt team.

In May the British Bridge league sent a team to Icela consisting of Harrison Gray (captain), S. J. Simon, Kempso J. O. Hastie and Jack Marx. The Icelandic players, with o local experience, deservedly won the first match but lost t remaining six matches.

In July an English team consisting of G. G. J. Walshe (ca tain), Konstam, Rayne, Mrs. Fleming and Mrs. Marcus w the international contest at Deauville, France.

(E. Kn.)

## Co-operative Movement.

Taxation of U.S. co-operativ became a lively issue in 19 with hearings before the house small business and ways a means committees to determine whether the groups had in fa escaped their fair share of federal income taxes. In a numb of state legislatures—Kansas, Wisconsin, Maryland, No Carolina, Ohio, Missouri, North Dakota—bills were introduc adversely affecting co-operatives. Some were based on t assumption that co-operatives were escaping tax obligations, b others had nothing to do with taxes.

Farm marketing and purchasing co-operatives were the pr cipal target of the attacks, especially the Farmers Union Gra Terminal association, Consumers Co-operative Association Kansas City with a network of oil wells, refineries and pipe lin and the Ohio Farm Bureau Co-operative association, with f tilizer plants and three insurance companies.

Rural electrical co-ops suffered through attacks on the app priations of the Rural Electric administration, and th were attempts to liquidate the 13 national banks for operatives.

Co-operative leaders called to testify on the subject concec that federal statute permitted farm co-operatives to qualify exemption from federal income tax by meeting certain requi ments, conceded that about 50% of farm co-operatives qualifi under the statute and paid no federal income tax but argued t the restrictions were so stringent that qualifying co-ops wo be truly nonprofit.

With respect to trading surpluses, they explained the tra tional co-operative business procedure: co-ops commonly cha the same retail price as competitors, return surplus money members at the end of the year in the form of rebates patronage refunds. The money returned to members on th dealings is not profit to the co-operative, co-op leaders argu but savings on the members' purchases. Surplus accumulated on business with nonmembers was recognized as profit to the co-operative and uniformly taxed as income.

The other significant development in 1947 was the increased interest of labour unions in consumer co-operation. The rising cost of living set union members and officers to looking for methods of holding prices down. In July the American Federation of Labor announced its conclusion that competition was not effective in lowering prices; manufacturers, it asserted, were cutting back production rather than lowering prices, thus controverting the theory on which abandonment of price controls had been based. The federation urged its members to join co-ops and help organize new ones.

Meanwhile, the United Automobile Workers (C.I.O.) was encouraging the organizations of co-operatives in various Michigan cities—Detroit, Pontiac, Lansing, Flint. Several co-op organizers were hired in Michigan, and in each city other community groups were invited to take part. Shares were sold, co-op-labelled merchandise was sampled and the slow process of organization was well under way by Labor day.

In September, however, new increases in food prices made union members impatient for immediate action. Spontaneously, in a number of union locals, plans were announced for direct distribution of groceries through union purchasing from wholesalers and nonprofit distribution to members. During September and October, projects of this kind were announced by a wide variety of U.S. unions.

Co-op leaders were aware that this sort of union program in itself offered little of permanent value but might be converted into a genuine co-operative program, giving the urban co-operatives strength they had long lacked in the United States. Consultations between union and co-op officers resulted in plans for converting the union food-distribution efforts into co-op stores; co-op shares were sold along with food, and community-wide membership campaigns were intensified.

Membership of farm marketing co-ops was estimated at 3,500,000, rural electrical co-ops at 2,000,000, credit unions 3,000,000, consumer co-ops (the majority farm purchasing co-ops organized on consumer principles) 1,500,000. (*See* also TAXATION.) (R. Gs.)

**Copper.** The production of copper in the major producing countries for the years 1941–46, and the estimated world total, is shown in Table I.

After reaching a peak in 1942 and 1943, world production sagged 7% in 1944, 12% in 1945, and 15% in 1946, to an estimated 2,050,000 short tons, the smallest output reported since 1936. Although Northern Rhodesia showed a drop of only 6%, all of the other major producers had declines in the vicinity of 20%.

**United States.**—The more important features of the copper industry in the United States are presented below in Table II, while the mine output by states is shown in Table III.

Continued demand after the close of World War II kept copper consumption at only a little below the war rate, while production dropped steadily, and in 1946 was 44% below the 1943 peak. Much of the 1946 decline resulted from difficulties connected with labour and reconversion, many of which were national in extent, rather than inherent to the copper industry itself.

The production rate improved materially in 1947, with a mine total of 712,054 short tons through Oct., against 608,737 tons in the full year 1946.

**Canada.**—Primary copper output declined from 237,457 short tons in 1945 to 183,968 tons in 1946, but revived to 225,294 tons in 1947.

**Chile.**—Demand from the United States pushed the copper output from 398,000 short tons in 1946 to 305,700 tons in the first eight months of 1947.

**Northern Rhodesia.**—Production was 204,500 short tons in 1946 and 138,800 tons in the first eight months of 1947. (*See* also MINERAL AND METAL PRODUCTION AND PRICES; STRATEGIC MINERAL SUPPLIES.) (G. A. Ro.)

**Copra:** *see* COCONUTS.

**Copyright.** Interest in the field of copyright during 1947 centred on three aspects: international copyright problems, new legislation affecting copyright and the reaching of an all-time high in registrations.

Highlighting the field of international copyright was the transmittal to the senate on July 17, 1947, by the president of the United States, of the Inter-American Convention on the Rights of the Author in Literary, Scientific and Artistic Works, with a

Table I.—*World Production of Copper, 1941-46*

(Thousands of short tons)

| | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|
| Belgian Congo | 178.8 | 182.9 | 173.0 | 182.4 | 176.6 | 158.6 |
| Canada | 321.7 | 301.8 | 287.6 | 273.5 | 237.4 | 183.9 |
| Chile | 513.1 | 539.2 | 561.5 | 549.2 | 518.2 | 492.1 |
| Mexico | 53.7 | 56.7 | 54.9 | 45.4 | 8.0 | 67.4 |
| Peru | 40.6 | 38.9 | 36.8 | 35.6 | 5.2 | 27.1 |
| No. Rhodesia | 270.7 | 280.7 | 281.0 | 247.2 | 217.4 | 204.5 |
| U.S.S.R. | ? | 176 | 143 | 143 | 176 | ? |
| United States | 958.1 | 1,080.1 | 1,090.8 | 972.5 | 772.9 | 608.7 |
| Total | 2,860 | 2,980 | 2,980 | 2,760 | 2,420 | 2,050 |

Table II.—*Data of Copper Industry in the U.S., 1941–46*

(Thousands of short tons)

| | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|
| Mine output | 958.1 | 1,080.1 | 1,090.8 | 972.5 | 772.9 | 608.7 |
| Smelter output | 966.1 | 1,088.0 | 1,092.9 | 1,003.4 | 782.7 | 599.7 |
| Refinery output | 1,395.3 | 1,414.6 | 1,379.3 | 1,221.2 | 1,108.6 | 878.7 |
| Domestic ore | 975.4 | 1,064.8 | 1,082.1 | 973.9 | 775.7 | 578.4 |
| Foreign ore | 419.9 | 349.8 | 297.2 | 247.3 | 332.9 | 300.2 |
| Secondary recovery | 726.4 | 927.8 | 1,086.0 | 950.9 | 1,006.5 | 803.5 |
| From old scrap | 412.7 | 427.1 | 427.5 | 456.7 | 497.1 | 406.5 |
| From new scrap | 313.7 | 500.6 | 658.5 | 494.2 | 509.4 | 397.1 |
| Imports | 735.5 | 764.4 | 716.7 | 785.4 | 853.2 | 393.3 |
| Refined | 347.0 | 401.4 | 402.8 | 492.4 | 531.4 | 154.4 |
| Exports | 158.9 | 210.5 | 294.5 | 237.5 | 132.6 | 97.5 |
| Available for use* | 1,996.1 | 2,032.6 | 1,915.1 | 1,932.8 | 2,004.5 | 1,342.1 |

*Available for use includes total refinery output, secondary from old scrap, and refined imports less exports; secondary from new scrap is only a turnover of metal in process and does not add to the supply available for use, and other imports have been covered in refined output from foreign ores.

Table III.—*Mine Production of Copper in U.S., 1941–46*

(Thousands of short tons)

| | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|
| Arizona | 326.3 | 393.4 | 403.2 | 358.3 | 287.2 | 289.2 |
| California | 3.9 | 1.1 | 8.8 | 12.7 | 6.5 | 4.2 |
| Colorado | 6.7 | 1.1 | 1.0 | 1.0 | 1.5 | 1.8 |
| Idaho | 3.6 | 3.4 | 2.3 | 1.7 | 1.5 | 1.0 |
| Michigan | 46.4 | 45.7 | 46.8 | 42.4 | 30.4 | 21.7 |
| Missouri | 1.4 | 1.3 | 1.3 | 3.3 | 3.4 | 1.9 |
| Montana | 128.0 | 141.2 | 134.5 | 118.2 | 88.5 | 58.5 |
| Nevada | 78.9 | 83.7 | 71.1 | 61.2 | 52.6 | 48.6 |
| New Mexico | 73.5 | 80.1 | 76.2 | 69.7 | 56.6 | 50.2 |
| Utah | 266.8 | 306.7 | 324.0 | 282.6 | 226.4 | 114.3 |
| Washington | 8.7 | 8.0 | 7.3 | 6.2 | 5.8 | 4.5 |
| Others | 13.7 | 14.4 | 14.4 | 15.2 | 12.5 | 12.8 |
| Total | 958.1 | 1,080.1 | 1,090.8 | 972.5 | 772.9 | 608.7 |

favourable recommendation for ratification.

Presidential proclamations were issued extending indefinitely the time for securing ad interim copyright and renewal of copyright by nationals and citizens of France and New Zealand. The proclamation for France was dated March 27, 1947, and for New Zealand, April 24, 1947.

A number of peace treaties containing clauses on copyright, and keeping in force or reviving copyright arrangements in effect with several foreign countries prior to World War II, were under consideration. The United Nations Educational, Scientific, and Cultural Organization had included copyright as one of the subjects coming within the scope of its activities.

On July 30, 1947, Title 17 of the U.S. code, "Copyright," became public law 281. This act codifies the existing law without substantive change. New legislation on copyright was introduced in congress covering textile fabrics design (H.R. 2860), acoustic recordings (H.R. 1270), coin operated machines (H.R. 1269 and H.R. 2570), and increasing fees in connection with copyright registration (H.R. 4052), but final action was not taken during 1947.

Copyright registrations during fiscal 1947 reached an all time high of 230,215, a 14% increase over fiscal 1946, the previous year of highest registrations. Domestic books, pamphlets, musical compositions, periodicals and newspapers, and commercial prints and labels accounted for 82% of the increase. It was believed that both domestic and foreign registrations had not yet reached their normal peacetime volume due to continued paper shortages and disturbed conditions abroad. The desire to maintain copyright protection after the original 28-year registration period expires had increased to the point where more than 13,000 renewal registrations were made during fiscal 1947.

(A. FI.)

## Cori, Carl Ferdinand

(1896– ), U.S. biochemist, was born on Dec. 5 in Prague (then in Austria-Hungary), son of a zoology professor. In 1914, he entered the German university at Prague where he met Gerty Theresa Radnitz. They studied chemistry in the same class and were married a few months after they were graduated together in 1920 with M.D. degrees.

Emigrating to the U.S. in 1922 (they became naturalized citizens in 1928), the Coris gave up medicine to work in biochemical research. Carl Cori was associated with the New York State Institute for the Study of Malignant Diseases in Buffalo, N.Y., from 1922–31 when they left for St. Louis, Mo., where Carl Cori joined the Washington University School of Medicine as professor of pharmacology and biochemistry.

At Washington university, the Coris collaborated in a study of the conversion of carbohydrates and starch in the human body into blood and tissue substances, winning numerous awards from national scientific societies.

On Oct. 23, 1947, the Nobel committee in Stockholm announced that the Nobel prize in medicine was awarded jointly to the Coris and to Bernardo A. Houssay, Argentine scientist. The citation to the Coris said their award was "for the discovery of the process in the catalytic metabolism of the glycogen" of animal starch.

## Cori, Gerty Theresa

(1896– ), U.S. biochemist, was born on Aug. 15 in Prague (then in Austria-Hungary). She studied at the German university in Prague, where she met Carl Cori, and shortly after graduating in 1920 with an M.D. degree, she married him.

Mrs. Cori was an assistant in the Children's hospital in Vienna from 1920–22 when she emigrated with her husband to the U.S. From 1922–25, she was an assistant pathologist and from 1925–31 an assistant biochemist at the New York S Institute for the Study of Malignant Diseases in Buffalo.

In 1931, the Coris were given simultaneous appointments the Washington University School of Medicine in St. Lo Mo., with Mrs. Cori serving as fellow and research associat pharmacology and biochemistry; she became full research p fessor in biochemistry in 1947.

Carl and Gerty Cori jointly shared the Nobel prize for me cine in 1947 with Bernardo A. Houssay of Argentina. The C were the third husband-and-wife team to share a Nobel scie award; the others were Pierre and Marie Curie (1903) Frédéric and Irène Joliot-Curie (1935).

## Corn

(MAIZE). The corn crop of the United States decline 1947 in acreage, yield and total production. The t crop was estimated at 2,400,952,000 bu., compared with 3,2 950,000 bu. in 1946 and an average of 2,639,100,000 bu. 1936–45. Unfavourable weather delayed planting, although a age was within 2% of the amount farmers had declared they tended to plant—83,981,000 ac. compared with 88,489,000 harvested in 1946 and 90,083,000 ac. average during 1936– Midsummer dry weather damaged the quality of the crop, dry weather in September matured the late corn so that the f damage was not as large as expected. The amount of "soft," immature corn was estimated at only a small amount in Ohi

Average yield, 28.6 bu. per acre, was near the ten-year a age of 29.4 bu. but below the 36.7 bu. average of 1946. In corn belt the yield per acre dropped sharply below the rec of 1946. The best yields were harvested in the southeas states. Hybrid seed was used on about 71% of the total a and 93% in the corn belt.

*U.S. Corn Production by States*
*1947, 1946 and 10-year average 1936–45*
(In thousands of bushels)

| State | 1947 | 1946 | 10-yr. Average | State | 1947 | 1946 | Av |
|---|---|---|---|---|---|---|---|
| Illinois . . . . | 343,493 | 505,761 | 380,023 | New York . . | 20,215 | 26,637 | 2 |
| Iowa . . . . | 331,360 | 634,638 | 481,458 | Maryland . . | 16,416 | 17,328 | 1 |
| Indiana . . . | 191,135 | 233,682 | 186,996 | Colorado . . | 13,984 | 14,343 | 1 |
| Minnesota . . | 191,041 | 239,888 | 185,498 | Louisiana . . | 13,920 | 15,000 | 2 |
| Nebraska . . | 143,130 | 231,362 | 153,843 | West Virginia | 12,546 | 10,302 | 1 |
| Ohio . . . . | 138,826 | 178,409 | 157,149 | Florida . . . | 8,638 | 6,910 | [illegible] |
| Wisconsin . . | 105,840 | 111,980 | 91,368 | New Jersey . | 7,740 | 8,505 | [illegible] |
| Missouri . . . | 98,441 | 163,355 | 118,154 | Delaware . . | 4,550 | 4,536 | [illegible] |
| Kentucky . . | 76,265 | 81,979 | 66,809 | Montana . . | 2,988 | 2,520 | [illegible] |
| South Dakota | 75,430 | 120,300 | 64,525 | Connecticut . | 2,304 | 2,200 | [illegible] |
| North Carolina | 65,209 | 58,320 | 49,302 | California . . | 1,984 | 2,144 | [illegible] |
| Tennessee . . | 63,481 | 65,670 | 63,227 | Vermont . . . | 1,920 | 2,320 | [illegible] |
| Pennsylvania . | 57,460 | 59,340 | 53,974 | New Mexico . | 1,904 | 2,256 | [illegible] |
| Texas . . . . | 48,592 | 55,012 | 71,963 | Massachusetts | 1,702 | 1,748 | [illegible] |
| Georgia . . . | 48,075 | 44,145 | 44,229 | Wyoming . . | 1,235 | 1,122 | [illegible] |
| Michigan . . | 44,165 | 50,512 | 55,526 | Idaho . . . . | 1,125 | 1,092 | [illegible] |
| Virginia . . . | 42,940 | 40,284 | 34,900 | Oregon . . . | 1,107 | 1,136 | [illegible] |
| Alabama . . | 42,842 | 42,005 | 44,255 | Utah . . . . | 950 | 588 | [illegible] |
| Kansas . . . | 40,443 | 63,231 | 54,852 | Washington . | 795 | 884 | [illegible] |
| Mississippi . . | 37,191 | 36,465 | 45,046 | New Hampshire | 528 | 533 | [illegible] |
| South Carolina | 28,080 | 27,493 | 24,290 | Maine . . . | 400 | 407 | [illegible] |
| North Dakota . | 24,374 | 26,080 | 21,260 | Rhode Island . | 352 | 312 | [illegible] |
| Oklahoma . . | 22,896 | 25,882 | 27,644 | Arizona . . . | 352 | 352 | [illegible] |
| Arkansas . . | 22,525 | 30,912 | 33,723 | Nevada . . . | 64 | 70 | [illegible] |

The price of corn in Jan. 1947 was $1.21 to producers, about ten cents per bushel above a year earlier. It began to vance in March, however, and by September had reached a ord $2.40. It then held at about $2.37 through December.

The world's corn crop was estimated at 4,755,000,000 about the same as before World War II but 12% less than record production of 1946. The decline was chiefly in the Un States. Danubian crops were better than in 1946 but were low the prewar average. The crop in Europe as a whole 68% above the small 1946 crop. (*See* also VEGETABLES.)

(J. C. Ms

## Cornell University.

An institution of higher learning, sectarian and coeducational, at Ith N.Y., founded in 1865 and incorporated as a land-grant co under the Morrill act of 1862. The university comprises endowed schools and colleges of arts and sciences, enginee architecture, law, medicine and nursing, and the state-supported schools and colleges of agriculture, home economics, veterinary medicine and industrial and labour relations. There are also schools of education, nutrition and business and public administration. Degrees for advanced study other than professional are awarded through a graduate school. The divisions of medicine and nursing are in New York city and are operated in conjunction with the New York hospital. Two experiment stations, at Geneva and Farmingdale, N.Y., are operated in connection with the college of agriculture. The university also operates the Cornell Aeronautical laboratory in Buffalo.

A new administration building and Savage hall for the school of nutrition were completed during 1947. Construction was begun on a building for the Laboratory of Nuclear Studies, to house a synchrotron provided by the navy department and other facilities for research and advanced instruction. The Francis Norwood Bard professorship of metallurgical engineering, with an endowment of $250,000, was established, and a new curriculum in metallurgical engineering inaugurated in the school of chemical and metallurgical engineering. (For statistics of endowment, enrolment, faculty, library volumes, etc., *see* UNIVERSITIES AND COLLEGES.) (E. E. D.)

**Corporation Income Tax:** *see* TAXATION.
**Corundum:** *see* ABRASIVES.
**Cosmetics:** *see* SOAP, PERFUMERY AND COSMETICS.
**Cosmic Rays:** *see* PHYSICS.

## Costa Rica.

A Central American republic, located between Nicaragua and Panamá. Area, approximately 19,238 sq.mi.; pop. (off. est. Dec. 31, 1946), 771,503, classified as about 80% white, 16% mixed, 3% Negro, less than 1% Indian. The major portion of the population lives on the central plateau. The capital is San José (pop. 1946, 83,242); other principal cities are Alajuela (11,177), Cartago (13,888), Heredia (11,382), Liberia (4,346), Limón (10,656), and Puntarenas (9,466). Language: Spanish. President in 1947: Teodoro Picado Michalski.

**History.**—Events during 1947 centred on the campaign for the presidential election scheduled for Feb. 1948. Party lines were drawn when the four opposition parties selected Otilio Ulate, San José publisher, in February as their candidate, and the National Republican party in March nominated the former president Rafael Angel García Calderón.

The campaign was fraught with street-fighting, accusation exchanges, and a 15-day general strike engineered by the opposition. The strike, allegedly in protest against official infringement on political rights, tied up transportation and commercial operations, led to clashes which killed 5 and injured 59 persons and caused food shortages resulting in some sacking of markets in San José. The opposition partisans blamed the government for the dollar shortage, high prices of imported goods and failure to maintain neutrality during the presidential campaign. President Picado, given a vote of confidence by his cabinet in July, promised the election would be free and honest, but declared the strike an illegal attempt to overthrow the government. Several radio stations were ordered to cease operations, but the press remained officially free.

The strike ended Aug. 5, when the government promised indemnities to casualties, declared a general amnesty, granted suffrage rights to public employees and enacted some emergency relief measures, including a three-months' moratorium on rent payments. On Aug. 26, congress changed the electoral law to allow separate balloting for president, congressmen and mayors. In October, President Picado urged natives of other Central American countries resident in Costa Rica to exercise their legal voting privilege in the February election. Sporadic political clashes continued throughout the year.

On the economic scene inflationary tendencies continued. The general index of wholesale prices (100 in 1936 and 222 in Dec. 1945) reached 239 by the end of June 1947.

Costa Rica refused to accord recognition to the new government in Nicaragua, but moved toward closer collaboration with the Central American union movement by joining with Guatemala in April to suppress passport requirements affecting citizens of the two countries.

**Education.**—At the close of 1946 there were 868 elementary schools with 3,808 teachers and 77,300 pupils. Intermediate public education was offered in all the provinces, enrolment totalling 4,101. There were 9,277 in private schools. The National university had 907 students and 180 professors in 1945. As of Jan. 1, 1947, there were 73 motion picture theatres with a total seating capacity of 40,549. Government appropriations for education in 1947 were increased by more than 3,000,000 colones, largely to cover increased rates in teaching salaries.

**Finance.**—The monetary unit is the colón, valued officially on Aug. 29, 1947, at 17.64 cents U.S. The 1946 budget (expenditures: 78,726,614 colones; revenues: 62,922,712) was carried over through July 1947, and funds provided for the last five months amounted to approximately 40,000,000 colones. As of Sept. 30, the National bank held $2,019,000 U.S. in gold and $2,036,000 in foreign exchange, while commercial banks held $2,458,000 in foreign exchange. Currency in circulation remained steady during the year, around 75,000,000 colones.

**Trade and Communications.**—Exports in 1946 amounted to $14,337,272 U.S. ($11,611,709 in 1945) while imports were valued at $33,041,135 ($26,948,735 in 1945), the U.S. supplying 77% and receiving 74% of the trade. Chief exports were coffee (45.5%), bananas (30.6%) and cacao (5.5%). Preliminary production forecast for coffee during the 1947–48 crop year was 450,000 bags of 60 kg. each (355,000 bags in 1946–47). Banana exports during the first 6 months of 1947 (3,204,943 stems) were up 28% over the first half of 1946, and the exportable production of cacao for 1947 was estimated at 9,000,000 lb. (8,800,000 lb. in 1946).

Railways totalled about 450 mi. and improved highways 771 mi. in 1941. In 1946 the air lines transported 103,573 passengers and 8,200,000 lb. of cargo. As of Dec. 31, 1946, there were 2,800 automobiles, 600 buses and 1,300 trucks registered in the country. Air service continued to expand during 1947, but rail service bogged down under increased demands, causing temporary congestion in the harbours.

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**Cost of Living:** *see* BUSINESS REVIEW; PRICE ADMINISTRATION, OFFICE OF; PRICES.

## Cotton.

**Cotton Manufacture.**—"Cottonless Cotton Mill" was the headline of the year in 1947 in the cotton-textile industry. It introduced a description of a cotton mill in the southern part of the United States which does not process any cotton at all, but instead uses various synthetic fibres, as well as such natural fibres as wool, ramie and animal hairs. It is not a new thought to students of the industry, but it is new to a large part of the public and to many cotton manufacturers themselves.

Meanwhile, the cotton-textile industry—no matter what it processed—continued in 1947 to operate at a record high level of production and yet to fall far short of the world demands made upon it.

Cotton manufacture had experienced its longest period of sustained activity in 1937–47. The result of this situation was noted at the major meeting of the industry in the fall of 1947. It was stated that the industry would enter the year 1948 with unprecedented financial strength; also that earnings were being plowed back into corporate investment for purposes of re-equipment, modernization of methods and research. The necessity for such action grew out of the paucity of new machinery for a period of six years, including the war and immediate post-war periods.

Despite the threats to cotton from synthetic fibres, the demand for clothing all over the world was so great that the cotton-manufacturing industry in the United States operated in 1947 at least 5% above the level of 1946 and would have been on an even higher level if it had been physically possible. Looking toward the future, the industry was financing and maintaining a Cotton Mills Industry-Wide Committee on Public Relations which was presenting the case of cotton, an age-old fibre of great usefulness, to the general public by means of all available and appropriate media. (*See* also LINEN AND FLAX; RAYON AND OTHER SYNTHETIC FIBRES; TEXTILE INDUSTRY; WOOL.)

(D. G. WO.)

**United States Production.**—The threat of cotton surpluses in the near future had disappeared with the successive small crops and the increase of domestic consumption and exports. The crop of 1947 was one-third larger than the 1946 product, which was the smallest since 1895 except for the one year, 1921. The 1947 crop was estimated on Dec. 1 at 11,694,000 bales of 500 lb. each by the United States department of agriculture, which was 33% above the small 1946 crop of 8,640,000 bales, but below the 12,390,000 bales average 1936–45. The 1947 crop was harvested from 21,387,000 ac. compared with 18,190,000 ac. harvested in 1946, which was one of the two smallest acreages since 1885. The 1947 goal was put at 23,000,000 ac. which was about one-half the area grown in 1929.

The average yield in 1947 was estimated at 265.4 lb. per acre compared with 235.3 lb. in 1946 and an average of 250.6 lb. 1936–45. The high record yield was 298.9 lb., produced in 1944. This high yield period is attributed to the turning of less productive cotton land to other uses. Every cotton-growing state had a larger production than in 1946 except South Carolina, Arkansas and Tennessee. Texas held first place but Mississippi regained second place after losing it to Arkansas in 1946. The crop of American Egyptian cotton dropped to only 1,000 bales compared with 2,500 bales in 1946 and 32,100 bales average 1936–45.

The supply of fertilizer was larger in 1947 and more was used. About one-half of the cotton acreage was fertilized in 1946 at the rate of 337 lb. per acre. This was below the acreage fertilized during the previous ten years, but the rate of use was higher.

The larger acreage being devoted to feed crops, which were high priced, was cited as the chief factor in holding cotton acreage to low levels. While the introduction of new machinery such as flame-throwing weed eradicators and cotton-picking machines was continuing, these were adaptable only on the better level cotton lands of the southwest. The cotton-farm labour supply was reported to be about the same as in 1946.

The price of cotton to growers advanced early in 1947 from about 30 cents per pound in January to a peak of 35.88 cents in July and then declined slowly to 34.06 cents in December. The season's average for the 1946–47 crop was 32.64 cents per pound to growers. At this price the 1947 cotton became more than a $2,000,000,000 crop for the first time in 30 years. The previous record was made in 1919 when the crop was valued at more than $2,000,000,000 and the average farm price was 35.34

*U.S. Cotton Production by States*
*1947, 1946 and 10-year Average 1936–45*

(In thousands of 500 lb. bales)

| State | 1947 | 1946 | 10-yr. Average | State | 1947 | 1946 | 10-y Aver |
|---|---|---|---|---|---|---|---|
| Texas . . . . | 3,360 | 1,669 | 3,021 | Tennessee . . . | 515 | 520 | 528 |
| Mississippi . . | 1,555 | 1,047 | 1,787 | North Carolina . | 440 | 440 | 597 |
| Arkansas . . . | 1,260 | 1,281 | 1,394 | Oklahoma . . . | 325 | 262 | 568 |
| Alabama . . . | 935 | 822 | 1,003 | Missouri . . . . | 320 | 307 | 365 |
| California. . . | 760 | 458 | 442 | Arizona . . . . | 220 | 158 | 185 |
| Georgia . . . | 660 | 557 | 917 | New Mexico . . | 160 | 142 | 115 |
| South Carolina. | 640 | 697 | 765 | Virginia . . . . | 18 | 17 | 26 |
| Louisiana . . . | 505 | 247 | 639 | Florida . . . . | 10 | 6 | 20 |
| | | | | All Others . . . | 11 | 10 | 18 |

cents per pound. Receipts for 1947 were nearly 30% abo 1946 and about three times the 1935–39 prewar average. Whi prices declined in late 1947, parity advanced to the record more than 29 cents per pound in September.

Stocks of cotton began to decline in 1939 and continued shrink steadily through 1947. Although the crop of 1947 w one-third larger than that of 1946, the shrinkage in carry-ov brought the total supply down to about 15% below 1946. Carr over on Aug. 1, 1947, was 5,293,000 bales or about thr months' supply, compared with 9,869,000 bales a year earli and an average of more than 10,000,000 bales for the previo five years. The carry-over stocks had not been down to th low total since 1928. About one-half of the carry-over of U cotton was in foreign countries and comprised about one-thi of the world's total supply.

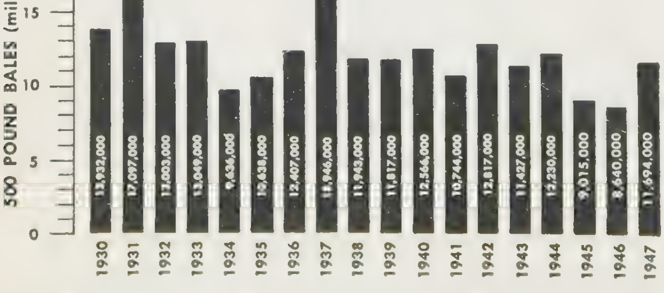
Exports of cotton reached a total of 3,502,000 bales on Au 1, 1946, almost the same as a year earlier but about twice t amount exported during the war years. In 1947 exports d clined and the total to be shipped was expected to be less th during the previous crop year unless the programs to aid Euro should stimulate foreign demand. Shipments to Japan and G many under credits extended by the Export-Import bank we begun late in 1947 and were expected to amount to nea 1,000,000 bales. The export subsidy was reduced from four cen per pound to one-half cent on Aug. 1, 1947. This put U.S. c ton in a less favourable position to compete with forei cottons.

**World Cotton Production.**—Total world production of c ton was estimated at 26,100,000 bales in the cotton year 194 48 or 21% above the small crop of 21,500,000 bales produc in 1946 which was largely caused by the small United Sta crop. Nearly all the increase in 1947 was caused by the larg crops of the United States and the Soviet Union. Some sm increases in production were reported for China, India a Argentina while the crops of Mexico, Brazil and Egypt w about the same as in 1946–47.

Cotton prices in most foreign countries were about the sa in 1947 as a year earlier and were more stable. The worl supply of cotton had declined from 1944 while consumption h increased even more rapidly, which resulted in a decline in t total carry-over to about 18,000,000 bales in 1946, compa with 26,487,000 bales in 1944. World mill consumption w about 26,000,000 bales in 1946–47.

Conditions were not yet favourable to any great expansi of cotton production in foreign countries because of the gr need for food grains and other crops. Disturbed conditions w retarding cotton growing in China, Egypt and India, which gether are the largest producers. Brazil had expanded prod tion to about the prewar average of 1935–39, which was abo 2,000,000 bales. No other country was an important produ except the Soviet Union, which reported only average prev production. The great developments announced by the soviet few years before, to be attained under irrigation in the area n the Caspian sea, had not materialized so far as reported.

**Cottonseed.**—The preliminary estimate of cottonseed p duction, which is made before ginning has been completed,



COTTON CROP in the United States. The figure for 1947 is the department of agriculture's estimate the 1947 output at 4,744,000 tons compared with 3,513,000 tons in 1946 and 5,143,000 tons average 1936–45. Texas produced 1,373,000 tons of the total followed by Mississippi and Arkansas. Prices of cottonseed rose in 1946 to more than $90 per ton in December and continued high through 1947 to $94.80 per ton in December. The short supply in 1946 combined with the strong demand for oils supported the high price. (J. C. Ms.)

**Cottonseed Oil:** *see* VEGETABLE OILS AND ANIMAL FATS.
**Council of Foreign Ministers:** *see* FOREIGN MINISTERS' CONFERENCES.
**Countries of the World, Areas and Populations of the:** *see* AREAS AND POPULATIONS OF THE COUNTRIES OF THE WORLD.
**Courts, Civil:** *see* LAW.
**Cranberries:** *see* FRUIT.
**Credit, Consumer:** *see* CONSUMER CREDIT.

**Cricket.** At the beginning of 1947 Australia won the "rubber" against England by 3 victories to 2 drawn games. England's bowling was the weakest ever to represent the country in Australia, and the side, under Walter Hammond's captaincy, never coalesced into a fighting machine. Don Bradman was still a great batsman and an astute captain and was well supported by a comparatively young Australian side, with S. Barnes and A. Morris the leading batsmen and a remarkable variety of bowlers, of whom R. Lindwall and K. R. Miller were really fast.

In the English summer of 1947 the South African tour won universal popularity. Their captain, Alan Melville, and B. Mitchell and A. D. Nourse had to carry too heavy a burden in batting, and the bowling proved inadequate. The first test match was drawn; the second, memorable for Denis Compton and W. J. Edrich reaching a record of 370 runs for the third wicket, was won by England, as were the third and fourth; but in the last match, which was drawn, South Africa enjoyed a consolation that approached a triumph: set to make 451 runs in the last innings, they had reached 423 for 7 wickets when stumps were drawn, Mitchell having batted for 13 hours for 120 and 189 not out. Alan Melville not only led the South African side ably but achieved a test match record by following up his century in the last innings against the English touring side of 1938 with centuries in his first three test match innings in 1947. England was hardly a convincing side, for, apart from D. Wright, its bowling lacked penetration, its fielding was uneven and the batting relied too much on Compton and Edrich. These two players both had a wonderful season: both exceeded the previous record aggregate (2,518 runs by T. W. Hayward in 1902), and Compton beat Jack Hobbs's record of centuries (16) in a season: splendid fielders and more than useful bowlers, they were in themselves half a side; inasmuch as their county, Middlesex, could reinforce them with variety in attack, great batting strength and an astute captain in R. W. V. Robins, it was not surprising to see them champions for the first time after P. F. Warner's captaincy in 1921. But Gloucestershire pressed them hard and in T. W. Goddard had the most successful bowler of the year.

The Gentlemen *v.* Players match, though drawn, was memorable for an innings of 162 by the New Zealand and Oxford university cricketer, M. P. Donnelly, which was acknowledged to be historic. Although Oxford was leading by 256 on the first innings, the match between Oxford and Cambridge universities was drawn. Eton and Harrow also played a drawn match.

At the close of the year an All-India team had begun, for the first time, a tour in Australia. In November Don Bradman scored his 100th century in first-class cricket. He was the first Australian cricketer to achieve this. (H. S. A.)

**Crime.** United States.—Postwar crime continued to climb in the rural areas during 1947 but showed a very slight decline in the cities. Latest available data for the first half of 1947, compared with the similar period in 1946, are shown in Table I.

Table I.—*Crime in 1946 and 1947 in 2,085 U.S. Cities*
*(Total population, 65,537,365)*

| Offense classification | January to June 1946 | January to June 1947 | Per Cent Change in 1947 |
|---|---|---|---|
| Murder and nonnegligent manslaughter | 2,005 | 1,876 | − 6.4 |
| Manslaughter by negligence | 1,496 | 1,334 | −10.8 |
| Rape | 3,850 | 3,984 | + 3.5 |
| Robbery | 19,824 | 20,124 | + 1.5 |
| Aggravated assault | 20,950 | 21,514 | + 2.7 |
| Burglary (breaking or entering) | 115,906 | 118,361 | + 2.1 |
| Larceny (theft) | 268,761 | 271,829 | + 1.1 |
| Auto theft | 80,043 | 62,220 | −22.3 |
| Totals | 512,835 | 501,242 | |

While the marked decline in the number of auto thefts was the only outstandingly favourable feature in this comparison, the drop in murders and manslaughters was also substantial. And whereas the sharp general upturn noted for the first half of 1946 over 1945 had led to fears in some quarters that the postwar crime level was destined ultimately for record-breaking levels, latest figures uniformly showed either a pronounced slowdown in the rate of increase or a complete reversal. Most heartening, of course, was the record of auto thefts which had risen by 19.6% in 1945–46, only to turn down so sharply in 1947 as to wipe out the earlier postwar gain. Nevertheless, the long-term trend was certainly upward for rape and aggravated assault (use of weapons). As to these crimes, the record for entire years 1939–46, inclusive, had shown net increases of almost 50%. Crimes against property rose only between 5% and 20% after 1939, and while as to these the postwar bulge would bear watching, it was still much too early to conclude that the new levels would be mantained for very long.

As noted above, rural crime trends were definitely higher, but in other respects were comparable with urban data—particularly in the sharp declines recorded in 1947 with respect to auto theft, murder and manslaughter. But the standards of crime reporting by sheriffs and constables were so strikingly inferior to those generally observed by city police that the rural crime data could not be viewed as more than very rough indices to the true situation.

As in prior years, the number of crimes per 100,000 population was generally highest in the larger cities, although 1947 showed cities in the 50,000–100,000 population bracket with the highest average rate for aggravated assault.

Viewed regionally, the south Atlantic and east central divisions showed 1947 declines in robberies, while other parts of the country registered a rise. Burglaries declined in the middle Atlantic and east north central divisions although the national trend for these also was upward. Most other regions showed similar improvement, but it was rather strikingly evident that the most favourable trends were in the southern states, with the mountain and Pacific states continuing to show fairly consistent increases in their crime rates. These regions led the rest of the country in crime rates—the southern states in crimes against the person (murder, manslaughter and aggravated assault) and the Pacific states in crimes against property (robbery, burglary, auto theft and other larcenies).

Distribution of highest crime rates among the individual states showed several marked departures from these broad regional patterns. Thus while the highest urban rates for murder were recorded in Georgia (13.22), for aggravated assault in North Carolina (245.1) and for robbery in California (95.5)—thus conforming to regional distribution—Florida led the country in burglary (517.2), Arizona in auto theft (235.2) and Nevada in other larceny (1487.6).

Table II.—*Number of Crimes Per 100,000 Inhabitants in U.S. Cities, 1946–47*

| | January-June 1946 | July-December 1946 | January-June 1947 |
|---|---|---|---|
| Murder and nonnegligent manslaughter | 3.13 | 3.36 | 2.92 |
| Manslaughter by negligence | 2.26 | 2.44 | 2.04 |
| Rape | 5.84 | 6.28 | 6.12 |
| Robbery | 30.00 | 32.80 | 30.70 |
| Aggravated assault | 31.90 | 35.60 | 34.40 |
| Burglary | 197.60 | 202.00 | 203.20 |
| Larceny (theft) | 458.90 | 509.30 | 473.10 |
| Auto theft | 121.90 | 128.00 | 94.50 |

Semiannual rates for U.S. cities in general during the postwar period are shown in Table II.

Among 1947 robberies, those effected on the highway represented about five-eighths of the total, with another one-fifth directed against commercial houses. Residences, oil stations, chain stores and banks were next in order.

Nighttime burglaries represented more than four-fifths of the total of all breaks, with business premises heavily favoured over residences during these hours. Considerably more than half of all larcenies fell into the $5 to $50 category with thefts from autos (not including auto accessories) the most favoured object of such crimes. With auto accessories in second place among larcenies, and auto thefts standing in an entirely separate major category, it was apparent that crime and the motor car continued to be closely related in many ways.

Crimes involving theft averaged $168 per case, with auto thefts nationally leading in values ($733 average) and with robberies ($187) and burglaries ($131) next in line.

The decline in property recoveries which was noted in 1946 was continued into 1947 so far as stolen cars were concerned, but there was a gratifying upturn in other property recoveries in 1947, although still only 24% of the total value involved.

With the close of 1947 the *Uniform Crime Reports* completed 18 years of uninterrupted publication on a steadily expanding scale. All 412 U.S. cities of more than 25,000 population were contributing reports to the system. In addition, 633 cities from 10,000–25,000 and 2,123 other cities, villages and rural townships also were participating. These with various county, state and territorial agencies reached a grand total of 5,499. (*See* also Federal Bureau of Investigation; Juvenile Delinquency; Kidnapping; Law; Police; Secret Service, U.S.)

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**Great Britain.**—It was clear from the few official references that the upward trend in crime after 1938 had come to an end, although a wave of crimes of violence continued to give the authorities grave concern. The reasons for it were said to be the inability to trace older criminals during the war and the rise of a new generation, scarcity of goods encouraging black market transactions and the tendency to keep money and valuable possessions at home. The decline in crime, however, was most noticeable in London, where one in every ten public telephone calls to the police led to an arrest; shopbreaking crimes dropped by more than half, and fewer cars were stolen. Children roaming the London streets in gangs of three or four committed one in eight of the crimes tracked down by the police, and service deserters were responsible for 9% of them. More police supervision of lotteries and sweepstakes in London was ordered in view of increased illegalities. Police detection methods included considerable new developments in mobile radio by which a county police headquarters could keep in two-way speech contact with patrol cars all over its area. In Leeds the chief constable proposed street patrols of householders to help the police to detect winter crime.

Official figures of national crime for 1938–45 were presented to the house of commons and showed that nonindictable offens had decreased from 709,019 in 1938 to 297,438 in 1945; th crimes against the person had risen from 1,583 a year to 2,45 sexual offenses from 2,321 to 3,228; breaking and entering fro 10,814 to 21,260; and larceny from 56,092 cases to 75,9 (*See* also Prisons.) (P. Bn.)

## Cripps, Sir (Richard) Stafford

(1889– ), Briti statesman and lawy was born on April 24, the youngest son of the 1st Bar Parmoor. Educated at Winchester and University college, Lo don, he was admitted to the bar in 1913. He was knighted a appointed solicitor general in the Labour government in 19 and in 1931 was elected Labour member for East Bristol. O Jan. 25, 1939, Sir Stafford was expelled from the Labour par for attempting to create a popular front.

In June 1940 Winston Churchill appointed him ambassad to Moscow, where he completed the Anglo-Soviet pact. He r turned to London in Feb. 1942 to become lord privy seal, and March left for India to work out terms for independence. November he was appointed minister of aircraft productio and on Feb. 28, 1945, he was readmitted to the Labour par In the Labour government he was president of the board trade, July 1945 to Sept. 1947, minister for economic affa Sept. 29 to Nov. 13, when upon the sudden resignation of Hu Dalton (*q.v.*) he became chancellor of the exchequer, b retained general responsibility for economic affairs.

In winding up for the government in the two-day debate the state of the nation in August, Sir Stafford appealed for great effort by all the people, saying that only higher producti could bring relief to the country. In the house of commons Oct. 23, he spoke once again on the economic situation and a nounced cuts in capital expenditure in the import of food, a the need for even greater output, especially for export. O Nov. 17 he made his first speech in the house of commons chancellor in replying to the debate on Hugh Dalton's inter budget, when he stated he was in full agreement with predecessor's proposals.

**Croatia:** *see* Yugoslavia.
**Crude Oil:** *see* Petroleum.
**Cruisers:** *see* Navies of the World.
**Crushed Stone:** *see* Stone.

## Cryolite.

The United States imported 11,424 short tons cryolite in 1946, as compared with 17,952 tons 1945. Exports decreased from 1,901 tons in 1945 to 1,299 to in 1946. Greenland is the only source of supply and exports a material that had previously been imported. The chief use cryolite is as a constituent of the bath for the electrolytic p duction of aluminum, with small amounts going into cerami abrasives and insecticides. (G. A. Ro.)

## Cuba.

A West Indian republic, including the island of t same name, the Isle of Pines, and other minor islan and keys. The area of the main island is 44,217 sq.mi. (Isle Pines, 1,180 sq.mi.); pop. (1943 census), 4,778,583 (1946 e 5,052,000); the density is 108.07 per sq.mi. Racial distributi is officially estimated at 75% white (of which about one-th is mulatto), 24% Negro and 1% Mongoloid (mostly Chines Almost 200,000 Spaniards reside in Cuba. The capital and ch port is Havana (officially, La Habana) with a pop. (1943 c sus) of 659,883. Other important cities (with 1943 census p unless otherwise indicated) are Santiago de Cuba (1946 e 152,000); Marianao (a Havana suburb, 120,163); Camag (1946 est., 87,009); Matanzas (54,844); Cienfuegos (52,91

Guantánamo (42,423); Cárdenas (37,059); Holguín (35,865); Manzanillo (36,295); Ciego de Ávila (23,802); Santa Clara (53,981); Pinar del Rio (1946 est., 63,461); Regla (23,037); Güines (22,669); Guanabacoa (30,287) and Placetas (19,693). Roman Catholicism is the predominant religion. President in 1947: Dr. Ramón Grau San Martín.

**History.**—The year 1947 was a turbulent one in Cuban affairs. A two-hour work stoppage on Jan. 21 by 10,000 Havana workers, protesting the high cost of living and food shortages, partially paralyzed the capital city. Rafael González Mónoz became the new foreign minister Feb. 1, replacing Alberto Inocente Álvarez. A second protest strike occurred Feb. 10 when Havana dock workers, as a gesture against Franco Spain, refused for 24 hours to unload a Spanish ship in Havana harbour. Workers in Baracoa (Oriente province) went out on a 24-hour general strike on Feb. 19 because of the government's failure to build a promised highway in that area. The Havana produce exchange, an alleged black market centre, was bombed March 29. On April 2, Havana police detained Carlos Duque Estrada, alleged revolutionist, for large dynamite thefts. On the same day Liberal Representative Manuel Cuevas Rivero was killed at Manzanillo, reputedly by a political foe. Felix Palau, an Auténtico party leader, was killed in Oriente province April 5 in a clash with communists. In an attempt to preserve order, Interior Minister Alfredo Pequeno thereupon suspended a meeting of the Cuban Confederation of Workers. The interior ministry three days later, after a series of clashes between the government and communist labour factions, some of which resulted in deaths, banned all political meetings which might cause disorder. Senate President Miguel Suárez Fernández resigned his office on April 15 because of dissension in the Auténtico party. His resignation was rejected by the senate in a stormy session on April 21, during the course of which the capitol was sprayed with machine gun bullets from a speeding car. The cabinet resigned on April 30 because of Pres. Grau's controversy with congress over economic conditions; Grau named a new Auténtico cabinet headed by Raul López del Castillo as premier.

The Havana mayor, Manuel Fernández, committed suicide May 5, allegedly because of difficulties in getting a new waterworks system for the city. Cuba on July 10 signed a cultural relations treaty with Mexico, at which time Pres. Grau was awarded a Mexican decoration. The government on July 29 sided with opponents of the communist officers of the Confederation of Workers, ousting the officers from their posts and from the labour headquarters. On Aug. 1, Sen. Eduardo Chibás, formerly the most vocal supporter of Pres. Grau, became head of a new opposition group, the Party of the Cuban People. The Cuban navy on Aug. 6 seized four U.S.-made war planes which had landed illegally in Cuba but refused to comment on their possible connection with a rumoured invasion of the Dominican Republic. The army on Sept. 15 crushed a police revolt in Havana; six were killed; four days later the government announced the arrest of 40 persons for alleged complicity in the police plot. On Sept. 21 the government reported the smashing of an opposition plot and seizure of 13 truckloads of munitions and arms near Havana. The government announced on Sept. 29 that an attempt to invade the Dominican Republic by forces opposed to Pres. Rafael Trujillo of that government had been foiled by Cuban seizure of its Cuban based military, naval and aviation elements. One of the leaders in the movement was allegedly the Cuban education minister, José Manuel Alemán, who resigned his post on Oct. 1, after the senate had passed a no-confidence vote, but who was promptly reappointed by Grau as a minister without portfolio. The Cuban supreme court on the same day ordered the release of the rank and file of the approximately 1,100 insurgents seized in the projected expedition. On Oct. 2 the army released 376 of the revolutionists and the supreme court ordered the freeing of 545 more. The court on Oct. 5 released 26 of the alleged leaders of the group on bail and freed the remaining members. Havana university and high school students on Oct. 13 called a two-day strike to protest the killing of a student during a demonstration against Minister Alemán. On Oct. 16, a former lieutenant accused Pres. Grau of being an organizer in the plot against the Dominican government. Authorities on Oct. 17 arrested more than 700 for participation in a four-hour communist-led strike protesting communist expulsion from labour federation posts. Havana police on Oct. 27 fired on bus employees demonstrating outside the communist newspaper *Hoy* against the arrest of communist labour leaders. (*See* also DOMINICAN REPUBLIC.)

CUBAN MILITIA searching for contraband arms in Aug. 1947, following reports of a planned invasion of the Dominican Republic from Cuba, by armed revolutionists. An expeditionary force was found and arrested in Cuba and their sizeable cache of arms seized, late in September

**Finance.**—The monetary unit is the peso, officially pegged at par with the U.S. dollar. Bank deposits May 31, 1947, were 599,600,000 pesos; loans and discounts on the same date were 245,300,000 pesos. The estimated holdings of gold and foreign exchange on June 30, including U.S. currency in Cuba but excluding balances held abroad by individuals, were $868,900,000. Wages and salaries paid during the first six months of 1947 by private industries totalled $280,939,100 as against $204,099,400 in the same period in 1946. Gold bullion holdings at the end of June were $270,000,000. The total peso issue as of the same date was 428,000,000; per capita circulation on May 31 was 88.39 pesos. National income from the record sugar crop during 1947, it was estimated, would reach $700,000,000, a figure greater than in any year except 1920; the 1936–41 average was $125,000,000. A cabinet decree March 13 froze monthly rentals of less than $25 as a partial answer to protests against inflation. The government during the year gradually relaxed wartime price controls.

**Trade and Communications.**—Exports for the first four months of 1947 were valued at $205,771,101, of which the United States took $164,257,421 or 79.8%; the comparable figure in 1946 was $132,299,158, of which $96,339,722 or 72.8% went to the U.S. Imports for the first four months of 1947 were $149,258,140, of which the U.S. supplied $126,063,747 or 84.4%; the corresponding figures for 1946 were $108,689,472, of which $76,305,431 or 70.2% were from the U.S. Sugar exports in the first six months of 1947 were about 2,600,000 long tons, including 2,298,421 tons of raw and 297,995 tons of refined sugar; of the refined sugar, all exports went to the U.S.; of the raw sugar, the U.S. took 1,676,711 tons, the United Kingdom 552,437 tons and Canada 52,621 tons. Molasses exports in the first six months of 1947 totalled almost 93,000,000 gal., representing 80,000,000 gal. of 1947 production and 13,000,000 gal. from the 1946 carry-over; of the total amount, the U.S. took 46,478,000 gal., the United Kingdom 37,730,000 gal. and Canada 5,145,000 gal. The estimated export of bananas in 1947 was 5,000,000 stems; the actual export in the first three months was 768,000 stems. Grapefruit shipments in 1947 totalled 4,900,000 lb. (or 56,495 crates), as against 46,000 crates in 1946 and a prewar average of 100,000 crates. Avocado exports in the first nine months of 1947 were 3,697,000 lb.; the 1939–41 average for the first nine months was 11,262,000 lb. Butter imports during the first seven months of 1947 were more than 1,000,000 lb. Imports of lumber during the same period totalled 26,493,498 board ft., of which yellow pine represented 92%; lumber imports during that period showed a 47% increase over the corresponding period in 1946. It was anticipated that heavy imports of potatoes would be necessary in the second half of 1947.

Exports of fresh pineapple during the first six months of 1947 were 88,000,000 lb. (same period in 1946: 111,000,000 lb.); canned pineapple exports in the same months of 1947 were 430,000 cases (same period in 1946: 500,000 cases). The pineapple trade showed a definite tendency to decline from the wartime boom conditions. Tobacco exports in 1946 were valued at $55,900,000, the highest figure in 16 years. Tobacco sales in 1947 tended to decline, chiefly because of the lack of foreign exchange in countries which normally bought the largest amounts of Cuban tobacco; much of that sold in 1947 was carry-over from 1946. Banana exports in 1946 totalled 4,076,000 stems, valued at $3,400,000. Candy exports during the same year were 34,565 metric tons, valued at more than $10,000,000 (1945: 23,458 metric tons, valued at $7,046,000); of the 1946 exports about 60% went to the U.S. Imports of wheat flour in 1946 were 264,000,000 lb., valued at $11,500,000; this was the second largest import item during the year. Corn imports in 1946 were 387,150 kg., of which 76% were from the U.S., 15% from the Dominican Republic and the remainder from Honduras. Imports of corn meal during the same year were 176,998 kg. (1945: 140,505 kg.), all of which came from the U.S.

Pres. Grau on May 8, 1947, lifted all duties on beef imports after 56 meatless days in Havana caused by lack of cattle shipments to market resulting from low prices. The sugar trade caused difficulties in 1947, although an agreement on Dec. 13, 1946, ended the long controversy between the government and producers caused by the government's seizure of the price differential on 250,000 long tons of sugar sold above the U.S. price and also by government sequestration of an increase in price offered by the Commodity Credit corporation. U.S. congressional legislation in the late spring of 1947, which Cuba interpreted as adversely affecting U.S. sugar policy toward the island, resulted in a Cuban decree on Aug. 22 setting a quota for U.S. industrial and agricultural imports into Cuba, as a means of retaliation. The government during the year reserved 300,000 Spanish long tons of the 1947 sugar crop for sale to other countries than the U.S. on a government-to-government basis.

On March 11 Cuba signed a civil airlines agreement with Peru. The Compañía Cubana de Aviación was given an Inter-American Safety council award in 1947 for its world record of flying 12 consecutive years without fatalities. Cuban aviation interests organized during the year, with government support, the Asociación de Transportadores Aéreos de Cuba, a group comparable to the Air Transport association of the U.S. A government commission left for the U.S. in July to buy freight vessels of 5,000 tons or less to expand the Cuban merchant marine.

**Agriculture.**—The 1947 sugar crop set a record of 6,448,320 short tons of raw sugar and 299,400,000 gal. of blackstrap molasses; total cane production during the season was 52,575,060 short tons. Of the huge sugar crop, about 4,300,000 short tons were scheduled to be shipped by Sept. 30 under a contract with the Commodity Credit corporation, and 1,400,000 tons were to be shipped in the last quarter of the year. The U.S. department of agriculture agreed on Oct. 15 to pay 4.9625 cents per lb. for the portion of the 1947 Cuban sugar crop sold in the U.S. Sugar cane acreage in 1947 was 2,850,000 but this figure was expected to drop at least 10% by the 1949 season. It was anticipated, however, that 1948 production would run from 5,800,000 to 6,000,000 short tons. It was reported in Cuba during the latter part of 1947 that 1948 sugar production quotas might be restricted if prospects for additional European sales did not improve. The industry faced the possibility of glutted markets inasmuch as the 1947 crop was about 9% higher than the record crops of 1925 and 1929. Tobacco production in 1945–46 was 84,700,000 lb., the largest in 20 years; production in 1946–47 declined to about 65,000,000 lb., and the continuance of marketing difficulties led to the report that the ministry of agriculture might restrict the 1947–48 crop to about 50% of the average for the preceding two years.

The estimate of cacoa production in 1946–47 was 6,000,000 lb., an increase of 20% from the 1944–46 average. The coffee crop in 1946–47 was estimated at 545,000 bags of 60 kg. (1945–46: 381,524 bags). Potato production in 1946–47 was 151,000,000 lb. (1945–46: 160,000,000 lb.). Production of henequen fibre in 1946 was 30,500,000 lb. (1945: 29,100,000 lb.). Production of processed fruits and vegetables in 1946 reached a record 111,000,000 lb. The 1946 corn crop was estimated at 375,000,000 lb. of shelled corn; this figure was almost exactly equal to the average estimated consumption of 376,000,000 lb. The government on Jan. 17, 1947, requisitioned 50% of all beef cattle as raisers refused to sell in any considerable quantities at the official price of eight cents per lb. on the hoof. On May 23 the government created an office of animal quarantine, aimed at protection against the hoof-and-mouth disease. Experiments with kenaf fibre, as a rival of jute, were conducted during 1947. Milk production was estimated in 1947 at 1,100,000,000 lb. (1946: 1,000,000,000 lb.); the number of dairy cattle decreased, however.

**Manufacturing.**—The nine leading chocolate manufacturers processed 3,650,000 lb. of cacao beans in the first half of 1947. The 1947 fruit and vegetable pack was between 30,000 and 35,000 short tons (1946: 50,000 tons), the decrease being attributed to a lower export demand for high-sugar-content products such as grated coconut and preserves. Beer production in the first six months of 1947 was 38,700,000 l. (same period in 1946: 40,500,000 l.); the decline was accounted for because of a shortage of allocated malt and production was expected to increase in the second half of 1947. Production of sea salt in 1946 was 125,183,240 lb. The building industry in 1947 lagged behind 1946 figures; Havana province building permits in the first seven months of 1947 were $11,434,629 (same period in 1946: $21,224,767). Nine kilometres of aqueduct were under construction for Havana at a cost of $3,217,984. A $6,000,000 flour mill was being planned for Havana. (*See* also WEST INDIES.)

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(R. H. FN.)

**Curaçao.** A Netherlands colony of six West Indian islan off the Venezuelan coast near the mouth of La Maracaibo. The same name is given to one of the six islan Total area 403 sq.mi.; total population (1944 est.) 127,8 Three of the islands, about 40 mi. north of Venezuela, inclu Curaçao (210 sq.mi.; est. pop., 78,587), Bonaire (95 sq.m est. pop., 5,798) and Aruba (69 sq.mi.; est. pop., 39,318). T other three small islands which are in the Leeward group, abo 500 mi. northeast, include the southern part of St. Martin ( sq.mi.; est. pop., 1,877; the remainder of St. Martin belon to France), St. Eustatius (7 sq.mi.; est. pop., 1,092) and Sa (5 sq.mi.; est. pop., 1,194). The only important town is t colonial capital, Willemstad (est. pop., 36,000), on Curaç The chief racial elements, aside from native Curaçaoans, a English, Dutch and Venezuelans; the natives are largely Neg from 65% to 95% on the different islands. Dutch is the offic language but many of the inhabitants speak a patois known Papiamento, composed of Spanish, Dutch, English, Portugue Carib and native African words. Governor in 1947: Dr. Pie A. Kasteel.

**History.**—The colony continued to be greatly interested 1947 in the prospect of achieving greater autonomy, based Queen Wilhelmina's speech to the empire on Dec. 6, 1942. S members of the first and second chambers of the Netherlan arrived at Willemstad on Jan. 25 to repay the visit made by committee of the Curaçao legislative council to the Neth lands in mid-1946 and to discuss further plans for administ tive decentralization. The community council of Aruba cabl Queen Wilhelmina on its own behalf on Sept. 9 petitioning a larger degree of home rule. A government-sponsored Neth lands Antilles central tourist board was established at Wille stad on April 1; subordinate tourist committees were organiz on each of the three Leeward Islands.

**Education and Religion.**—About 18,000 pupils are enrolled in the schools in the colony. About 90% of the permanent population is Ron Catholic. The church operates 36 of the 52 schools. Catholics of Cura are organized as a political party which at times has controlled t thirds of the legislative seats. Protestant denominations on Curaçao Aruba joined in a united Protestant community with 5,930 members.

**Finance.**—The monetary unit is the guilder or florin of 100 Curaçao ce Curaçao currency was detached from Netherlands currency in 1943 a new coinage went into circulation in that year. The financial situat in the fall of 1947 was serious because of dollar shortages resulting fr the freezing of dollar exchange by the Bank of England. The Cura exchange office hence adopted a series of temporary relief measures September to conserve dollar exchange. Governor Kasteel went to Netherlands in mid-October to discuss the financial crisis and it announced on Oct. 20 that the Netherlands government would imm ately place $2,600,000 at the disposal of Curaçao; the home governm agreed to allot the colony $1,500,000 monthly for the remainder of year instead of the $1,300,000 it had received monthly until Aug. 19 A delegation including Governor Kasteel, Finance Minister Pieter Liefti and Finance Administrator Dr. H. J. M. Hoogeveen subsequently w to London for conferences with treasury and Bank of England offici The Curaçao chamber of commerce strongly urged disengagement of colony from the Anglo-Dutch monetary agreement.

**Trade and Communications.**—Imports for the first quarter of 1947 cluded: foodstuffs and beverages $3,547,868 (46% from the U.S.); goods $2,076,282 (71%); machinery and apparatus $909,852 (37 crude oil $14,763,409 (21.8%); miscellaneous $5,550,504 (41%). T United States trade with Curaçao in the first nine months of 1947 $53,375,000 as against $24,536,000 for the same period in 1946. Exp of refined petroleum products from Aruba in 1946 was 111,385,453 (1945: 105,815,228 bbl.). Of total 1946 petroleum product shipme North America took 57,537,736 bbl., Europe 34,904,954 bbl., So America 12,881,724 bbl.; U.S. military consumption was 5,512,345

Royal Dutch Airlines (K.L.M.) continued to expand its services 1947, including opening of the first direct flights from Curaçao to José, Costa Rica, on March 25. Air express to and from Curaçao creased 400% in 1947 and passenger traffic through the colony 1 The 1948 budget alloted 1,000,000 guilders (about $526,000) for bour improvements at Curaçao; the corresponding amount in the 1 budget was 100,000 guilders. Telephone service with the United Ki dom was opened April 8.

**Manufacturing.**—Crude oil runs to stills in 1946 were 122,877,759 (1945: 109,302,234 bbl.).

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(R. H. FN.

**Curling.** Utica, N.Y., dominated curling in the United States by sweeping all three finals in Grand National matches involving the Allen, Mitchell and Country club competitions. Utica No. 1, skippered by Roy E. Read, defeated Schenectady, N.Y., 22 to 9, for the Allen medal. Utica No. 2, ed by R. Ward Murray, defeated Lake Mahopac, 20 to 10 for the Mitchell medal, while Utica No. 1, skippered by Kenneth S. Hurd, downed Ardsley No. 1, 20–16, in the Country club match. Schenectady, directed by R. D. Thomson, dethroned the New York Caledonians as winners of the Gordon medal, 20 to 11. Ardsley No. 2 regained the Douglas medal after a two-year lapse by defeating Ardsley No. 1, 14 to 10. The Douglas winners were skippered by W. Barton Eddison, author of the same accomplishment in 1944. Utica No. 2 won the Stockton cup, and the Toronto Granite rink captured the McCrae bonspiel. (M. P. W.)

**Currency:** *see* COINAGE; EXCHANGE CONTROL AND EXCHANGE RATES. *See* also under various countries.

**Cycling.** The big world event in cycling for 1947 was the running of the six-day international bike race. Bill Anderson of Cleveland, O., and Stan Bransgrove, Melbourne, Austr., teamed to win the classic which was held at the Coliseum in Chicago, Ill. They travelled 1,996 mi. and 9 laps and gained 16 sprint points. Alf Letourneur of Los Angeles, Calif., and Bill Jacoby of Chicago did the same distance but gained only 26 sprint points. Only six of the ten starting teams finished, and the race ran for 107 hr.

Ted Smith, Buffalo, N.Y., national amateur champion in 1945, won a 25-mi. point race to take his second senior men's national championship for amateurs, winning by a single point. He covered the distance in 1 hr., 6 min., 29.8 sec. Jack Heid was second, representing Westwood, N.J.

Other titles and their 1947 winners were: world's professional, oseph Scherens, Belgium; middle-distance speed, Raoul Leueur, France; amateur speed, Reginald Harris, Great Britain; men's national amateur, junior, Joe Cirone, Fontana, Calif.; women's, Doris Travani, Detroit, Mich.

It was reported by the American Youth Hostel headquarters that membership had increased 60% over 1946; the sale of bicycles during the year exceeded that of the year 1900, when cycling enjoyed halcyon days. (T. J. D.)

BICYCLES belonging to spectators at the International Cycle meet held at Herne Hill in London, England, during the spring of 1947

**Cyclotron:** *see* ATOMIC ENERGY; PHYSICS.

**C.Y.O.:** *see* CATHOLIC ORGANIZATIONS FOR YOUTH.

**Cyprus.** British colony and island in the eastern Mediterranean lying south of Asia Minor and west of Syria. Area: 3,572 sq.mi.; pop. (1945 est.), 434,616. Chief towns: Nicosia (cap., 1931 pop. 25,507); Larnaca (11,715); Limasol (15,066); Famagusta (8,771). Languages: Greek and Turkish, the Greek-speaking element comprising about 80% of the total population. English is also widely understood. Religions: Christian (Autocephalous Orthodox Church of Cyprus) and Moslem. Executive authority is vested in a governor (appointed by the British crown) assisted by an executive council mainly official in composition. Governor: Lord Winster (appointed 1946).

**History.**—It was announced by the British government in Oct. 1946 that a consultative assembly was to be called together in Cyprus to consider the framing of constitutional reforms, including the re-establishment of a legislative council. Steps to bring such an assembly into being were duly taken in 1947. In Oct. the governor published a statement to the effect that he had asked the chairman to convoke a meeting of the assembly at the earliest convenient date, despite the fact that the majority of those invited to serve had declined the invitation (the exceptions, *i.e.*, those willing to serve, included the Turkish representatives as well as the mayors of the four principal towns). The old agitation for "Enosis," or union with Greece, was active throughout the year among the Greek-speaking population of the colony. Apart from questions of "higher politics," substantial progress was made in Cyprus during the year both in the development of economic projects and in the expansion of local government in the districts. Of the various large development schemes sanctioned in 1947 under the Colonial Development and Welfare act, one was a grant of £20,800 for the provision of improved access to St. Hilarion castle and Bellapais abbey.

**Finance and Trade.**—The gold sovereign is legal tender in Cyprus, but for normal purposes the local unit of currency is the piastre. It is linked to sterling (£1 = 180 piastres). Revenue (1946) £4,358,000; expenditure £3,938,000. Imports (1946) £8,138,000; exports £4,202,000. The most important natural resources of Cyprus are agricultural. Carobs (used mainly in the manufacture of cattle food) furnish the leading agricultural export. The island is also rich in minerals, of which cupriferous pyrites represent the largest and most valuable deposit. Apart from carobs and metalliferous ores, exports of the colony's produce include fruit, vegetables (mainly potatoes), asbestos and wool. (J. E. SH.)

**Czechoslovakia.** An independent republic of central Europe. Area: 49,353 sq.mi.; pop. (est. Oct. 1947): 12,242,000. Chief towns (pop. est. May 1947): Prague (cap., 921,800); Brno (266,000) Moravská Ostrava (172,000); Bratislava (126,000); Plzeň (166,000). Language: Czech and Slovak; religion: mainly Roman Catholic. President: Dr. Eduard Beneš; prime minister: Klement Gottwald.

**History.**—In 1947 Czechoslovakia continued under a coalition government formed by four parties: Communist, strongest single party, to which Prime Minister Gottwald belonged; Social Democrat; National Socialist, a liberal centre-of-the-road party to which President Beneš belonged, and People's party, representing largely the Catholic element. By the end of the

LIDICE, Czechoslovakia, which was destroyed by nazis during World War II, is shown being rebuilt in 1947. Both women shown were survivors of German concentration camps

year the constituent assembly had not yet finished elaboration of the new constitution.

The incessant struggle between the communists on the one side and the three other parties on the other side continued throughout 1947. The communists endeavoured to bring Czechoslovakia more and more into line with the ideology and foreign policies of soviet Russia, while the other parties—though entirely faithful to the alliance with the U.S.S.R.—wished to retain the limited democratic liberties which still survived in 1947. Trade between Czechoslovakia and the democratic nations was so strong at the beginning of 1947 that the communists, alarmed, demanded a reorientation of the nation's foreign commerce.

While the German minority problem had been solved by expulsion of the more than 3,000,000 citizens of German descent, the Magyar minority problem in Slovakia remained unsolved because of the resistance of communist authorities in Hungary. Only a part of the Magyar minority in Slovakia could be transferred to Bohemia and Moravia and dispersed under the compulsory labour decree or exchanged for the Slovak minority in Hungary.

The principal nationality problem, relations between Czechs and Slovaks, had not yet found its solution by the end of 1947. The hanging of Mgr. Joseph Tiso, president of the independent Slovak republic from 1938 to 1945, on April 18 did not facilitate the reconciliation of the two Slav peoples. The elections in Slovakia had given a large majority to the Slovak Democratic party and had revealed much less communist strength than in the Czech parts of the republic. The national court in Prague, sitting in judgment over the members of the Czecho-Slovak cabinet of March 1939, sentenced former Premier Rudolf Beran and former Minister of Defense Gen. Jan Sýrový to 20 years of forced labour. The other defendants, Dr. Jiři Havelka, Dr. Otakar Fischer and Dr. Joseph Černy, were acquitted. The revolutionary system of people's courts was abolished in May, the country returned to the democratic system of judicial t and procedure.

The communists were resolved to undermine the majo held by the Democratic party in Slovakia by means simila those employed in Hungary against the Small Landhold Communist-controlled organizations of partisans and work demanded removal from the party of all "subversive elemen In Sept. 1947 a large number of influential Slovaks were rested under the suspicion of separatist tendencies and of nections with Slovaks abroad. Other arrests followed, and the end of October the communists had succeeded in forcin crisis in the Slovak regional administration, where four c munists faced eight democrats. They demanded appointmen representatives of nonparliamentary communist-contro bodies to the regional administration. The democratic pa resisted these demands with some success and the stru ended with a compromise which gave the communists a stro position in the administration. Meanwhile, Jan Ursiny, Slovak deputy prime minister in Prague, had resigned.

In possession of the key Czech ministries of the interior of information, the communists tried to influence cultural ac ties and education, although students were in the large majo anticommunist. They tried to suppress all criticism of U.S.S.R. while freely indulging in bitter attacks upon the Un States and democracy.

The democratic parties resisted, not without success, t attempts. On Nov. 5 the Nationalist Socialist party publish protest against attempts to replace the concepts of an i pendent state of free citizens. On Nov. 11 President Beneš manded a synthesis "between the necessary social co-ordina and the vitally indispensable need of disciplined individual dom." On Nov. 29 many members of parliament protested munist domination of the nationalized Czechoslovak film in try.

After accepting unanimously the invitation to the Paris conference on the Marshall plan, the government was forced by Russian pressure to reverse its decision. Reorientation of Czech trade from the west to the east, as demanded by the communists, was inaugurated by trade pacts with Poland and with the U.S.S.R. The treaty with Poland called for an exchange of Czechoslovak-manufactured products for Polish raw materials, amounting to 15,000,000,000 crowns over five years. At the beginning of December a five-year trade treaty was signed with the U.S.S.R., under which the latter promised to deliver 400,000 tons of wheat and rye by the end of April 1948. The goal of revision of the nation's trade balance was to shift 40% of its trade to other Slav nations, including 17% to the U.S.S.R., and a total of 50% to the eastern bloc, including Rumania and Hungary.

**Education.**—1945–46: primary schools 11,244, scholars 980,038; higher grade 1,952, scholars 400,963: secondary, classical and technical schools 268, scholars 98,091; industrial, commercial and vocational schools 1,383, scholars 298,977; teachers' training schools 62, scholars 6,603; colleges 12, students 27,336; universities (1946) Prague, students 19,798; Brno 7,181; Olomouc 1,057; Bratislava 9,380.

**Finance.**—Revenue (est. 1947) Kc.48,400,700,000; expenditure (est. 1947) Kc.73,304,933,000; bank notes in circulation (June 1947) Kc.44,393,000,000; public debt (June 1947) Kc.118,272,000,000; assets of national bank (gold and foreign exchange, Feb. 1947) Kc.5,769,000,000. Currency: the unit is the koruna ceskoslovenská (Kc.); = 2.066 U.S. cents.

**Trade and Communication.**—Foreign trade (1946): imports Kc.10,239,130,000; exports Kc.14,344,960,000. Railways open to traffic (1946) 8,154 mi.; locomotives 2,626; goods trucks 53,000; passenger coaches 8,853; roads (main) 22,770 mi., (secondary) 16,758 mi.; airways, miles flown 2,129,400, passengers carried 91,924. Inland waterways, freight transported 1,443,600 short tons.

**Industrial Production.**—Production (July 1946–June 1947) in short tons: bituminous coal 16,941,600; brown coal 22,885,369; iron ore 14,744,700; pig iron 13,644,000; ingots and castings 22,330,900; vehicles, etc. (numbers produced), railway engines 207, trucks 18,629, tractors 3,065, cars 6,967, bicycles 151,736, machine tools (Jan.–June 1947) 3,575, sewing machines 35,346. Textiles (Jan.–June 1947) in short tons: staple fibre 7,565; rayon 1,314; cotton yarn 31,277. Total employed in industry (Dec. 1946) 1,086,500. Unemployed (April 1947) 27,000.

**Agricultural Production.**—Harvest (1946), in short tons: wheat 1,350,104; rye 1,429,726; barley 840,759; oats 908,705; mixed corn 14,854; maize 194,029. Preliminary estimates for 1947: wheat and rye 2,716,400; other grain crops 2,141,180. Other production (1946) beef 132,200; pork 158,400; lard 32,400; butter 54,000; eggs (number) 747,722,000. Livestock population (1946): horses 648,552; cattle 4,142,867; pigs 2,362,151; sheep 570,319; goats 1,310,700.

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(H. Ko.; X.)

**Dahomey:** *see* FRENCH OVERSEAS TERRITORIES.

**Dairy Industry, Bureau of:** *see* AGRICULTURAL RESEARCH ADMINISTRATION.

**Dairying.** Production of the dairy industry in the United States as measured by number of cows declined slightly in 1947 from the wartime peak attained in 1945 and was also somewhat below the output of 1946. The number of milk cows on farms Jan. 1, 1947, was estimated at 26,100,000 head, about 2% less than a year earlier; the number of replacement heifers was also about 3% less. Average production per milk cow was estimated at about 5,000 lb. U.S. consumption of fluid milk declined to 400 lb. per person in 1947 from the peak of 433 lb. in 1945, but was still above the pre-World War II average of 345 lb.

Production of butter, cheese and evaporated milk each increased in 1947. Exports of dairy products declined from the peak of 1944, when the equivalent of about 5% of the total U.S. milk supply was shipped to other countries. In 1945 and 1946 this proportion declined to about 4%. In 1946 exports took about 1% of butter, 17% of cheese, 30% evaporated milk, 31% condensed milk, 77% dried whole milk and 25% nonfat dry milk. Previous to 1947 about one-fourth of these shipments went to Great Britain, but in the first half of 1947 nearly one-half the exports went to Britain. British buying dropped sharply toward the end of the year, however.

The price of dairy products to farmers began to decline early in 1947. Milk averaged $4.96 per cwt. in January then declined to $3.78 per cwt. in July followed by an advance to $4.35 in September and $5.02 in December. Butterfat prices followed the same trend. At the same time the prices of feed advanced. (*See* also BUTTER; CHEESE; MILK.)

(J. C. Ms.)

**Dalton, (Edward) Hugh John Neale** (1887– ), British politician, was born on Aug. 26 at Neath, Glamorganshire, Wales, the son of the Reverend John Neale Dalton, canon of St. George's, Westminster, and was educated at Eton and King's college, Cambridge. He served on both the French and Italian fronts during World War I, and after the Armistice began practising law. After contesting four by-elections he was elected Labour member for the Peckham division in Oct. 1924. From 1929–31 and from 1935 onward he sat for the Bishop Auckland division. In Churchill's coalition government he was minister of economic warfare from 1940–42, and from 1942–45 president of the board of trade. When the Labour party was returned to power in July 1945, Dalton was appointed chancellor of the exchequer.

On Nov. 12, 1947, Hugh Dalton presented a supplementary budget, his fourth after taking office, which was designed to curtail spending, in which he announced taxes on totalizator bets on dog tracks and on football pool stakes, increases in purchase tax and profits tax, and in duty on beer, wines and spirits. The following day he apologized to the house of commons for "a grave indiscretion" in revealing details of his budget proposals to a newspaper correspondent. The newspaper published the information before he had made the announcement in the house. A few hours later it was announced that in view of this incident the chancellor had offered his resignation, which the prime minister felt it his duty to accept. Although Dalton had many critics, his sudden departure was regarded as a lamentable personal tragedy.

**Dams.** Food requirements and fuel shortages caused increased activity during 1947 in the construction of dams in connection with irrigation and hydroelectric power developments in various parts of the world.

The world's highest earthfill dam, Anderson Ranch dam in the United States, was practically complete in Sept. 1947. With a capacity of 500,000 ac.ft., it had already stored 130,000 ac.ft.

Foundation excavations at the Davis dam, under construction on the Colorado river 65 mi. below Hoover dam, disclosed a severely jointed rock foundation with numerous faults, necessitating design changes and relocation of the 225,000-kw. powerhouse, intake structure, and spillway. The design of the main embankment of the dam was not affected.

Awarding of the contract late in 1947 for the first stage of the Garrison dam on the Missouri river, launched the construction of the world's second largest dam, major element of the Missouri valley joint program of the U.S. army engineers and the U.S. bureau of reclamation. This stage of the work involved excavation of 6,000,000 cu.yd. of material from the foundations of the powerhouse and intake, and the placing of about 7,000,000 cu.yd. of embankment in the main dam.

The third stage of the Ross dam on the Skagit river was under construction during 1947 to raise the height of the dam to 545 ft., and increase its storage capacity to 1,400,000 ac.ft.

Dams for several combined flood control and hydroelectric projects were undertaken during 1947 by the U.S. army engineers, including Buggs Island dam on the Roanoke river in Vir-

*Chief Dams Completed or Under Construction During 1947*

| Name of Dam | River | Place | Type | Maximum Height, Ft. | Crest Length, Ft. | Volume (Cu. yd.) | Purpose* | Built by | Progr |
|---|---|---|---|---|---|---|---|---|---|
| L'Aigle . . . . . . . | Dordogne | Cantal, France | Concrete gravity arch | 296 | 963 | — | P | — | C |
| Anderson Ranch . . | Boise, S. Fork | Idaho, U.S. | Earthfill‡ | 456 | 1,350 | 9,600,000 | I,F,P | U.S. bureau of reclamation | U |
| Bluestone . . . . . . | New | West Virginia, U.S. | Concrete gravity | 180 | 2,060 | 950,000 | F,P | U.S. army engineers | U |
| Claerwen . . . . . . | Elan | South Wales, England | Concrete curved gravity | 182 | 1,066 | — | W | City of Birmingham, water committee | U |
| Davis. . . . . . . . | Colorado | Arizona, U.S. | Earth and rockfill | 138 | 1,600 | 4,230,000 | P | U.S. bureau of reclamation | U |
| Eupen . . . . . . . | Vesdre | Belgium | Concrete curved gravity | 214 | 1,475 | 520,000 | W | Belgian ministry of public works | U |
| Garrison . . . . . . | Missouri | North Dakota, U.S. | Earthfill | 210 | 12,000 | 75,000,000 | I,F,N,P | U.S. army engineers | U |
| Génissiat . . . . . . | Rhône | Ain-Haute-Savoie, France | Concrete gravity | 340 | 650 | 720,000 | N,P | Compagnie Nationale du Rhône | U |
| John Martin . . . . | Arkansas | Colorado, U.S. | Earthfill and concrete gravity | 130 | 14,000 | 5,915,000 (earth)<br>220,000 (concrete) | F | U.S. army engineers | U |
| Kaprun . . . . . . . | Salzach | Salzburg, Austria | Concrete arch | 393 | 1,024 | — | P | — | U |
| Loch Sloy . . . . . . | Loch Sloy | Scotland | Concrete buttress | 165 | 1,160 | — | P | North of Scotland Hydroelectric board | U |
| Merriman . . . . . . | Rondout | New York, U.S. | Earthfill | 200 | 2,500 | 6,600,000 | W | N.Y. board of water supply | U |
| Ross . . . . . . . . | Skagit | Washington, U.S. | Concrete arch | 545 | — | — | P | Seattle dept. of lighting | U |
| Stewartville . . . . | Madawaska | Ontario, Canada | Concrete gravity | 200 | 850 | — | P | Hydroelectric Power Commission of Ontario | U |
| Stirling . . . . . . . | Harvey | Western Australia | Earthfill | 158 | 930 | 727,000 | I | Western Australia public works department | C |

*F—flood control, I—irrigation, N—navigation, P—power, W—water supply. †C—completed in 1947, U—under construction. ‡Highest earthfill dam in world.

ginia, Bull Shoals dam on the White river in Arkansas and Clark Hill dam on the Savannah river between Georgia and South Carolina.

In Colombia, the Anchicaya dam, a concrete arch dam 150 ft. high and 520 ft. long, was under construction during 1947 by the Central Hydroelectrica del Rio Anchicaya to produce 88,000 kw.

Stirling dam, Australia's largest and highest earth dam, was completed during 1947. Construction for irrigation purposes progressed during 1947 in Victoria, at Rocklands dam on the Glenelg river, at Cairn Curran dam on the Loddon river and in New South Wales, at five irrigation dams including Glenbaum dam on the Hunter river and Ballyrogan dam on the Lachlan river.

The Mingechaur dam, an earthfill dam 250 ft. high and 5,000 ft. long, on the Kura river in Transcaucasia, was reported to be under construction in 1947.

Europe's highest dam, a concrete structure 460 ft. high, was under construction in 1947 on the Non river in Northern Italy to provide hydroelectric power. On the Sarine river in Switzerland, construction of the 261-ft.-high Rossens dam was speed during 1947 to make available 60,000 kw. of hydroelectric pow

SIXTY-TON "SPIDER," part of the first generating unit to be put into service after the close of World War II, is shown being hauled into place by trailer at the Grand Coulee dam, Wash., in June 1947

In France, on the upper Rhône river, the Génissiat dam, se ond largest concrete dam in Europe, was being rapidly co pleted in 1947, to provide 400,000 kw. of hydroelectric pow Concrete placing proceeded at the rate of 1,200 cu.yd. per da attaining a maximum during one 24-hr. period of 3,500 cu.y L'Aigle dam, completed in 1947, and second of four dams to erected on the Dordogne river, was expected to provide abo 200,000 kw. of hydroelectric power, generating 400,000,0 kw.hr. annually.

At Solleftea, Sweden, a concrete dam and 55,000-kw. hyd electric plant on the Angerman river was completed duri 1947.

The table herewith lists 15 important dams of the world co pleted or under construction during 1947. (*See* also AQU DUCTS; IRRIGATION; TENNESSEE VALLEY AUTHORITY.)

(B. O. M.)

## Dance.

Although the dance still maintained the interest a enthusiasm of the general public in 1947, it distinct felt the tightening up of public spending. This meant few new works, smaller travelling companies and reduced numb of performances.

**United States.**—Ballet society continued to present n works, develop young artists and build an audience to supp a contemporary lyric theatre.

*Pastorella* presented at the Hunter College playhouse, N York city, in January was based on the Mexican play *I Pastores* and was choreographed by Lew Christensen to mu by Paul Bowles. On the same program Iris Mabry present two original solo dances, and Ratna Mohini, a Javanese danc made her U.S. debut.

In March at the Central High School of Needle Trades, N York city, three ballets were presented. A dramatic ballet *T Minotaur,* choreographed by John Taras, was set to music Elliott Carter. On the same program *Zodiac,* to contempora popular music by Rudi Revil, dealt with the movement a rhythm of the cheap dance hall as seen through the eyes the astrologer. Todd Bolender was choreographer and danc *Highland Fling,* a romantic ballet in three scenes by Bill Dol with music by Stanley Bate, combined the national folk danc with the classical ballet.

In May two more ballets were premiered. *The Seasons,* ballet in one act with choreography by Merce Cunningha used the idiom of the modern concert dance. John Cage's *T Seasons* was the musical background. *Black Face* on the sa program was set to the music of Carter Harman and chor graphed by Lew Christensen.

The Ballet Russe de Monte Carlo scored in its New Y seasons, its Mexican sojourns and its coast-to-coast tour. Alexandra Danilova, Fred Franklin, Natalie Krassovska, Leon Danielian, Mary Ellen Moylan and Ruthanna Boris danced leading roles.

Three new ballets were presented. Ruthanna Boris' *Cirque de Deux* to music by Charles Gounod was a charming novelty and made an instantaneous hit. A witty satire on the pas de deux, it drew on the circus for its setting and apparatus. Antonio Cobos choreographed *Madroños*, a ballet in the Spanish idiom, that turned out to be colourful, lively and pleasant, but without any special theme or depth. It was set to music by Moszkowski and Yradier. *Lola Montez* with choreography by Edward Caton, music by Fred Witt, was less successful. It was concerned with the romantic interlude of the famous dancer which took place when she was driven to the United States to escape a student uprising in Austria. *Virginia Sampler,* to music by Leo Smit and choreography by Valerie Bettis, was an experiment in blending modern dance technique with the traditional ballet. The theme was the struggle between tradition and progress which took place in the romantic Virginia Sampler of early Virginia.

Besides a country-wide tour, Ballet Theatre had its usual spring and fall seasons in New York city. To inaugurate its 1947–48 season it presented a new and highly successful classical ballet by George Balanchine to Peter Tchaikovsky's *Theme and Variations.* Decor was by Woodman Thompson.

A revival of *Princess Aurora* included the rose adagio, and both the pas de deux of the prince and the princess and that of the prince and the lilac fairy. Principal dancers for the season were Igor Youskevitch, Nora Kaye, Hugh Laing, Alicia Alonso and John Kriza.

Following the New York season the Original Ballet Russe opened at Covent Garden, London, in July, featuring Tatiana Riabouchinska and David Lichine. John Taras, Nicholas Orloff, Vladimir Dokoudovsky, Roman Jasinsky, Genevieve Moulin and Vania Psota danced leading roles.

Two new ballets, both by Boris Kniaseff, were presented. *Silver Birch,* to music by Tchaikovsky, was a lyrical story of a birch tree with whom the earth was in love. The other ballet *Piccoli* was a witty burlesque on marital infidelity, and was hilariously received.

In October the company opened a season at the Palais de Chaillot, Paris. After this the company recessed. Some of the U.S. dancers returned to their own country, but a nucleus remained with Col. W. de Basil.

In June the San Francisco ballet at Sigmund Stern's Grove presented *Coppelia* in three complete acts. In August at Stern's Grove it introduced *Dr. Pantalone,* music by Domenico Scarlatti, together with divertissements from *Nutcracker Suite* and a ballet set to Ludwig von Beethoven's *Sonata Pathétique.*

In November the San Francisco Civic Ballet association made its first appearance at the War Memorial opera house, San Francisco, with Alicia Markova and Anton Dolin as guest artists. *Mephisto* was presented to the San Francisco audience at a world premiere with choreography by Adolph Bolm. The following night the company gave another performance at the War Memorial opera house and presented *Parranda* set to Morton Gould's new *Symphonette.* Choreography for this ballet was by William Christensen. Other ballets given were *Lady of the Camellias, Pas de Deux* from the *Black Swan, Henry VIII, Fantasia* and *Giselle.*

Several small ballet companies made their appearance. Ruth Page and Bentley Stone formed a small touring ballet. Nana Gollnar and Paul Petroff organized a Ballet Intime for tour. Miriam Winslow, U.S. dancer, formed a company of six men and eight girls in South America which toured Argentina with the following repertoire: *Barn Dance, Valses Nobles et Sentimentales,* a new ballet based on Nathaniel Hawthorne's *Scarlet Letter* and a group of solos. Simon Semenoff and company on the west coast presented a streamlined edition of *Coppelia* and several of Semenoff's own ballets. Markova and Dolin went on tour with their own small ballet company. Maria Slavenska and George Zoritch went on tour with Ballet Variante.

MARTHA GRAHAM and company in "Letter to the World," performed at the Ziegfeld theatre, New York city, in Feb. 1947

Harald Kreutzberg gave a series of recitals in New York city and was enthusiastically received by his audiences. Trudi Schoop and company returned to New York after an absence of eight years. Jose Limon and company gave a series of recitals. Martha Graham gave a successful Broadway season and presented her own *Errand into the Maze* and Erick Hawkin's *Stephen Acrobat.* Peter Hamilton organized a small company of his own and appeared at the Studio theatre, New York city.

Paul Draper made a political speech the theme of his newest tap dance and created a furor with its humour. Ted Shawn took a leave of absence from Jacob's Pillow, Lee, Mass., and travelled and lectured as far away as Australia. Arthur Mahoney produced a jazz ballet *Crosstown, Parnassus* to George Frederick Handel's music and *La Noche Clara.*

Edwin Strawbridge and company continued to dance for 500,000 children a year in his coast-to-coast tour. His dance plays in 1947 were *Simple Simon* and *An Arabian Night.* Ivy Kitchell and Miriam Marmein continued their country-wide tours.

La Meri, besides conducting a lively program of teaching in the School of Ethnologic Dance, and dancing and producing in the Dance theatre, found time to organize a Young Artists series which presented 12 young artists. Dance theatre also lent its facilities to as many well-known dancers. In October La Meri launched the Exotic Ballet company with a season of ballets and dance-dramas.

ALICIA ALONSO and Igor Youskevitch in the grand *Pas de Deux* from "The Nutcracker" during the 1947 season of repertoire performances by the Ballet theatre

Ruth St. Denis resumed her activities in the Church of the Divine Dance in California. Catherine Littlefield choreographed Sonja Heine's ice show with numbers set to classical music.

Civic ballets showed increase in number and activities. Appleton, Wis., launched a civic ballet. The Young People's Theatre of New Jersey held to its intention of two or more large programs each year and the Atlantic Civic ballet gave 14 performances in Georgia.

Broadway continued to feature dance in its productions and signed dance artists for the choreography as well as the dancing. Such stars as Harold Lang, James Starbuck, Dorothy Etheridge, Nicolas Magallanes, Barton Mumaw and Pearl Primus danced the leading roles.

**Great Britain.**—In England Sadler's Wells ballet had a brilliant five-month season from January to June, sojourns to the provinces and a two-month continental tour which included appearances in Moscow. For the fall season Léonide Massine restaged his *Mam'zelle Angot* and presented it for the first time in Europe with Margot Fonteyn, Michael Somes, Alexander Grant and Moira Shearer. Frederick Ashton's new ballet *Valses Nobles et Sentimentales* was presented to the music of Maurice Ravel's waltzes, with decor and costumes by Sophie Fedorovitch.

During the spring season in London, Ballet Rambert presented *Plaisance,* a classical suite by Walter Gore, to Gioachino Rossini's music. *The Sailor's Return* with choreography and decor by Andrée Howard, music by Arthur Oldham, was enthusiastically received.

Ballet Rambert left England for Australia via Canada and stopped off in the United States long enough to be entertained by the San Francisco ballet.

International ballet presented Nana Gollnar and Paul Petroff as guest artists. The company then toured the suburbs for three weeks and finally played the State cinema at Kelburn for a week.

The Metropolitan ballet, newest English company, presented *The Lovers' Gallery* by Frank Staff, music by Lennox Berkeley, decor by George Kirsta. The company was organized by Leon Hepner in January with Victor Gsovsky as maitre de ball and choreographer of the ballets *Pygmalion* and *Dances* *Galanta.* During the fall season John Taras staged a new ball for the company called *Designs with Strings* to Tchaikovsky music.

The London dance season was further enriched by the a pearances of the Anglo-Polish ballet, the Ballets des Cham Elysées and the Indian dancer, Ram Gopal, with his 30 dancer

**France.**—Both the Paris Opéra and Opéra Comique in Par gave weekly ballet performances, equally popular with the pul lic. At the former, Serge Peretti choreographed *Call of t* *Mountain* to music by Arthur Honneger. Its theme was li in the Tyrol. At the Opéra Comique J. J. Etcheverry put *T* *Barber of Seville* into ballet form and called it *The Usele* *Caution.* He also choreographed Oscar Wilde's *Nightingale an* *the Rose,* to P. Auclert's music and *Khamma,* a ballet by Clau Debussy.

The Opéra Comique boasted such dance artists as Mar Louise Didion, Jean Guelis, Torres (the Spanish dancer Michael Royne and Lucienne Berggren. The Paris Opéra ha beside Lysette Darsonval, Tamara Toumanova and Alexand Kalioujny.

In its summer season the Paris Opéra ballet featured To manova, Kalioujny and Maria Tallchief in Balanchine's *L* *Baiser de la Fée* to music by Igor Stravinsky. Balanchine's ne ballet *Le Palais de Cristal,* to Georges Bizet's symphony, ha settings by Lenor Fini.

Grand Ballet de Monte Carlo, organized by the Marqu George de Cuevas, opened at Vichy and enjoyed a successf season. It featured Andre Eglevsky, Rosella Hightower, Ethe Pagava, Youly Algaroff, George Skibine and Yvonne Patterso The U.S. ballerina, Hightower, was acclaimed by the Par press. Nijinska and Lifar were choreographers and Willia Dollar's *Constantia* had its European debut. After vario appearances in the provinces the company opened in Paris the Alhambra theatre, with *Les Sylphides, Brahms Variation* *Romeo and Juliet* and *Pictures at an Exhibition.*

Ballets des Champs Elysées had a season in England ar France as well as touring the provinces. Among the season novelties was a reconstruction of the old ballet *Les Sylphide* *Le Bal des Blanchisseuses* to music by Vernon Duke wi choreography by Roland Petit had many styles of techniq but the result was movement and fun. Danielle Darmanc skating star as well as ballerina, and Petit danced the princip roles.

Opera of Monte Carlo ballet under Serge Lifar's directi also had a popular season.

**Other Countries.**—The Nederlandsche opera in Amsterda was formed of six men and ten women dancers; Darja Colli was maitresse de ballet as well as choreographer and dance De Amsterdamsche Ballet Combinatie continued to add balle to its repertoire. Choreographer Max Dooyes and Pieter va der Sloot appeared also as soloists. Marie Jeanne van der Vee and Mascha ter Weeme were the ballerinas.

In Stockholm, Sweden, the Danish Royal theatre presente *Sylvia* staged by Niels Bjoern Larsen, and Harold Lander ballet to Karl Czerny's *Etudes.*

In Italy La Scala had a short ballet season with the oper Aurel Milloss did most of the choreography. Featured dance were Luciana Novaro, Milly Wanda Clerici and Ugo dell 'Ar

The Jooss ballet after an unsuccessful U.S. tour returne for a limited tour in Europe, had a season in Paris and the returned to London to hibernate before appearing in publi again.

The Stadtische Opera ballet produced Henri Sauguet's *L* *Nuit,* Manuel de Falla's *Three-Cornered Hat* and William Wa ton's *Façade.* Jens Keith was the choreographer and the leading dancers were Jockel Stahl, Lilo Herbeth, Liselotte Koster and Eddy Albertini.

Mary Wigman choreographed and presented a group of dancers but did not dance herself.

The Czech ballet leader, Sasha Machov, set a record as director of the State ballet by introducing four new ballets in one evening—*Spring Symphony,* a series of classical variations to two short symphonies by J. V. Stamic, *Night on the Bare Mountain* to music by Modest Mussorgsky, *Lachian Dance,* based on Moravian folklore, and *Wedding,* a ballet in three scenes by the composer V. Nelhybel.

At the Grand Opera theatre Vaclav Kaslik trained the singers as dancers and produced operas conceived as ballets, in addition to presenting regular ballet performances. An attempt was made to harmonize various techniques of movement and use light to accentuate the rhythm of movement.

Mexico enjoyed a varied program of ballet for 1947. Irene Hawthorn from the United States with the local Waldeen ballet made the Mexican opera season a real dance event. The new Institute of Fine Arts took over the Waldeen ballet and presented a series of programs in March. The Markova-Dolin Co. at the Palacio de Bellas Artes in Mexico City joined forces with the local ballet headed by Gloria Campobello and George Chaffenberg. (L. Mh.)

**Ballroom Dancing.**—The year 1947 brought a return to the more graceful type of dancing. The waltz and tango showed only a slight increase but the samba became extremely popular throughout the world, and the rumba continued to hold its strong appeal.

Jitterbug dancing, more commonly called "swing," decreased in favour toward the last half of the year. Fox trots of the romantic, ballad type were more popular and with these, dancers used smooth walking and balance steps. Even the youngsters avoided the acrobatic antics of jitterbug. This was especially evident at the big contests held in England, Australia and the United States.

The slightly increased interest in waltz was probably caused by two unusually popular songs—a revived and revised version of "I Wonder Who's Kissing Her Now" and "The Anniversary Song" from the motion picture *The Jolson Story.* The movie *The Great Waltz* was redistributed in November because of public interest in the dance.

Through motion pictures, the radio and recordings, the same music and the same type of dancing spread throughout the world at almost the same time. There were no new ballroom dances in 1947. (A. Mu.)

## Dartmouth College.

The major developments at Dartmouth in 1947 were a record-breaking enrolment of 3,000 students in the fall semester and the inauguration of the new required course for all seniors in "Great Issues." Dartmouth's total of 2,850 students during 1946–47, as compared with the prewar 2,400, crowded all facilities in the village of Hanover, N.H., but the trustees determined that the capacity could be stretched to permit accepting a full freshman class of nonveteran secondary-school graduates. There were 6,000 applications for 675 places in the new entering class which, together with returning veterans in the upper years of college, increased total undergraduate enrolment to record figures. The three associated schools of medicine, business and engineering were also crowded to capacity. A gradual decrease in enrolment at Dartmouth was to be effected as rapidly as graduations and pressure from returning veterans would permit. About 300 students were married and were provided housing in apartments constructed by the college and by the government. Pres. John Sloan Dickey directed the new course required of all seniors beginning in the fall of 1947. "Great Issues 81–82" presents important issues in the broad fields of the making of peace, the building of a good economic society, and the values by which U.S. culture can live. It emphasizes the use and analysis of public information. The purpose of this course is to bridge the gap between undergraduate education and the responsibilities of adult living. President Dickey, guest lecturers and members of the faculty conducted the course. (For statistics of endowment, enrolment, faculty, library volumes, etc., *see* Universities and Colleges.) (S. C. Ha.)

**Dates:** *see* Fruit.
**Daughters of the American Revolution, National Society of:** *see* Societies and Associations.
**DDT:** *see* Entomology.

## Deafness.

No reliable census of the adult deaf had been made in the United States in 1947, but a rough estimate indicated there were 100,000. Approximately 18,000 deaf children were being educated in 64 public residential schools, 118 public day schools and 20 denominational and private schools in the United States. Mothers of deaf children were advised to seek information about early training so that a child's native ability would not be unnecessarily retarded.

The American Hearing society, Washington, D.C., estimated that in 1947 there were 10,000,000–15,000,000 people in the United States who were hard of hearing to some extent in one or both ears. But only 4,000,000 or 5,000,000 adults were believed to have a serious handicap and at least 3,000,000 required hearing aids or the use of lip reading or both. Probably no more than 800,000 used hearing aids. It was also estimated that there were at least 1,000,000 or more hard-of-hearing children in the public schools.

Significant progress was made in the establishment of centres at which the hearing loss might be determined and assistance given in the selection and fitting of a hearing aid. A few of these centres were established in the larger medical schools while others were operated at a few of the local branches of the American Hearing society in about 117 cities.

The otologists were better able to perform the fenestration operation and thus ameliorate the hard of hearing by surgery. The ear specialists had learned to diagnose with more reliability the type of hearing defect for which the fenestration operation was most likely to give successful results. It is relevant to point out that improvement by the operation, no matter how well performed, does not re-establish normal hearing.

In 1947 most of the hard-of-hearing persons were rehabilitated by wearing aids or by lip reading or a combination of the two. Most of the hearing aids sold in 1947 were of the "single unit" type in which all the component parts were enclosed in a single case with the exception of the receiver and its connecting wire. The hearing aids weighed approximately 7 to 10 oz. and cost from $75 to $200. The upkeep for maintaining the batteries was approximately 10 cents per day on an 8-hr. operational basis.

The hearing loss of 30 to 35 decibels in the speech frequency was regarded as a handicapping loss. The hard-of-hearing person was advised to have his ears examined by a physician before purchasing a hearing aid. It was considered essential that a comfortable ear mould be made and fitted before attempting to select a hearing aid.

A list of acceptable hearing aids and requirements for acceptance was obtainable from the Council on Physical Medicine, American Medical association, 535 N. Dearborn St., Chicago 10, Ill. (H. A. C.)

**Deaths** (of prominent persons in 1947): *see* OBITUARIES.

**Death Statistics.** Provisional reports indicated that the death rate for the United States in 1947 was practically the same as that for 1946, the best year on record. The rates for January, February and September of 1947 were lower than for the like months of 1946, but for each subsequent month through August, the later year had rates at the same, or a higher, level than the earlier year. For the first nine months as a whole, the death rate in 1947 was only 1% higher than in 1946. During the entire year 1946, the total number of deaths in the United States was estimated as 1,402,000—a rate of 10.0 per 1,000 population. For Canada also, there was only a small indicated change in the death rate from 1946 to 1947; reports from cities of 10,000 or more showed an increase of 2.6% for the first eight months of 1947 over the like period of 1946. In Canada there were, altogether, 113,519 deaths during the whole of 1946, the rate being 9.2 per 1,000. Fragmentary reports from England and Wales pointed to a rise in the death rate from 1946 to 1947; a comparison based upon the first ten months of both years for London and the great towns showed a 7.4% rise in the number of deaths. In all of England and Wales, there were 492,088 deaths during 1946—a rate of 11.5 per 1,000 population.

The provisional death rates per 100,000 population during 1946 in the United States for the more important causes of death were: diseases of the heart 306.6; cancer 129.6; cerebral haemorrhage 90.5; total accidents 71.2, of which motor vehicle accidents accounted for 24.1; nephritis 58.0; pneumonia and influenza 46.1; tuberculosis 37.2; premature birth 29.1 and diabetes 24.7. The provisional maternal mortality rate for 1946 was 1.6 per 1,000 live births, as compared with a rate of 2.1 for 1945.

Indications from the records of millions of industrial policyholders of the Metropolitan Life Insurance company pointed to reductions, from 1946 to 1947, in death rates from pneumonia and influenza, tuberculosis, acute poliomyelitis, diabetes, appendicitis, nephritis, measles, suicide and accidents. On the other hand, the rates increased for cancer, diseases of the heart and cerebral haemorrhage. Rates according to age, for ages one year and more were as follows (on a provisional basis): ages 1 to 14 years, 1.1 per 1,000; ages 15 to 24, 1.7; ages 25 to 44, 3.2; ages 45 to 64, 13.7; and ages 65 and more, 65.5.

A study by Louis I. Dublin and Mortimer Spiegelman of the longevity and mortality of U.S. physicians, based upon records for the period 1938–42, showed that their expectation of life was practically identical with that of the general population, when compared age for age (*Journal of the American Medical Association,* Aug. 9, 1947). Thus, for male physicians at the age of 25, the expectation of life was 43.54 years, only a little greater than the comparable figure of 43.31 years for white males in the general population of the United States. For female physicians at age 25, the expectation of life was 47.10 years, compared with 46.86 years for white females generally. When the rates of male physicians were compared, age for age, with those for white males in the general population, important differences were found. Thus, at ages 25 to 34 years, the death rate for male physicians, 173 per 100,000, was 39% below the rate for white males at the same ages. At ages 35 to 44 years, the rate for the physicians was the lower by 19% and at ages 45 to 54 by only 2%. This diminishing advantage turned to an actual disadvantage at ages 55 to 64 years, where physicians had the higher rate by 11%, and again at 65 to 74 years where their death rate was the higher by 5%. At ages 75 and more, male physicians and white males in the general population had practically identical death rates. It was surmised that the advantage of the younger physicians reflected the lower mortality of the mo favoured social-economic classes from which most of them a drawn; also, those who undertake and last through the requir ments of a medical education are usually a select group in rega to health. The strain of a strenuous professional life appea to take its toll with advance in age, as the death rates of phys cians at first approach and then exceed those of the gener population. The physicians surviving to the highest ages, whe their death rates are the same as in the general populatio may be those who led a less strenuous career or who have t advantage of a better heredity or environment. From a con parison of mortality according to cause of death among ma physicians and white males in the general population in t United States, it was concluded that the physicians have t higher death rates from the degenerative conditions, but low death rates from most surgical conditions, infectious diseas and accidents.

A survey of occupational differences in mortality among wag earners was made by Dublin and Robert J. Vane from records white male industrial policyholders of the Metropolitan Life I surance company for 1937–39 (*Monthly Labor Review,* Ju 1947). A relatively high mortality from tuberculosis was o served in occupations having the common characteristic exposure to silica dust; among such occupations were san blasters, stonecutters, underground miners (other than coal pottery workers, iron foundry workers and metal grinder Pneumonia was relatively high, as a cause of death, in occup tions where there was undue exposure to heat, dust or fume occupations in this category are welders, iron and steel found operatives, underground miners (other than coal), potte operatives, buffers and polishers of metal and automobile fa tory operatives. Excess mortality from accidents was record for electric light and power linemen, structural iron painte and workmen, steeplejacks, building wreckers, lumbermen a loggers, quarrymen, railway enginemen and trainmen, roofe and slaters, coal miners, fishermen, seamen and other mari workers.

The beneficial effects of insulin upon the longevity of di betics was made strikingly apparent from a study of the re ords of diabetic patients at the New England Deaconess hos tal in Boston (*Statistical Bulletin of the Metropolitan Li Insurance Company,* Aug. 1947). The contrast was most e dent in a comparison of expectation of life in young childre In the pre-insulin era, the expectation of life for a diabet child of age 10 was only 1.3 years in 1897–1913, and 2.6 yea in 1914–22. In the early insulin era, 1922–25, the figure ro sharply to 14.3 years, and continued to mount rapidly, reachi 45.0 years for the period 1939–45. The higher ages also show great gains in expectation of life. The record of diabetics, ho ever, still remained below that of the general population at t same ages and, with more intensive educational measures amo both physicians and patients, further gains were anticipated.

A survey of disasters involving five or more deaths during t decade 1937–46 (*Statistical Bulletin of the Metropolitan Li Insurance Company,* March 1947) revealed that there were 9 such accidents costing 12,987 lives; 14 disasters each took 1 or more lives. The peak year was 1942, when 118 catastroph resulted in about 1,950 deaths, and the low year was 1939, wi 66 and about 600 deaths. It was found that about nine-tent of the accidents, and more than three-quarters of the deat resulted from human failures and not from natural causes.

The average length of life (expectation of life at birth) c responding to mortality conditions among the general popul tion of the United States during 1945, the latest year of reco in 1947, was: white males 64.44 years; white females 69. years; Negro males 56.06 years; Negro females 59.62 yea

In each case, the figure was the highest yet on record. (*See* also ACCIDENTS; CENSUS DATA, 1947; DISASTERS; INFANT MORTALITY; SUICIDE STATISTICS.)

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**Debt, National.** For the second successive year the U.S. government was able to reduce the gross public debt in 1947. From a peak of $279,214,000,000 reached at the end of Feb. 1946, the national debt was reduced to $259,149,000,000 by the end of Dec. 1946 and to $256,900,000,000 by the end of Dec. 1947. In his budget message of Jan. 12, 1948, Pres. Harry S. Truman estimated that by the end of June 1948 the national debt would be further reduced to $250,900,000,000.

Table I.—*National Debt of the United States, 1913–48*

| June 30 | (Millions of dollars) | June 30 | (Millions of dollars) |
|---|---|---|---|
| 1913 | $1,193 | 1931 | $16,801 |
| 1914 | 1,188 | 1932 | 19,487 |
| 1915 | 1,191 | 1933 | 22,539 |
| 1916 | 1,225 | 1934 | 27,053 |
| 1917 | 2,976 | 1935 | 28,701 |
| 1918 | 12,244 | 1936 | 33,545 |
| 1919 | 25,482 | 1937 | 36,427 |
| 1920 | 24,298 | 1938 | 37,167 |
| 1921 | 23,976 | 1939 | 40,445 |
| 1922 | 22,964 | 1940 | 42,971 |
| 1923 | 22,350 | 1941 | 48,961 |
| 1924 | 21,251 | 1942 | 72,422 |
| 1925 | 20,516 | 1943 | 136,696 |
| 1926 | 19,643 | 1944 | 201,003 |
| 1927 | 18,510 | 1945 | 258,682 |
| 1928 | 17,604 | 1946 | 269,422 |
| 1929 | 16,931 | 1947 | 258,286 |
| 1930 | 16,185 | 1948 | 250,900 |

Source: Data from 1913 to 1947 are from U.S. treasury department, daily treasury statement (revised); 1948 estimated.

Thus, in the period after Feb. 1946, the upward trend of the national debt which had been apparent since the onset of the depression of the 1930s was reversed. The debt had risen from $16,185,000,000 in 1930 to $42,971,000,000 in 1940, partly because government revenues fell to a low level during the depression but, more importantly, because of the expenditure policies which were adopted by the government to combat the depression. During the years of rearmament and war, however, the national debt increased by even greater amounts to attain the record level of 1946.

The new trend of debt retirement was begun by the treasury in March 1946. Gross reductions in marketable interest-bearing securities amounted to more than $34,000,000,000 between that date and the end of 1947. The distribution of this reduction among the various types of securities is shown in Table II. The debt reduction program in 1947, as in 1946, was concentrated in the shorter-term obligations of the government.

The funds used to retire the aggregate maturities of $23,197,000,000 during the last ten months of 1946 were obtained chiefly from the general fund cash balance accumulated during the Victory Loan drive. As the cash balance was drawn down to a level commensurate with reduced expenditures following the end of World War II, the source of funds shifted. In 1947 funds for gross debt retirements were obtained chiefly from net budgetary surpluses and a continued growth in other public debt accounts. Nonmarketable savings bonds were increased by $2,312,000,000 and special issues to U.S. government agencies and trust funds by $4,370,000,000. The former consisted of series A to G savings bonds, while the latter was made up primarily of the investments of the various retirement, unemployment and insurance systems operated by the government.

Table II.—*Decrease in Marketable Interest-Bearing Public Debt, March 1, 1946, to Dec. 31, 1947*

(Millions of dollars)

| | 1946 | 1947 | | |
|---|---|---|---|---|
| | March 1– Dec. 31 | Jan. 1– June 30 | July 1– Dec. 31 | Jan. 1– Dec. 31 |
| Treasury bills | −1 | 1,258 | 639 | 1,897 |
| Certificates of indebtedness | 11,426 | 4,691 | 4,076 | 8,767 |
| Treasury notes | 9,461 | 1,948 | −3,233 | −1,285 |
| Treasury bonds—bank restricted | 3,791 | 0 | 1,459 | 1,459 |
| Treasury bonds—bank eligible | −1,479 | 0 | | |
| Postal savings and other bonds | 1 | 13 | 1 | 14 |
| Total marketable interest-bearing public debt | 23,197 | 7,911 | 2,944 | 10,855 |

Source: U.S. treasury department.

" 'TIL DEATH DO US PART," by Justus of the *Minneapolis Star Journal.* Reductions in the U.S. public debt totalled more than $11,000,000,000, but the balance was still astronomical at the end of the fiscal year 1947

Table III.—*Source of Funds for Reduction in Marketable Interest-Bearing Public Debt, March 1, 1946, to Dec. 31, 1947*

(Millions of dollars)

| | 1946 | 1947 | | |
|---|---|---|---|---|
| | March 1– Dec. 31 | Jan. 1– June 30 | July 1– Dec. 31 | Jan. 1– Dec. 31 |
| Decrease in interest-bearing marketable public debt | 23,197 | 7,911 | 2,944 | 10,855 |
| Sources of funds: | | | | |
| Reduction in general fund balance | 22,457 | 193 | 211 | 404 |
| Net budgetary surplus | −1,714 | 773 | 1,659 | 2,432 |
| Net receipts in trust accounts, etc. | −681 | −107 | −484 | −591 |
| Increase in nonmarketable public debt | 3,132 | 7,048 | 1,557 | 8,605 |
| Savings bonds | 1,084 | 1,544 | 768 | 2,312 |
| Special issues | 3,688 | 2,781 | 1,589 | 4,370 |
| Other debt | −1,640 | 2,723 | −800 | 1,923 |
| Net decrease in total public debt | 20,065 | 863 | 1,387 | 2,250 |

Source: U.S. treasury department.

Since the major source of funds for retirement of short-term debt was the expansion of savings bonds and special issues, debt

Table IV.—*Ownership of Government Interest-Bearing Securities*

(Billions of dollars)

| End of month | June 1940 | June 1945 | June 1946 | June 1947 |
|---|---|---|---|---|
| Total amount outstanding | 47.9 | 256.8 | 268.6 | 255.2 |
| Total held by banks | 18.6 | 106.0 | 108.2 | 91.9 |
| Commercial banks | 16.1 | 84.2 | 84.4 | 70.0 |
| Federal reserve banks | 2.5 | 21.8 | 23.8 | 21.9 |
| Total held by non-bank investors | 29.3 | 150.8 | 160.4 | 163.3 |
| Individuals | 9.7 | 58.5 | 62.9 | 65.8 |
| Insurance companies | 6.5 | 22.7 | 25.3 | 25.0 |
| Mutual savings banks | 3.1 | 9.6 | 11.5 | 12.1 |
| Other corporations and associations | 2.5 | 29.8 | 25.2 | 21.2 |
| State and local governments | .4 | 5.3 | 6.5 | 6.4 |
| U.S. government agencies and trust funds | 7.1 | 24.9 | 29.1 | 32.8 |

Source: U.S. treasury department, treasury bulletin.

operations in 1947 resulted in a further redistribution of the ownership of the national debt. As shown in Table IV, the total held by non-bank investors increased from $160,400,000,000 in June 1946 to $163,300,000,000 a year later. In contrast, total bank holdings declined from $108,200,000,000 to $91,900,000,000 over the same period.

Significant features of the management of the public debt during 1947 were the firming of open-market interest rates on government short-term securities and a growing necessity on the part of the federal reserve system to purchase long-term bonds in order to maintain their market value at a level which would hold the yield at 2½%. Short-term rates were allowed to rise gradually, as evidenced by an increase in the three-month treasury bill rate from 0.376% in June to 0.944% in the week ending Nov. 29. The yield on 9–12 month certificates of indebtedness advanced from 0.85% in June to 1.01% at the end of November. This firming in open-market rates tended to diminish the pressure on banks to sell short-term government securities in order to obtain the higher returns from longer-term investments.

Heavy demands for mortgage money and business expansion during 1947 led many financial institutions to reduce their government bond portfolios substantially, resulting in conditions under which it was necessary for the federal reserve banks to purchase government bonds in the market in order to maintain the 2½% return. As par levels were being approached, the federal reserve banks, both on their own account and for the account of federal agencies and trust funds, became heavier and heavier purchasers of long-term government bonds. The federal reserve banks lowered their support prices by steps, allowing prices of some issues to fall to, or nearly to, the par level.

Perhaps the most dramatic example of this trend occurred on Dec. 24 when the federal reserve banks announced new buying prices for long-term government bonds at substantially lower premiums than had been offered prior to that date. For example, the 2½% of Sept. 1969–72, eligible for purchase by all types of investors including banks, dropped from 103¼ on Dec. 3 to 101 on Dec. 24. The trend of these bonds earlier in the year had been from 106 9/16 on Aug. 31 to 104¾ on Nov. 12. While the declines in the other issues were of smaller magnitude, the trend was similar throughout the whole range of government long-term securities.

Other developments related to the national debt were indirect effects of the trends noted above. An encouraging indication was the reduced rate of monthly redemptions in U.S. savings bonds, with an accompanying increase in the total outstanding. The monthly rate of redemptions in early 1946 was about 1.25%; in 1947 the rate had fallen to approximately 0.8%.

The average interest rate on the total debt outstanding rose from 2.059% in Jan. 1947 to 2.129 in October, reflecting both the changing composition of the debt and the stiffening rates in the short-term issues mentioned above. The upward trend in interest rates would tend to retard the contraction in annual interest payments of the federal government accompanying a reduction in total national debt. President Truman in his January budget message estimated interest charges in fiscal year 1948 at $5,200,000,000 and in fiscal year 1949 at $5,250,000,000. Interest on the public debt amounted to $4,958,000,000 in 1947, compared to $4,722,000,000 in 1946.

**State and Local Government Debt.**—Statistics on state and local government debt in the United States are shown in Table V. In 1947 the downward trend characterizing the war period was reversed. During World War II, state and local government revenues increased with the rapidly expanded national income, while at the same time capital expenditures were restricted because of scarcities of labour and materials. The resulting surpluses enabled state and local governments to redu their total debt from $20,246,000,000 in 1940 to $15,922,000,00 in 1946.

Table V.—*Debt of State and Local Governments, U.S.*

(Millions of dollars)

| June 30 | Total | State | County | City and township | Sch district a spec dist |
|---|---|---|---|---|---|
| 1929 | 17,234 | 2,300 | 2,270 | 9,259 | 3,4 |
| 1930 | 18,459 | 2,444 | 2,434 | 9,929 | 3,6 |
| 1931 | 19,534 | 2,666 | 2,564 | 10,458 | 3,8 |
| 1932 | 19,804 | 2,896 | 2,565 | 10,483 | 3,8 |
| 1933 | 19,985 | 3,018 | 2,521 | 10,577 | 3,8 |
| 1934 | 19,286 | 3,201 | 2,477 | 9,730 | 3,8 |
| 1935 | 19,429 | 3,331 | 2,433 | 9,778 | 3,8 |
| 1936 | 19,662 | 3,318 | 2,389 | 10,058 | 3,8 |
| 1937 | 19,594 | 3,276 | 2,345 | 10,067 | 3,9 |
| 1938 | 19,576 | 3,309 | 2,282 | 9,923 | 4,0 |
| 1939 | 19,996 | 3,343 | 2,219 | 10,215 | 4,2 |
| 1940 | 20,246 | 3,526 | 2,156 | 10,189 | 4,3 |
| 1941 | 20,226 | 3,413 | 2,046 | 10,210 | 4,5 |
| 1942 | 19,690 | 3,211 | 1,846 | 10,079 | 4,5 |
| 1943 | 18,692 | 2,909 | 1,634 | 9,784 | 4,3 |
| 1944 | 17,471 | 2,768 | 1,694 | 8,826 | 4,1 |
| 1945 | 16,589 | 2,425 | 1,545 | 8,589 | 4,0 |
| 1946 | 15,922 | 2,358 | 1,417 | 8,267 | 3,8 |
| 1947* | 16,819 | 2,972 | 1,481 | 8,275 | 4,0 |

*Preliminary.
Source: U.S. department of commerce.

The rise in 1947 was principally because of large borrowin by three states—Michigan, Illinois and Massachusetts—in co nection with veterans' bonus payments and services. Total de increased $897,000,000 in 1947; state governments accounte for $614,000,000 of this increase and school districts and sp cial districts for $211,000,000. Expansions in county, city ar township indebtedness were nominal.

**Other Countries.**—The latest data available in 1947 on th national debts of leading countries of the world are shown Table VI. During World War II, the debts of most countri rose; even the nonbelligerent countries were required to ma unusual expenditures. With the reduced importance of nation defense in government finance, the trend of debt was mo mixed. Debts were declining in countries where postwar infl

Table VI.—*National Debt of Various Countries*

| Country (Unit of currency)* (in millions) | Date | Total debt (000,000 |
|---|---|---|
| Africa | | |
| Egypt (pound) | 5/31/46 | 7 |
| Union of South Africa (pound) | 6/30/46 | 59 |
| America, North | | |
| Canada (dollar) | 3/31/47 | 16,79 |
| Mexico (peso) | 12/31/46 | 2,53 |
| United States (dollar) | 8/31/47 | 256,30 |
| America, South | | |
| Argentina (peso) | 12/31/46 | 10,53 |
| Brazil (cruzeiro) | 12/31/46 | 16,61 |
| Chile (peso) | 12/31/46 | 14,58 |
| Colombia (peso) | 12/31/46 | 43 |
| Ecuador (sucre) | 12/31/46 | 65 |
| Peru (sol) | 6/30/46 | 2,08 |
| Asia | | |
| India (rupee) | 3/31/47 | 18,13 |
| Japan (yen) | 8/31/47 | 304,63 |
| Europe | | |
| Belgium (franc) | 9/30/46 | 274,48 |
| Bulgaria (leva) | 12/31/45 | 90,00 |
| Czechoslovakia (koruna) | 12/31/46 | 108,75 |
| Denmark (krona) | 3/31/46 | 1,47 |
| Finland (markkaa) | 10/31/46 | 104,34 |
| France (franc) | 8/31/46 | 2,041,29 |
| Germany (reichsmark) | 3/31/45 | 383,10 |
| Greece (drachma) | 3/31/40 | 52,74 |
| Hungary (forint) | 12/31/46 | 1,16 |
| Italy (lira) | 12/31/46 | 1,268,12 |
| Netherlands (gulden) | 10/31/46 | 17,00 |
| Norway (krone) | 6/30/46 | 6,89 |
| Poland (zloty) | 3/31/39 | 5,31 |
| Portugal (escudo) | 12/31/45 | 9,88 |
| Rumania (lev) | 3/31/46 | 124,96 |
| Spain (peseta) | 12/31/45 | 63,0 |
| Sweden (krona) | 10/31/46 | 12,96 |
| Switzerland (franc) | 12/31/46 | 11,48 |
| Turkey (pound) | 12/31/46 | 1,84 |
| United Kingdom (pound) | 3/31/47 | 25,61 |
| Yugoslavia (dinar) | 3/31/39 | 24,62 |
| Oceania | | |
| Australia (pound-Aust.) | 6/30/46 | 2,79 |
| New Zealand (pound-N.Z.) | 3/31/47 | 63 |

*For approximate value of various currencies see *Exchange Control and Exchange Ra*
†Includes the internal debt only.
Source: *Statistical Yearbook* and monthly statistical bulletins of the League of Natic official government sources.

tion had been of a more moderate character. On the other hand, in countries where inflation had been more severe governments had found it much more difficult to secure a balance between receipts and expenditures. It should be emphasized, however, that debt changes generally after the end of the war were much smaller than those which occurred during the war years. (*See* also BUDGET, NATIONAL; GREAT BRITAIN.)

(M. GT.)

**Debts, Government:** *see* DEBT, NATIONAL.

## Decorations, Medals and Badges—Military, Naval and Civil.

The U.S. army announced during 1947 that the decoration system was primarily intended as recognition for war service and the liberal standards then established are not applied during peacetime. World War II service was considered terminated March 2, 1946.

The issue of World War II victory medal and American defense service medal was initiated in 1947.

Die samples of the European, African, middle-eastern campaign medal were approved July 17, 1947. Medal obverse shows a landing operation with troops and ships in foreground and a plane flying in war clouds in background. Reverse consists of an American eagle close with head erect standing on a rock between the inscription "1941 1945" and "United States of America."

The design of the Asiatic-Pacific campaign medal was approved May 22, 1947. Obverse depicts a landing operation with two figures among war-torn palms in foreground; a submarine, vessel, and an aircraft carrier and flying planes in background. Reverse, same as European, African, middle-eastern medal.

Die samples of the American campaign medal were approved Nov. 25, 1947. Obverse shows a sinking submarine with a patrol ship and aeroplane in foreground, and buildings in background representing the antisubmarine warfare and that the Americas were the arsenal of the world during that period. Reverse—same as European, African, middle-eastern and Asiatic-Pacific campaign medals.

The design of the army of occupation medal approved Dec. 1946 was rendered and die sample approved March 2, 1947. First issues were made to General of the Army Dwight D. Eisenhower and General of the Army Douglas A. MacArthur on April 2, 1947, while token issues were made to the army on Army day.

Miniature ribbons of decorations and service medals on a scale of one-half size were authorized for civilian wear. Miniatures of aviation badges for civilian wear, 21/32 of an inch in length, were authorized Feb. 28, 1947.

Public law 306 approved by congress Aug. 1, 1947, provided for the secretary of war and secretary of the navy jointly to fix the size, design and composition of a Gold Star lapel button to be furnished widows, parents and next of kin of members of the armed forces who lost their lives in the armed services of the United States in World War II.

Hawaii announced the creation of a ten-year continuous service medal and bars for additional service of five years.

California established on May 26, 1947, the federal service ribbon in the state colours, blue and gold.

**National Military Establishment Seal.**—On Oct. 8, 1947, the president of the United States approved the seal of the national military establishment as provided in Sec. 202c of the National Security Act of 1947. It is described as an American bald eagle with wings displayed horizontally, grasping three crossed arrows and bearing on its breast a shield paleways of 13 pieces argent and gules, a chief azure. Above the eagle an arc of 13 stars with alternating rays. Below the eagle a wreath of laurel to dexter and olive to sinister. On an encircling band the inscription "National Military Establishment" and "United States of America."

**Flag for Secretary of Defense.**—On Oct. 8, 1947, the president of the United States approved the flag for the secretary of defense. The flag is of medium blue with four white corner stars and the central design consisting of the eagle shield and arrows of the seal of the national military establishment.

**Department of the Army Seal.**—By direction of the president the seal previously designated for the department of war, which contains the words "War Office" was announced on Sept. 18, 1947, as the seal for the new department of the army.

**Department of the Air Force Seal.**—By executive order Nov. 1, 1947, the president of the United States approved the seal of the department of the air force. This seal is heraldically described as a—Shield; *Per fess* nebuly abased azure and argent, in chief a thunderbolt or inflamed proper. Crest: On a wreath argent and azure an American bald eagle wings displayed and partially elevated proper in front of a cloud argent. Encircling the shield and crest an arc of 13 stars and below the shield the inscription "MCMXLVII." On a band encircling the whole the inscriptions "Department of the Air Force" and "United States of America" (A. E. DU.)

**Great Britain.**—*Naval General Service Medal,* first established in 1915, with clasp for southeast Asia, 1945–46, was to be awarded to naval ranks and ratings who took part in operations in Java and Sumatra between Sept. 3, 1945, and Nov. 30, 1946; in French Indo-China between the same commencing date and Jan. 28, 1946; and for specified service in Palestine after Sept. 27, 1945. The same medal, with distinctive clasp, would be awarded to naval personnel for six months postwar minesweeping service at sea, and, with a clasp "Bomb and mine clearance, 1945–48," to naval officers and men actively engaged for six months in the removal and disposal of bombs and mines inside the United Kingdom.

*General Service Medal, Army and Royal Air Force,* with the clasp, for southeast Asia, for Palestine or for bomb or mine clearance, would be awarded to army and air force personnel under the same conditions as for the navy.

*Long Service and Good Conduct Medal, Army.*—Qualifying conditions were slightly amended by royal warrant of May 14, 1947. Officers who were commissioned subsequent to Sept. 3, 1939, and who had completed a minimum of 12 years in the ranks might, upon completion of 18 years' service, qualify for the L.S. and G.C. medal.

*Efficiency Medal* was now awarded to officers and other ranks of the territorial army who were serving on the active list of the territorial army on Sept. 2, 1939, and who had completed 12 years' qualifying service, whether their service had been wholly in the ranks or partly as an emergency commissioned officer. Women of the auxiliary territorial service were also similarly eligible.

**Norway.**—*King Haakon VII Liberty Cross* and *Liberty Medal* were established for award to Norwegian and foreign nationals for distinguished services during the war.

**Denmark.**—*King Christian X's Liberation Medal,* in silver, was established for men and women of Danish or foreign nationality, resident abroad, who rendered conspicuous service for the liberation of Denmark from the Germans.

*King Christian X War Medal,* 1940–45, in silver, was for men and women of Danish nationality who volunteered to fight for the Allied cause in the Allied forces. Danish naval or military personnel sent abroad for such purpose were not entitled. (H. T. DG.)

**De Gasperi, Alcide:** *see* GASPERI, ALCIDE DE.
**De Gaulle, Charles:** *see* GAULLE, CHARLES DE.

## Delaware.

Delaware, on the middle Atlantic seaboard, one of the original 13 states of the United States, is called the "First state," having been the first to ratify the federal constitution, Dec. 7, 1787. A popular name used chiefly in business and commerce is the "Diamond state." Area 2,057 sq.mi. (land, 1,978; inland water 79). Population (1940) state-wide 266,505, of which 139,432 were urban, 127,073 rural. Native white numbered 215,695; foreign-born 14,913; Negro 35,876. Wilmington, 112,504, is the one city of more than 6,000; Dover, 5,517, is the capital. The bureau of the census, 1947 estimate, was 286,527.

**History.**—Delaware veterans attending schools and colleges under the G.I. Bill of Rights numbered 2,785 at the end of the year; 1,537 were in on-the-job training and 3,731 were receiving disability pensions. Revised plans and specifications for construction of the $6,000,000, 320-bed U.S. veterans' hospital near Wilmington were completed. Test borings were made and bids for construction of piers received by the state highway department for the $40,000,000 bridge across the Delaware river, a memorial to the Delaware dead in World War II.

The state employees' pension act of 1945 went into effect July 1, 1947. The housing shortage continued acute.

Legislative enactments at the 1947 session, January to April, included: temporary increase of $200 per year for state employees receiving less than $5,000 salary; proposal to amend the constitution increasing the two-year term of four state officers to four years: attorney general, auditor, treasurer and insurance commissioner; requirement of report and certificate of physical examination including blood test from applicants for marriage licences; restrictive regulation of labour unions; provision for declaratory judgments by the courts in all cases of actual controversy except divorce or annulment of marriage.

The chief state officers in 1947 were: governor, Walter W. Bacon; secretary of state, William J. Storey; adjutant general, Paul R. Rinard; attorney general, Albert W. James; chancellor, W. Watson Harrington; chief justice, Charles S. Richards.

**Education.**—The 1947 legislature continued the state commission engaged in making surveys and studies preliminary to recommending an improved public school system, and created a uniform state supported salary schedule for teachers. The requirement of the Wilmington board of education charter that the city council appropriate the full budget requested annually by the board up to seven mills of the tax dollar, was declared constitutional by the state supreme court. Citizen participation in the movement for better schools increased during the year. In 1947, through rehabilitation service, the state board of vocational education placed 342 disabled persons in earning jobs.

The 165 elementary schools had an enrolment of 25,692, and a teaching staff in June of 870 (increased to 898 in December); the 46 secondary schools had 16,736 pupils and 811 teachers in June (increased to 850 in December).

**Social Insurance and Assistance, Public Welfare and Related Programs.**—The amount of social insurance paid out for the year 1947 was $2,740,509. Active claims, Dec. 19, numbered 2,468. The cost of outside relief for the year was $332,416 for cases averaging 750 per month. The cost was shared half and half by the state and the county in which the relief was given. In Dec. 1947, 1,293 persons were receiving old age pensions compared with 1,184 the previous December. For the fiscal year ending June 30, 1947, 873 dependent children were cared for in their own or foster homes, and welfare services given to 1,028 additional children; state appropriation, $249,140. Appropriation to Ferris school (correctional for boys) $155,960; to Kruse school (correctional for Negro girls) $49,300. There is no state prison, but small jails in the two rural counties; the New Castle county workhouse accommodates long-term prisoners from all counties. During the year ending June 30, 1947, the workhouse received 2,082 prisoners and discharged 1,980; inmates in June numbered 367.

**Communications.**—Mileage of highways and rural roads, all under state control, was 3,899.31; income of the state highway department for the fiscal year ending June 30, 1947, was $5,177,729.62; expenditures $4,820,494.60; cash balance June 30, $2,057,435.58; federal aid $1,047,747.55. Total motor vehicle accidents increased: fatal accidents and deaths resulting from accidents (outside the city of Wilmington) decreased 9%. Railroad mileage was approximately 270.

Business for the calendar year at the port of Wilmington made its highest annual record. Tonnage was 573,481 compared with 419,245, in 1946; the number of vessels docking, 650 compared with 477. The value of cargoes was $26,614,870 compared with $13,570,440 in 1946. Tonnage through the Delaware and Chesapeake canal was 5,388,095 (13,491 vessels) compared with 3,653,258 (11,730 vessels), the previous year.

Regular passenger, express, and freight service was opened Nov. 29 at the New Castle county airport by American Airlines and Trans World Airlines. On Dec. 31, the state had in use 91,817 telephones. The city of Wilmington had three radio broadcasting stations.

**Banking and Finance.**—There were 28 state banks, mutual savings banks, and trust companies with 6 branch banks and 9 branch offices; 13 national banks, 39 building and loan associations and 21 small loan companies. Total assets of state banks and trust companies on June 30, 1947, were $557,688,794.21 compared with $567,963,881.80 in 1946; deposits were $495,286,057.93 compared with $507,740,263.89; assets of the national banks were $42,809,679.43 compared with $42,321,549.05; the 39 building and loan associations had assets of $18,129,329.64 compared with $17,082,094.91 in 1946.

Total state revenue for the year ending June 30, 1947 was $23,385,534.14; nonrevenue income $2,296,682.47; total $25,682,216.61. Expenditures were $25,162,553.68; balance $519,662.93, added to a balance of $17,367,485.86 at the beginning of the year, made a cash surplus of $17,887,148.79 at the end of the fiscal year. The gross debt (serial bonds for permanent improvement) was $4,179,000.

**Agriculture.**—The estimated total cash income from agricultural production in 1947 was $80,926,000. Income from the broiler industry, estimated at $51,000,000, was below normal because of the shortage and high price of feed; total livestock income, January to October, was $54,570,000; total from crops for the same period, $14,319,000. W conditions ruined the Delaware peach crop which dropped from 4 bu. in 1946 to 171,000 bu. for 1947.

Table I.—*Leading Agricultural Products of Delaware, 1947 and 1946*

| Crop | 1947 | 1946 |
|---|---|---|
| Corn, bu. | 4,340,000 | 4,270,000 |
| Apples, bu. | 396,000 | 825,000 |
| Hay, tons | 102,000 | 99,000 |
| Wheat, bu. | 1,326,000 | 1,216,000 |
| Tomatoes, tons | 54,000 | 42,000 |
| Strawberries, crates | 43,000 | 66,000 |
| Lima beans, tons shelled | 9,730 | 8,160 |

**Manufacturing.**—Gross receipts of manufacturers licensed for th ending June 30, 1947, were $344,049,916. The total of employees the unemployment compensation law in Sept. 1947 was 92,026 com with 86,000 for Sept. 1946; total wages for the year Oct. 1946 to 1947, $231,522,108 compared with $204,000,000 the previous ye Nov. 15, 1947, 516 plants in the Wilmington area reported an er ment total of 60,046 compared with 59,275 in 621 plants in Nov. Turnover for the month ending Nov. 15, 1947, was 1,288 emp 1,176 laid off. In 1947, 2,787 new companies were chartered in Del compared with 3,392 in 1946.

Table II.—*Principal Industries of Delaware, 1947 and 1946*

| Industry | 1947 | 1 |
|---|---|---|
| Chemicals | $33,627,076 | $29,6 |
| Shipbuilding | 16,936,110 | 18,3 |
| Leather | 20,278,153 | 27,6 |
| Foundries, machine shops, tools | 18,202,885 | 22,6 |
| Fibre | 14,878,588 | 11,8 |
| Textiles | 51,656,907 | 43,9 |
| Canning and packing | 11,354,419 | 10,7 |

**Mineral Production.**—The chief products, building stone, granite, brick and clay, for the year ending Nov. 1, 1947, had a total va $663,113 compared with $363,159 for the previous year.

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## Democracy.

During 1947 democracy was under very h attacks from communism. The use of the t "democracy," "people's democracy" or "new democracy" b communists tended to confound the issues. Neverth throughout the year democratic resistance against commu was growing everywhere, except in those countries where a munist regime had been imposed.

As in its struggle against fascism a decade before, demo in 1947 seemed to successfully overcome its initial weakn in its efforts to secure the survival of free man and of society.

In a statement to the Council of Foreign Ministers in M on the democratization of Germany, Secretary of State G C. Marshall defined the inalienable rights of individuals u democracy.

> They include the right of every individual to develop his mind a soul in the ways of his own choice, free of fear and coercion—pr only that he does not interfere with the rights of others. To us a s is not democracy if men who respect the rights of their fellow me not free to express their own beliefs and convictions without fear tha may be snatched away from their home or family. To us a society free if law-abiding citizens live in fear of being denied the right to or deprived of life, liberty and the pursuit of happiness.

A democracy demands that

> freely constituted political parties should be insured the right to ticipate in a free and competitive election system in which each is acc equal opportunity to present its views, win adherence and obtain representation. The rights of free and autonomous trade unions to on in accord with the wishes of their members should be clearly establ

Democracy demands a free press and radio and rejects monopolization of information media in the interests of party.

The people must enjoy an unrestricted access to informa including the press, radio, books, magazines, publications, f the theatre and music.

In a similar way President Harry S. Truman defined de racy in his message to congress on March 12, determining foreign policy:

> At the present moment in world history nearly every nation must c between alternative ways of life. The choice is too often not a free One way of life is based upon the will of the majority and is distingu by free institutions, representative government, free elections, guara of individual liberty, freedom of speech and religion, and freedom political oppression. The second way of life is based upon the will minority forcibly imposed upon the majority. It relies upon terror an pression, a controlled press and radio, fixed elections, and the suppre of personal freedoms. I believe that it must be the policy of the U States to support free peoples who are resisting attempted subjugatic armed minorities or by outside pressures.

The Federal Council of the Church of Christ in Am adopted a statement prepared by the Commission on a Just

Durable Peace in which it stressed that

> The critical and supreme political issue of today is that of the free society versus the police state. It is not the economic issue of communism versus capitalism or of state socialism versus free enterprise. As to such matters it is normal that there should be diversity and experimentation in the world.

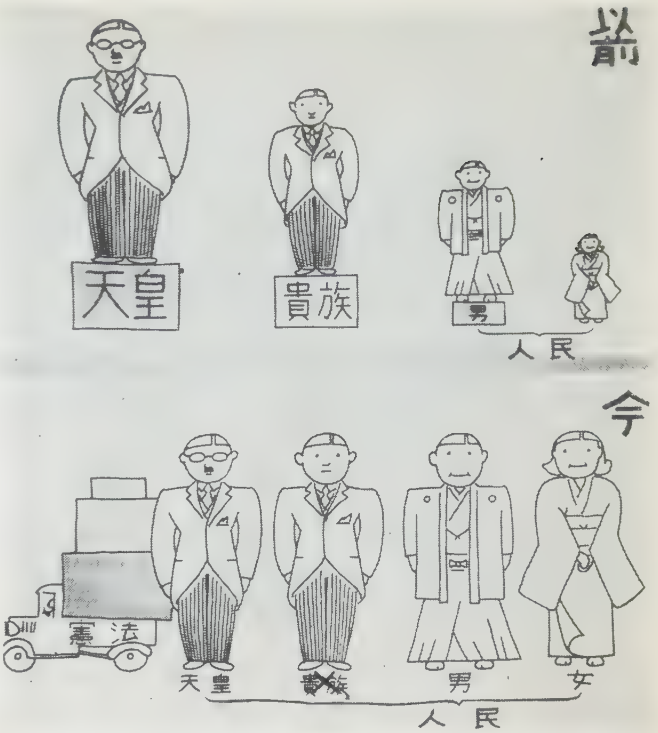
A free society, or a democracy, is

> a society in which human beings, in voluntary cooperation, may choose and change their way of life and in which force is outlawed as a means to suppress or eliminate spiritual, intellectual and political differences between individuals and those exercising the police power.

The United Nations Commission on Human Rights was discussing an international bill of human rights in 1947. An international treaty guaranteeing the free flow of information everywhere was drafted. By the end of 1947 no agreement was yet reached about the fundamental concepts involved between the democratic nations on the one hand and the communist states on the other.

While in the countries under Russian influence democratic opposition was liquidated during 1947 and the democratic leaders who did not succeed in escaping abroad were either executed or imprisoned—only in Czechoslovakia and in Finland democratic parties continued to exist and to maintain a considerable though limited freedom of action—in the European countries outside direct Russian influence communism was either weak or was resisted successfully, as in France and Italy, the only two countries outside the Russian orbit where communism had a mass following. The struggle in Europe was not a struggle between capitalism and socialism but between free democratic society and communist totalitarianism. The social democrats in most countries (including Finland and Czechoslovakia) were for the socialization of the means of production within the framework of a democratic society safeguarding the inalienable rights of the individual and were opposed to communism and all forms of totalitarian society. The Marshall plan for the economic recovery of Europe, not entirely approved in the U.S., promised to strengthen democracy and was violently combated by the communists. Russia and the eastern European nations had been invited to participate in the Marshall plan. Czechoslovakia accepted at first, but Russia decided against participation and forced its point of view upon all the states in the soviet bloc, including Czechoslovakia. Thus, through Russian intransigence, Europe was split into two parts. Sixteen European nations, however, met in Paris and drew up a joint European recovery program with the assistance of the U.S. under the Marshall plan. Democracy in Europe expected new strength from the implementation of the Marshall plan in 1948. (*See* European Recovery Program.)

Elections held in Europe confirmed the general trend toward strengthening democracy. In Oct. 1947 municipal elections in France ended communist control of most of the large French cities. The French government representing the parties of the centre, especially the (Catholic) Republican Popular Movement and the Social Democrats, defeated in Dec. 1947 nation-wide communist strikes which exploited the legitimate economic grievances of the wage earners for political purposes. The Confédération Générale du Travail, the French federation of trade unions which had been under communist control from 1945, split at the end of 1947. Its noncommunist members under the veteran trade union leader Léon Jouhaux formed a rival federation, the Force Ouvrière, the Workers Strength, whose purpose was to free the trade union movement from political subservience to any party.



POLITICAL RIGHTS under the Japanese constitution effective May 3, 1947, as presented in a "before-after" poster. Stratification (top) of classes and sexes is abolished and equality (bottom) established as a truck (the constitution) carts all pedestals away

In the elections to the municipality of Rome, Italy, the communist-led People's Front received 32.1% of the votes. The Christian Democrats gained considerably compared with the elections of Nov. 1946. In the same month municipal elections in Norway showed a weakening of the communist and socialist votes and the strengthening of the agrarian and conservative parties. In Denmark, national elections strengthened the Social Democrats at the expense of the communists; the former gained the nine seats lost by the communists. The Social Democrats emerged as the strongest single party without, however, commanding a majority.

In national elections in Switzerland the communists gained seven seats in a parliament consisting of 194 members, while in the municipal elections in Britain the communists could not carry a single one of their candidates.

Some progress was made, at least outwardly, under U.S. guidance, in the democratization of Japan. In the general election of April 1947 the Socialist party emerged as the strongest single party, though without commanding a majority in the house. The communists received 4 out of the chamber's 466 seats and 870,000 votes out of 25,800,000 cast. For the first time a Socialist and a Christian became Japanese prime minister in the person of Katayama Tetsu. Attempts made in China to broaden the regime and to introduce full democratic liberties had not yet succeeded by the end of 1947 though definite steps in that direction were taken in April. In Latin America, Venezuela offered a bright prospect for democracy when in Dec. 1947 in free elections Rómulo Gallegos, a well-known novelist, was elected president. (*See* also Communism; Education; Fascism; Great Britain; Union of Soviet Socialist Republics; United States.)

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**Democratic Party.** The Democratic party in 1947 enjoyed the paradoxical experience of staging a remarkable political comeback at the very moment when the Truman administration struggled with national and international problems as grave as any chief executive had faced in times of comparative peace and prosperity.

As the year waned, every public and private poll suggested that President Harry S. Truman had slightly better than an even chance for re-election in 1948. With such questions as acute inflation and postwar difficulties with the Soviet Union still unsolved, it was recognized that his slim margin could be wiped out by untoward events. Nevertheless, there was no other Democrat who approached him in ballot-box stature.

Political observers naturally essayed an examination of the reasons for this transformation. In making this inventory, they listed near the top his utter reversal of Franklin D. Roosevelt's friendly attitude toward Moscow. His defiance of the expanding and aggressive Soviet Union, strongly reinforced by Secretary of State George C. Marshall's actions at 1947 conferences of foreign ministers, and also by promulgation of the four-year aid program for western European nations resisting communism, seemed to have had a popular, bipartisan appeal, even though full implementation of the foreign recovery proposal still faced a fight in congress.

Despite inflation that saw prices on bread-and-butter commodities surpass wartime peaks, his friends figured that he would not be seriously damaged by this issue if even more sensational skyrocketing could be checked in 1948. In any event, they calculated that the failure of a Republican-controlled congress to enact his ten-point anti-inflation program, which called for wage, price and priority controls on key materials, would enable them to throw the dust of responsibility in the eyes of the political opposition.

Another Democratic explanation for Truman's new strength was his defiance of John L. Lewis. Although the administration party felt that it would receive a majority of the labour vote in 1948, based on Truman's veto of the Taft-Hartley act, his 1946 attempt to jail the president of the United Mine Workers, in the opinion of his advisers, satisfied many conservatives without antagonizing labour elements which had long thought that the U.M.W. boss was too bold and arrogant.

Last but not least, the leaders attributed Truman's increased popularity to his kindly, unassuming and homey nature. Even his political enemies warmed, personally, to the man from Missouri.

Although not so intended, perhaps, several major administration moves during the year showed plainly the Democratic pattern for 1948 victory, and it did not differ in many essentials from Roosevelt's formula of mobilizing numerous heterogeneous elements behind him.

The Marshall plan, as well as U.S. co-sponsorship of the partition of Palestine, was expected to hold great racial and religious minority groups in key cities. So were various administration-sponsored gestures against real estate and educational segregation. Truman's veto of the Taft-Hartley act appeared to have won him the favour of labour, organized and unorganized. Thus, it was felt that if he could command this support, together with the nominal Democratic strength in 1948, he would make strong claim to four more years in the White House.

As the year closed, however, Henry A. Wallace became a man of concern to the Democrats. Ever since Pres. Truman asked him to resign as secretary of commerce, his speeches and writings had been derogatory to the administration; he charged that the official attitude toward the U.S.S.R. had transformed the Democrats into a "war party," and threatened to revolt.

In a Dec. 29 radio address, Wallace announced that he would be an independent, third-party candidate, with the backing of the Progressive Citizens of America. Although his action led large labour unions and prominent Democrats to disown him,
and the party strategists hoped to discredit his candidacy
"giving aid and comfort to Moscow," they feared his poss
strength in such electorally important states as New Y
Pennsylvania, Illinois and California. They realized that if
could split the normal Truman vote in these areas, he would
a welcome asset to the Republicans. Nobody, of course, g
him any chance of election.

In his announcement, the former vice-president assailed b
major parties for pursuing policies which, he charged, wo
lead to a third world war. He urged that U.S. aid to west
Europe be advanced on a "humanitarian" basis through
United Nations rather than by the United States alone in
avowed attempt to combat the spread of communism. In
emotional and evangelistic peroration, he called upon an "Ar
of Gideon" to reinforce him in a battle for "peace, progr
and prosperity."

Another difficulty confronted the Democrats in their sea
for a 1948 running-mate for Truman. They were handicap
in the hunt because the Republicans controlled congress
every important state whence a governor, as had happened
often in the past, could be elevated to the vice-presiden
nomination.

James Forrestal, secretary of national defense, Secret
Marshall and Senator Scott W. Lucas of Illinois were frequen
mentioned, but in seemingly unequivocal language the
eschewed the tentative offers. Among those often on the p
ticians' tongues were Senator Joseph C. O'Mahoney of Wyomi
Senator Brien McMahon of Connecticut, Senate Mino
Leader Alben W. Barkley of Kentucky, Governor Monrad
Wallgren of Washington, Secretary of Agriculture Clinton
Anderson of New Mexico, Secretary of Commerce W. Ave
Harriman of New York, and William O. Douglas of Oreg
associate justice of the supreme court. Despite their offi
prominence, however, it was recognized by Democratic stra
gists that none of these men would contribute national stren
to the presidential ticket, with the possible exception of Sec
tary Marshall.

Whereas Pres. Truman behaved in the early months af
entering the White House as if he were a trustee of the Roo
velt regime and policies, he took complete command of
administration and the party in 1947. He framed and enuncia
its basic viewpoints on foreign and domestic issues. All Roo
veltian holdovers had resigned or had been dismissed, so t
every cabinet member and head of a key agency was a man
his own choosing.

On the last day of the year, significantly enough, he refus
to reappoint James M. Landis, former dean of Harvard L
school and last survivor of the original New Deal "brain trus
as chairman of the Civil Aeronautics board.

He completed the political shakeup when, in September,
named a former senate colleague, J. Howard McGrath of Rho
Island, as chairman of the Democratic national committee
succeed Robert E. Hannegan.

In the process of becoming president in his own right rat
than merely Roosevelt's legatee, Truman was aided indirec
by publication of memoirs by several members of the offic
Roosevelt family. They tended to cast historical doubt on
fundamental wisdom of certain New Deal policies, especially
monetary matters, the conduct of the war, Roosevelt's execut
talent and his relationship with Russia.

Among the authors appearing in book form or anticipat
magazine articles were Henry L. Stimson, Cordell Hull, James
Farley, Henry Morgenthau and Frances Perkins—five form
cabinet members who had been conspicuously close to Truma
distinguished predecessor. (*See* also UNITED STATES.)

(R. Tu.)

**Denfeld, Louis Emil** (1891– ), U.S. naval officer, was born on April 13 in Westboro, Mass., and was graduated from the U.S. Naval academy at Annapolis in 1912. During World War I, Denfeld served with U.S. destroyer squadrons in European waters.

In the years between World Wars I and II, he shuttled between sea and shore duties. In 1941 he went to London as a special observer; between April and December of that year, he also took command of a task force that convoyed merchant ships to Britain. The following May, he was promoted to a rear admiral and was made assistant chief of naval personnel.

Denfeld returned to sea duty in March 1945 as commander of battleship division 9, which supported the Okinawa landings and participated in the bombardments of Hokkaido and Honshu in the last days of the war. After the collapse of Japan, he returned to Washington, and on Sept. 11, 1945, his appointment as chief of naval personnel was confirmed; later he was given the added post of deputy chief of naval operations for personnel.

Raised to the rank of admiral on Jan. 29, 1947, Denfeld was made commander of the Pacific fleet a month later (Feb. 28), and on Nov. 13 President Truman announced his appointment as chief of naval operations to succeed Fleet Adm. Chester W. Nimitz.

**Denham, Robert N.** (1885– ), U.S. government official, was born on Oct. 23 in St. Louis, Mo., and was graduated from the University of Missouri in 1907 with a bachelor of laws degree. He received his master's degree at the University of Michigan. He practised law in St. Louis but, stricken with ill health, he moved to Texas and later to Washington, D.C., where he practised law. He was a trouble shooter for banks and investment houses from 1920 to 1933, later worked for the treasury department and in 1937 was hired by the National Labor Relations board as a federal trial examiner.

At NLRB, Denham became the leader of a small conservative group who fought what he called a "rearguard action against the radicals" in the government agency. On July 17, 1947, he was selected by Pres. Harry S. Truman to become general counsel of the newly revamped National Labor Relations board.

Shortly after taking office, Denham fell afoul of his own political supporters, as well as the opposition, by issuance of the celebrated noncommunist affidavit order; the criticism was that Denham had committed a political blunder in demanding signature of the order by national as well as local union leaders.

Later, on Oct. 7, the board itself overruled Denham's order by a 4–1 vote.

**De Nicola, Enrico:** *see* NICOLA, ENRICO DE.

**Denmark.** A monarchy of north central Europe. Area, 16,569 sq.mi.; pop. (1945 census) 4,045,232. Capital: Copenhagen (731,707). Other principal cities: Aarhus (107,393); Odense (92,436); Aalborg (60,880). Religion: Lutheran Christian. Ruler in 1947: King Christian X until his death on April 20, and thereafter his son, Frederick IX (*q.v.*); prime minister, Knud Kristensen, from Nov. 1945 to Nov. 1947; after Nov. 1947, Hans Hedtoft.

**History.**—To crown the disasters of war came industrial strife, political turmoil, vicious weather and international complications to plague Denmark in 1947.

In the industrial arena the most serious items were the unemployment of 19,000 (in April) and the four-month typographers' strike, March to July, which left only Socialist and Communist dailies—except for some mimeographed leaflets. Communist agitation was disruptive at other points also, as when the Communists got workers to march in a demonstration against the scarcity of potatoes—in a country where the diet was 3,000 calories, or about double the European average.

KING FREDERICK IX, Queen Ingrid and Princesses (left to right) Margrethe, Anne-Marie and Benedikte of Denmark. King Frederick ascended the throne on April 20, 1947, upon the death of his father, King Christian X

Political disaster struck first in the death of Christian X, fearless and beloved monarch, who had presided graciously over Denmark for 35 years. The 76-year-old ruler suffered a heart attack on Easter Sunday, and the crown prince was appointed regent. Pneumonia complicated the trouble, and on April 20 the king's death was announced to the sadly expectant throng outside the palace. Frederick IX took over the kingship and with Queen Ingrid promised to reign like "the old couple."

One of the difficult problems of domestic politics was the status of South Slesvig (or Schleswig in the German spelling), In the plebiscite of 1920, North Slesvig had voted for Denmark and had been annexed. From Flensburg south, the people had chosen to go with Germany, and in later elections had voted 40%–41% nazi. Under the changed circumstances of 1947, increasing numbers yearned for the Danish flag—and perhaps for Danish butter. Most of Denmark's leading statesmen were wary of the issue. Christmas Møller resigned the chairmanship of the Conservative party because he opposed expansion. The Farmer-Liberal prime minister, Knud Kristensen, was a vigorous advocate of Danish acquisition of the Flensburg district at least, by means of a plebiscite. As the differences of opinion waxed hotter, Kristensen calmly flew off to an Oxford Movement conference. Aplomb, however, was not enough, nor an offer to resign. The opposition demanded an election. Kristensen lost a vote of confidence by 80–66 on Oct. 4 and the election was held Oct. 23. The Communists lost slightly, and no single party got a working majority in the Folketing. Kristensen stayed on for a time while leaders manoeuvred for a new cabinet. The Social Democrats had a plurality, and eventually their chairman, Hans Hedtoft, was named premier. The parties and votes:

| | Delegates | Votes |
|---|---|---|
| Socialdemokratiet (Social Democrats) . . . | 57 | 836,231 |
| Radikale Venstre (Radicals) . . . . . | 10 | 144,246 |
| Konservative (Conservative) . . . . . | 17 | 259,185 |
| Venstre (Agricultural) . . . . . . . | 49 | 529,140 |
| Kommunister (Communist) . . . . . | 9 | 141,037 |
| Retsforbundet (Georgist) . . . . . . | 6 | 94,538 |
| Færøerne (Færoe Islands) . . . . . . | 1 | |

Foreign attitudes on the Slesvig question were interesting: Britain seemingly thought it would be all right for Denmark to occupy the Flensburg district, but feared a move farther to the south, thinking that Denmark would not be strong enough to defend the Kiel canal. France apparently relished the prospect of a Danish seizure which might be accepted by the U.S.S.R., because France would then have a good precedent for what it wished to do in the Ruhr. In any case, the whole issue still hung fire at the end of 1947.

Rationing of foods involved both political and economic difficulties. Denmark had ample food, but its balance of trade was highly unfavourable, forcing it to ration food to its own people in order to sell food abroad. Meat rationing was applied on April 1, for the first time after World War I, but had to be abandoned in August because lack of fodder forced heavy slaughter. After a brief surfeit of beef, rationing was then reinstalled.

Denmark had to curtail imports to maintain its finances. It was impossible to control food or foreign exchange as long as Danes could send across the sound and buy what they pleased in Sweden. At length Denmark placed an embargo: only Danes who stayed in Sweden for at least four days could bring back such forbidden luxury items as bananas; on the day before this regulation became effective 30,000 Danes jammed the boats to and from the Swedish shore.

On the positive side, Denmark made a finance and trade agreement with Switzerland involving a $7,000,000 credit. It also joined in a balance of payments agreement with Norway, Sweden, Great Britain, Benelux (the Belgium, Netherlands, Luxembourg bloc), France and Italy in connection with the 16-nation economic conference at Paris (and later Basel). Most helpful would have been re-establishment of the old healthy trade with Great Britain, but Danish costs were rising and the British felt they could not pay the prices the Danes thought they must have. Repeated negotiations produced meagre results. The money question produced acrimonious debates. Once a Communist delegate asked in parliament, "Where do the Liberals get their money from? Where do the Conservatives, the Social Democrats, the Radicals, get their money from?" Another deputy roused a big laugh when he shouted, "Where do the Communists get *their* money from?"

The Danes were averse to continuing to care for some 75,000 German refugees at the end of 1947, but they were grateful that 50,000 had been admitted to western Germany. The Danish Red Cross undertook to feed 81,000 German children in Slesvig and sent three months' rations to 15,000 children in Hungary. In another kind of foreign movement, Denmark marched 4,000 troops into Germany to take over a segment of the British zone of occupation.

The question of U.S. privileges in Greenland, Denmark's great island, was raised vociferously by the Danish Communists. Danish scientific and business activities in Greenland, as well as a press uproar demanding improvement in the administration of the colony, all indicated a determination to keep control and not to sell out to the United States, as had been rumoured.

**Education.**—In 1940 there were 407,355 students in the elementary schools and 67,064 in the middle and secondary schools. In the two Danish universities 6,474 students were enrolled. Even during World War II about one-third of Denmark's famous folk high schools continued to function.

**Finance.**—The Danish crown (krone) was officially worth 20.877 U.S. cents in 1947. Some of the significant financial statistics:

| | | 1945–46 | estimates 1946–47 |
|---|---|---|---|
| Ordinary account: | receipts | 1,304,200,000 kr. | 1,230,400,000 kr. |
| | expenditures | 1,551,500,000 kr. | 1,570,400,000 kr. |
| Capital account: | receipts | 12,729,700,000 kr. | 1,481,500,000 kr. |
| | expenditures | 12,729,700,000 kr. | 1,481,500,000 kr. |

The domestic debt amounted to 3,830,500,000 kr., the foreign debt to 611,900,000 kr., making a total public debt of 4,442,400,000 kr.

| | 1945 | 1946 |
|---|---|---|
| Notes in circulation | 1,561,000,000 kr. | 1,487,000,000 kr. (end of |
| Gold reserve | 83,000,000 kr. | 83,000,000 kr. (end of |
| Commercial bank deposits | 5,906,000,000 kr. | 5,985,000,000 kr. (end o |

**Trade and Communications.**—The strange distortion of Denmark's eign trade because of World War II is shown by the statistics for 1

| | Imports from | Exports t |
|---|---|---|
| Germany | 908,050,000 kr. | 1,090,141,0 |
| Finland | 85,748,000 kr. | 64,882,0 |
| Sweden | 37,511,000 kr. | 62,465,0 |
| Norway | 57,155,000 kr. | 67,503,0 |
| Switzerland | 27,977,000 kr. | 30,902,0 |
| Total imports | 1,166,801,000 kr. | .... |
| Total exports | .......... | 1,360,467,0 |

In 1945 Denmark's trade with Germany decreased to imports 156, 000 kr., exports 184,270,000 kr., and with Switzerland to imports 839,000 kr., exports 20,388,000 kr. Trade with Sweden increased, ever, to imports 152,990,000 kr., exports 72,064,000 kr., and with way to imports 90,629,000 kr., exports 115,220,000 kr. Total im into Denmark for 1945 were 700,000,000 kr.; exports from Denmark 903,690,000 kr.

Failure to achieve trade recovery in 1946 meant that Denmark ha plan to reduce imports in 1947 by 600,000,000 kr.–800,000,000 kr. L in export trade forced cancellation of many orders in Britain and quired a drive for new export markets.

Denmark had 1,630,000 mi. of telephone wires (1947) and 371,00 struments (1945); 904,610 radio sets (1945); 30,290 motor veh (1944); 4,860 km. of railway lines (1944) of which almost exactly half was privately owned and one-half state owned. The Danish merc fleet was almost back to prewar tonnage.

**Agriculture.**—Production of the chief agricultural products in short t

| | 1944 | 1945 (preliminary fig |
|---|---|---|
| Bread grains | 758,000 | 636,000 |
| Feed grains | 3,329,000 | 3,220,000 |
| Potatoes | 1,553,000 | 1,731,000 |
| Sugar beets | 1,400,000 | |
| Milk | 4,420,000 | 4,519,000 |
| Butter | 141,000 | 146,000 |
| Beef and veal | 143,000 | 127,000 |
| Pork | 237,000 | 293,000 |
| Eggs | 51,000 | 55,000 |

The livestock census showed for 1944: 612,224 horses, 3,185,823 ca 1,555,176 milk cows, 2,032,623 pigs. In 1947 the drought so reduced grain harvest that imports of 150,000–200,000 tons would be requ to maintain rations.

**Manufactures.**—Industrial production in 1944, from 6,717 establishm and 195,097 workers, totalled a value of 4,791,711,000 kr. In 1946 number of industrial workers was increased by a shift of 10% of agricultural workers to industry.

BIBLIOGRAPHY.—See the "Danish Books for American Libraries, *American Scandinavian Review* (Sept. 1947 and Dec. 1947). (F. D. S

**Dental Association, American:** *see* AMERICAN DEN ASSOCIATION.

## Dentistry.

Reports of the increasing prevalence of diab in the United States during 1947, with the mated number of cases exceeding 2,000,000, had important plications for dentists. Gingivitis and inflammation of the s porting structures of the teeth (diabetic pyorrhoea) may app early in the disease. In all cases tests of blood and urine sugar were recommended.

Workshops were held in several states during 1947 to st the problems of community dental health planning and the trol of dental caries. The workshop in Michigan, devoted tirely to the evaluation of dental caries control techniques, attended by 114 dentists, physicians, biochemists, nutrition and dental health educators who devoted one week to a crit analysis of the problem. The mechanism of the caries pro and its relationship to system conditions, the effectiveness prophylaxis, tooth brushing, chewing gum, dentifrices and mo washes, the utilization of fluorides and silver salts, the rela of vitamin and mineral ingestion and the contribution of vari types of diet in caries control were all given careful study.

One of the summary statements by the group studying to brushing was of special interest. Its conclusion was that "m tenances of oral hygiene by means of dental prophylaxis tooth brushing with acceptable aids can be recommended numerous reasons, although the evidence that such measu are effective in the prevention of dental caries is limited and, at present, inadequate." (The Michigan Workshop, *The Evaluation of Dental Caries Control Technics,* Sept. 8–12, 1947, Brochure.)

On the subject of fluorine, which had received wide attention, the group confirmed the statement that "there is no direct evidence demonstrating whether or not the addition of fluorine to a fluorine-free community water supply will decrease the incidence of dental caries in the community." Studies were begun in several communities to determine the facts. It was stated that "caries reduction of approximately 40% has been observed in the teeth of groups of children treated topically with sodium fluoride solutions."

If dental caries could be reduced 40% in children by the single and inexpensive procedure of topical application of sodium fluoride, a profound social and health advance would result, and such a procedure should be universally adopted, especially in all clinics for children and in offices where children receive treatment.

Much publicity was given to the importance of vitamin C, especially in keeping the gums in healthy condition. That lemon juice may harm the teeth, however, was reported during 1947. Fifty patients who had been taking lemon juice chiefly in water showed evidence of dissolution of the dental structure. The degree and rapidity of decalcification varied, but all showed tooth damage. The proportion of women to men in the group was four to one. In most cases the lemon juice had been taken on nonprofessional advice. The authors of the report concluded that "an adequate amount of vitamin C can be had without resorting to improper use of lemon juice." (*Proceedings of the Staff Meetings of the Mayo Clinic,* 22:81–84, March 5, 1947.)

Another source of abrasion and damage to teeth had arisen from the habit of repeatedly using the upper incisors as a convenient means of opening bobby pins. These abrasions, named "bobby-pin notches," occurred in women mostly in the 19 to 25 age group, but were found also at other ages. The destruction of tooth structure occurs at the incisal edges of the upper incisors and takes the form of a notch which may advance to a point where it is disfiguring. To prevent this damage, an acrylic appliance was devised to slip over the teeth. Bobby pins can then be readily and easily opened without damage.

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**Deposit Insurance Corporation, Federal:** *see* FEDERAL DEPOSIT INSURANCE CORPORATION.

## Dermatology.

Rickettsialpox is the name given to cutaneous manifestations of a self-limited febrile disease which is preceded by an initial lesion of the skin and is accompanied by general malaise, chills, backache and a rash with round elevated spots. Cases were first reported by L. N. Sussman and B. Shankman in the borough of Queens, New York city, and numerous others soon developed in that region. Complete clinical epidemiologic and laboratory studies were soon under way by M. Greenberg and his associates, and by R. J. Huebner and W. L. Jellison. Within a short time the cause, epidemiology and clinical course of the disease were elucidated.

The causative organism was found to be a Rickettsia, named *Rickettsia akari.* This organism is inoculated into the human being by the bite of a mite, *Allodermanyssus sanguineus* (Hirst), which infests the common house mouse. The bite of this mite inoculates the Rickettsia and produces a painless initial lesion which is first a large elevated spot, then topped with a blister and next covered with a dry black crust. About a week after the appearance of the initial lesion, chills, fever, backache and headache develop. At the same time or a day or two later, the spotty rash appears. In a day or two, the papules are surmounted by blisters. This eruption does not have a characteristic distribution.

Extensive laboratory investigations were carried out and blood tests for typhoid bacilli, paratyphoid A and B bacilli, *Brucella, Leptospira icterohaemorrhagiae, Leptospira canicola* and *Pasteurella tularensis* and *Proteus* OX 19, OX 2 and OX K were negative. Heterophil antibody tests were also negative. The organism was recovered from the tissues of a mouse inoculated with blood drawn from one of the patients; it was also cultivated in the yolk of embryonated eggs. Antigens prepared from this organism gave negative complement fixation tests (similar to the Wassermann test) when tested with serums of patients who had recovered from endemic typhus, tsutsugamushi fever, Q fever and syphilis. There was a positive cross reaction for serum of Rocky Mountain spotted fever.

A new approach to the treatment of cancer of the skin was established by F. E. Mohs in the development of the chemosurgical method of therapy. This technic combined the use of a paste containing zinc chloride which hardens the tissues with the use of immediate microscopic examination of thin slices of tissue fixed by the paste so that the smallest processes of the cancer tissue could be located and removed. Thus the entire lesion could be removed, and massive destruction of tissue was avoided by applying the paste only to the area shown to be cancerous by the histologic examination.

Gradually increasing incidence of Rickettsial disease led to more intensive study during 1947 of a disease called eastern spotted fever, which had been indigenous to the Southampton, N.Y., area for several years. The dog tick, *Dermacentor variabilis,* was found to be the vector of the disease in this area. The pinkish, spotty eruption appearing first on the wrists and ankles and spreading centripetally, becomes full of large confluent spots of a deep purple colour, but no death of skin was seen as in Rocky Mountain spotted fever. Also, the white blood count and the differential blood count were normal except for a slight increase of white blood cells in about one-fourth of the cases. However, of the cases admitted to the Southampton hospital, there was a mortality of 30%.

A promising new therapy for Rocky Mountain spotted fever was further investigated by L. B. Flinn and associates following the report of the first use of para-aminobenzoic acid in this disease by H. M. Rose and others. This drug, when given in large doses at frequent intervals throughout the 24 hours, appeared to lessen definitely the morbidity and mortality of Rocky Mountain spotted fever.

With the continuing spread of the epidemic of ringworm of the scalp (tinea capitis), the subject was investigated from various angles. S. Rothman and his associates showed that adult hair contains a higher concentration of low boiling point saturated fatty acids than does the hair of children. The fatty acids that were particularly destructive of fungi were identified as those made up of an odd number of carbon atoms such as pelargonic, undecylenic and tridecylic acids. The increased concentration of these active fatty acids at puberty prevents the growth of *M. audouini*—a ringworm organism—in adult scalps, and by sterilizing the skin and follicles brings about a slow cure of the infection of the scalp when the infected hairs fall out naturally.

Since benadryl had been generally accepted as of value in the treatment of various allergic conditions, studies and development of other so-called antihistamine drugs were carried out. R. L. Mayer had first called attention to pyribenzamine (N′ pyridil-N′ benzyl-N-dimethylethylenediamine). E. D. Osborne and coworkers, who studied the use of this drug in diseases of the skin, reported that, as with benadryl, almost all patients with acute wheals and blisters (urticaria) were relieved and about two-thirds of those with chronic urticaria were benefited. They also found that patients with chronic allergic inflammation of the skin and with physical allergies responded to pyribenzamine in many cases. An important finding was the fact that at least in these cases, reactions to pyribenzamine were minimal.

A new drug for the treatment of lupus erythematosus (a skin disease with inflammation) was studied by C. S. Wright and E. R. Gross. This is a soluble salt, sodium bismuth triglycollamate ("Bistrimate"), which can be taken orally and was reported to be of low toxicity and therapeutically more effective than the injection of bismuth. Not all cases of lupus erythematosus responded to this therapy but the ease of administration, the low toxicity and the inconsistent responses to other therapy established the drug as one form of treatment to be tried. These investigators also reported improvement in some cases of scleroderma (hardening of the skin) treated by sodium bismuth triglycollamate.

The search for a satisfactory antibacterial agent for local use continued, and one such substance, Furacin, 5-nitro-2-furaldehyde semicarbazone, was investigated by J. G. Downing and coworkers. This particular agent was incorporated in a water soluble base. The investigators believed the drug to be of value in treatment of superficial infectious eczematoid inflammation of the skin, and in ulcers of the skin, either traumatic or postoperative bed sores on the back. Excellent results were obtained in impetigo. The fact that several patients developed local and even generalized skin sensitization, however, made general use of such treatment questionable.

The use of streptomycin in the treatment of various types of cutaneous tuberculosis was investigated by P. A. O'Leary and associates, and this drug showed some promise of being effective in treating scrofuloderma particularly. Another disease which appeared to respond to streptomycin was infected glands in the groin, according to R. L. Barton.

Following earlier investigations on the therapeutic use of nitrogen mustards, H. H. Henstell and J. N. Tober used the drug methyl-bis (B-chloroethyl) amine hydrochloride in the treatment of a case of mycosis fungoides. They reported that the eruption and the itching disappeared, at least temporarily. Temporary favourable results were also reported in this disease by O. S. Philpott and associates. (*See* also MEDICINE.)

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(H. Fx.)

**Destroyers:** *see* NAVIES OF THE WORLD.

## Detroit.

Fourth largest city of the United States in the 1940 census, Detroit is the centre of the large industrial area of southeastern Michigan. Area, 137.9 sq.mi.; pop. (1940) 1,623,452, of whom 320,664 were foreign-born whites, British and Canadian ranking first with 110,698, and Polish second with 52,235. Pop. est. (Jan. 1947), 1,785,000.

Assessed value as of June 30, 1947, $3,642,146,922; gross bonded debt, $299,955,900; net bonded debt, including u debt, $271,183,284; net tax supported debt, $205,796,916; city appropriations, fiscal year ending June 30, 1947, $ 305,615 including schools and utilities; tax levy, city and sc purposes, $98,965,469; combined city and school tax $28.585. Mayor, Jan. 6, 1948: Eugene I. Van Antwerp, ser a first two-year term.

Freed from important work stoppages, the automobile dustry reached an all-time peak of production during 1947. manufacture of replacement parts was four times that of highest prewar period; more trucks were produced than in previous year; the total output of trucks and cars exce 5,000,000. Production was slowed somewhat by shortag steel and parts. The Kaiser-Frazer company, operating at former Willow Run bomber plant, passed its other compet to become the fourth largest manufacturer of motor cars.

The most momentous change in the motor world resu from the death of Henry Ford and the passage of control o Ford industries to his grandson, Henry Ford II. The nonvc stock of the Ford Motor company passed to the Ford fou tion, giving it approximately a 95% ownership of the pany. The value of the foundation was estimated conse tively in excess of $500,000,000, making it the largest fou tion in the world.

Also of great importance to the automobile industry was election of Walter Reuther as president of the United A mobile Workers (Congress of Industrial Organizations), an executive committee favourable to him. Since the oppos was allegedly radical left wing, the election presaged a p of regularized labour relations.

Although the city was free from serious labour difficulti relative minor disturbance, the strike of garage mechanics, important political effects. Edward J. Jeffries, Jr., who ma bid for a fifth term as mayor, was accused of limiting p activity in a turbulent situation. His opponent, Eugene I. Antwerp, won by a substantial majority said to have augmented, if not created, by the attitude of Mayor Jeffri the strike and by his endorsement by the U.A.W.-C.I.O. new councilmen in a total of nine were also elected ove candidates endorsed by the C.I.O.

The tax rate was reduced by nearly $4 a thousand of ass valuation over the previous year, a loss made up in part 10% increase in assessments. Late in 1946 the voters adc a constitutional amendment sponsored by Detroit officials designed greatly to increase state aid to local units of go ment (est. $11,000,000 for Detroit) and to alleviate the h tax on real property. This was promptly off-set by legisl reduction in other state grants and resulted in a defic excess of $7,000,000—the first major operating deficit decade.

(L. D. U

## Dewey, Thomas Edmund

(1902– ), U.S. lawye politician, was born on M 24 in Owosso, Mich. Graduating from the University of M gan, Ann Arbor, Mich., he took his law degree at Colu university, New York city, 1925, and was admitted to the York bar the following year.

In 1933 Dewey was U.S. district attorney for New Y southern district, in which post he achieved nation-wide pr nence for his successful prosecution of gangsters and crimi In 1938 he ran as Republican candidate for governor but defeated by Herbert H. Lehman, the Democratic incum by a narrow margin. Four years later (1942), Dewey ran and this time was elected.

Although Dewey lost out to Wendell L. Willkie as G candidate for president in the 1940 Republican national ention, he won the nomination on the first ballot in the party's nvention in 1944. In the election, Dewey received more than 2,000,000 votes, but was defeated by Franklin D. Roosevelt. is re-election as governor of New York in 1946 again put im in the forefront of presidential aspirants for 1948. How- ver, his refusal to commit himself during the first ten months f 1947 caused apprehension among his supporters. He ended is long silence on Oct. 10 with a nation-wide broadcast in hich he maintained that the health of the U.S. people must ave precedence over the admitted responsibility for feeding urope's hungry.

While he was still regarded as one of the leading presidential hopefuls," his candidacy was unannounced as the year ended.

**iabetes.** Diabetes ranked sixth, barring accidents, as a cause of death in the United States during the rst nine months of 1947, according to a survey by the Metro- olitan Life Insurance company. In another survey, conducted y the United States public health service in Oxford, Mass., ests were made of 3,516 individuals, or 70.6% of the 4,983 habitants. There were 40 known diabetics in the community rior to the survey, and 30 unknown diabetics were discovered. he inference was, therefore, that if all residents had been xamined, an unknown diabetic would have been discovered for ach known case. The implication would be that instead of ,000,000 diabetics in the United States there were actually ,000,000.

The death rates and life expectancies of diabetic patients for uccessive periods in the experience of the George F. Baker linic were tabulated by the Metropolitan Life Insurance com- any in 1947. The accompanying table is notable in that it hows an uninterrupted decrease in mortality for all ages and ll periods during the years 1897–1945.

*Death Rates per 1,000 at Specified Ages Among Diabetic Patients in Successive Periods, 1897-1945; Experience of George F. Baker Clinic, Boston, Mass.*

| | Death Rates per 1,000 | | | | | |
|---|---|---|---|---|---|---|
| | Preinsulin Era | | Insulin Era | | | |
| ge | 1897–1913 | 1914–1922 | 1922–1925 | 1926–1928 | 1929–1938 | 1939–1945 |
| 0 | 824.0 | 386.1 | 61.4 | 19.1 | 8.1 | 4.6 |
| 5 | 623.0 | 398.8 | 84.0 | 14.9 | 9.2 | 5.6 |
| 0 | 614.0 | 410.8 | 89.4 | 18.3 | 12.6 | 7.6 |
| 5 | 585.6 | 342.8 | 77.4 | 28.0 | 15.9 | 10.1 |
| 0 | 359.8 | 236.8 | 74.8 | 33.4 | 13.9 | 9.8 |
| 5 | 200.6 | 152.1 | 57.5 | 28.5 | 10.6 | 9.4 |
| 0 | 165.7 | 115.1 | 34.7 | 23.8 | 16.6 | 10.4 |
| 5 | 119.8 | 87.1 | 33.4 | 26.3 | 22.2 | 15.2 |
| 0 | 96.1 | 77.4 | 45.3 | 41.0 | 30.6 | 24.3 |
| 5 | 97.1 | 90.1 | 64.2 | 56.5 | 46.4 | 36.4 |
| 0 | 188.8 | 112.5 | 85.2 | 70.1 | 66.6 | 52.4 |

Note:—Excludes deaths within one week of first observation or hospital discharge.
*Statistical Bulletin,* Metropolitan Life Insurance Company, Aug. 1947.

An analysis of cases admitted to the Central hospital in oras, Sweden, between 1932 and 1941 revealed that at the onclusion of the period, 515 were alive (66%), 240 dead 30.8%) and 24 untraced (3.2%). Females predominated among he living, 55.8%, and among the dead, 60.7%. A comparison as made between the results of treatment for the first five ears, during which Petrén's low carbohydrate diet was em- loyed, and the second five years, in which a "normal" diet was iven, but the writers carefully pointed out that many extrane- us factors entered into such a comparison. The mortality was ssentially the same in the two periods. However, it should be entioned that insulin was given to 52.5% of the patients in he first five years compared with 74.2% in the second five ears.

Improvements in the manufacture of insulin as a result of iscoveries in Denmark and the United States were reported by harles H. Best. An anti-insulin factor, a small amount of hich had been present even in crystalline insulin, was elimi- ated; although this achievement was not of great clinical significance, it was of real scientific importance. Furthermore, new methods disclosed how both insulin and trypsin can be obtained from the pancreas without sacrificing the one to the other. Thus the diversion of millions of pounds of pancreas to the amino-acid digest and tanning industries could now be averted and make more insulin available for diabetics.

Recognition of the work of Carl F. and Gerty Cori of St. Louis for their discovery and isolation of the enzyme phosphorylase which begins the conversion of glycogen into sugar in the metabolism of carbohydrate, and of Dr. Bernardo A. Houssay of Buenos Aires for his discovery of the significance of the hormone produced by the frontal lobe of the hypophysis and its importance in the distribution of glycogen in the body and in the control of diabetes was accorded by the Nobel prize committee.

D. Stetten, Jr., proved that once glucose has been phosphorylated it may be converted to glycogen, to fat or it may be oxidized. He and his co-workers showed that in the well-nourished rat, only about 3% of the glucose ingested is converted to glycogen, while about 30% is consumed in the manufacture of fatty acids.

A. Lazarow found that intravenous injection of large doses of glutathione or cysteine, sulphhydryl compounds normally found in the body, a minute or two prior to the injection of a diabetogenic dose of alloxan, protected the rat completely from diabetes. BAL (British anti-lewisite) also prevents the diabetogenic action of alloxan in rats, presumably because it, too, is a sulphhydryl compound. A low protein diet or high lard diet increases the rats' susceptibility to alloxan. The high lard diet, however, loses this effect if methionine, thiouracil or coconut oil is added. Although encouraging results were cited in one case of hyperinsulinism presumably due to islet cell adenoma treated with alloxan, very poor results were described by others as summarized by C. C. Bailey and P. le Compte.

The appalling incidence of arteriosclerosis in diabetes was shown by an investigation of its presence in the eyes and the arteries of 200 among 350 diabetic children who had survived the disease for more than 20 years. Of this group all but eight had lesions in the eyes and the vessels as demonstrated by X-ray or by disease of the kidneys. Particularly notable in this study by Priscilla White was the demonstration that pelvic arteriosclerosis was common, and especially that it was of prognostic import for the foetus in pregnant diabetics. When calcified pelvic arteries were found in pregnant women the chances for a living child were reduced to one in five. The tendency to calcification was so strong in diabetics that among 19 instances of calcification of the vas deferens there was but one in a non-diabetic.

In H. Dolger's studies of 200 diabetics of 25 years' duration, not one had escaped vascular damage as shown by retinal haemorrhages, albuminuria, or hypertension in varying degree. On the other hand, in the children's series investigated by White, there were a few instances in which no evidence of arteriosclerosis was found by competent ophthalmologists, roentgenologists and clinicians after 20 years, and at least two in cases with onset in childhood but of 25 years' duration. (*See* also PHYSIOLOGY.)

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## Diamonds.

Data on the output of diamonds in the major producing countries and the estimated world total are presented in Table I, as compiled by S. H. Ball in *Minerals Yearbook.*

Table I.—*World Production of Diamonds, 1940–46*
(Thousands of carats)

| | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|---|
| Angola. . . . | 784 | 787 | 792 | 795 | 799 | 804 | 808* |
| Belgian Congo. | 9,603 | 5,866 | 6,018 | 4,881 | 7,533 | 10,386 | 6,033 |
| French Africa . | 91* | 88 | 96 | 92 | 130 | 163 | 139 |
| Gold Coast . . | 825* | 1,000* | 1,056 | 1,317 | 1,166 | 812 | 830* |
| Sierra Leone . | 750 | 850 | 1,046 | 834 | 609 | 504 | 559 |
| South Africa. . | 543 | 158 | 119 | 302 | 934 | 1,141 | 1,282 |
| S.W. Africa . . | 30 | 47 | 56 | 94 | 154 | 153 | 164 |
| Tanganyika . . | 6 | 29 | 40 | 53 | 91 | 116 | 119* |
| Brazil . . . . | 325* | 325* | 300* | 275* | 301* | 275* | 325* |
| Others . . . . | 58 | 63 | 63 | 48* | 48* | 30* | 53* |
| Total. . . . | 13,016 | 9,210 | 9,587 | 8,694 | 11,764 | 14,384 | 10,313 |

*Estimated.

The production total for 1946 shows a decrease of 28% from 1945, practically all of which was confined to Belgian Congo. Increases in output were scattered, the largest of which was in South Africa.

**Cutting.**—When the German invasion of the Low Countries disrupted the diamond-cutting centres in Antwerp and Amsterdam, new cutting centres were established or existing ones were expanded in Palestine, Cuba, South Africa, Brazil and England. By 1947 the Belgian and Dutch industries were again getting on their feet and there was a surplus of cutting capacity.

**United States Imports.**—The imports of diamonds into the United States showed a sharp increase in 1946. While the major increase was in cut stones, the increasing importance of the cutting industry established in New York city was evidenced by imports of rough stones which for the first time exceeded 1,000,000 carats.

Table II.—*U.S. Diamond Imports, 1939–46*
(Thousands of carats)

| | Rough | Cut | Industrial | Total |
|---|---|---|---|---|
| 1939 . . . . . . . . . . | 153,982 | 488,154 | 3,570,111 | 4,212,247 |
| 1940 . . . . . . . . . . | 227,886 | 321,471 | 3,809,856 | 4,359,213 |
| 1941 . . . . . . . . . . | 215,026 | 229,582 | 6,882,750 | 7,327,358 |
| 1942 . . . . . . . . . . | 278,437 | 126,004 | 11,204,754 | 11,609,195 |
| 1943 . . . . . . . . . . | 751,674 | 193,701 | 12,173,918 | 13,119,293 |
| 1944 . . . . . . . . . . | 896,547 | 169,097 | 12,656,823 | 13,722,467 |
| 1945 . . . . . . . . . . | 893,761 | 377,243 | 10,792,186 | 12,063,190 |
| 1946 . . . . . . . . . . | 1,044,517 | 604,638 | 4,705,118 | 6,354,273 |

Most of the rough diamond imports reach the United States directly from South Africa, but cut stone imports come from all of the various cutting centres. Arranged according to the decreasing order of magnitude of the 1946 imports, the sources of supply of cut stones were in the following order: Belgium, Palestine, South Africa, Cuba, Netherlands, England and Brazil.

Although gem stones make up the greater portion of the value of the diamond imports, industrial diamonds make up the bulk of the weight. Imports of industrial diamonds in 1946 dropped heavily but still showed an increase in value, indicating a market advance in prices, from $1.19 per carat in 1945 to $3.04 per carat in 1946. (G. A. Ro.)

## Diatomite.

The production of diatomite in the United States is not reported annually, but sales in the three-year period 1942–44 averaged 140,624 short tons per year. This average was reported to have been exceeded in 1945 and again by a considerable margin in 1946. More than half of the output is used as a filter aid, about one-fifth as filler ar
eighth as insulation. (G. A.

**Dictatorships:** *see* COMMUNISM; FASCISM; SPAIN; UN
SOVIET SOCIALIST REPUBLICS.

**Dietetics:** *see* FOOD RESEARCH.

**Dimension Stone:** *see* STONE.

## Dimitrov, Georgi

(1882– ), Bulgarian statesma
born on June 18, at Radomir. A
positor by trade, he was active in the trade union mov
and in 1904 was elected secretary of the Trade Union
tion. In 1919 he was in control of the Bulgarian Com
party and two years later was elected member of the exe
committee of the Comintern. In Sept. 1923 a coup d'ét
ganized by him in Bulgaria failed and he fled to Moscow,
he was active as organizer and supervisor of the Com
movement on behalf of the Comintern. Arrested in Germ
1933, he was charged with complicity in the burning
Reichstag, but was acquitted. On returning to Moscow
appointed secretary-general of the Comintern in 1935 an
office until the official dissolution of that body in 1943.
meantime he became a soviet citizen and in 1937 was
deputy to the supreme soviet (parliament). He retur
Bulgaria in 1944 to transform the country into a Com
republic. After succeeding in this objective he renounced
citizenship and reverted to Bulgarian nationality. On N
1946, Vasil Kolarov, president of the republic, appointe
prime minister. In July 1947 he made a state visit to Be
and in November went to Sochi, Georgia, where he
Joseph Stalin.

## Dinnyes, Lajos

(1901– ), Hungarian statesman
born in 1901 in Alsódabas in the cou
Pest, of a Protestant farmer's family. After his secondar
cation at a Protestant grammar school, he graduated fro
Agricultural academy at Keszthely. Elected to parliam
1929, he belonged to the dissident Agrarian group led by G
Gaal, which later fused with the Independent Smallh
party. Dinnyes was returned to parliament at the genera
tions of 1931 and 1936. He was a member of the opp
against Gen. Julius de Gombos' pro-fascist government.
Gombos' death in 1936, the political importance of the
pendent Smallholders considerably increased and Dinnyes
a part in the opposition to German influence. He had to g
hiding after March 1944, when German forces assume
control over Hungary, and reappeared only after the R
army had driven out the German forces in the winter of 19
A deputy of the constituent assembly in Nov. 1945, he succ
General Albert Bartha as minister of national defense on
15, 1947, and after Ferenc Nagy's resignation (*see* HUNG
he was appointed prime minister on May 31, as leader
group of the Smallholders party which still consented to r
in the coalition with the communists. The Smallholders
suffered a heavy defeat at the elections on Aug. 31, 1947.
the less, Dinnyes, after some reshuffling of his cabinet, rem
as prime minister. (B. M

**Diplomatic Services:** *see* AMBASSADORS AND ENVOYS.

## Disabled American Veterans.

An organizati
veterans, com
called the D.A.V., who served honourably in time of war
armed forces of the United States and who became wou
gassed, injured or disabled as a result of that service. A
group of World War I veterans, while taking vocational

ing in Cincinnati, O., early in 1920, founded this organization in an attempt to improve the methods then being inefficiently employed in the administration of the affairs of veterans in vocational schools, hospitals and the then existing complicated system of overlapping government bureaus.

There was steady growth in the importance and usefulness of the organization. In recognition of its policies and valuable services to disabled veterans, their dependents and the public, a charter was granted by congress in 1932, and was amended in 1942 to extend eligibility to those who served in World War II.

The training of disabled veterans to handle administrative and service duties connected with assisting disabled veterans in their claims for benefits to which they are entitled continued to completion during 1947, with more than 300 such trainees having finished their studies in American university, Washington, D.C.

Funds for maintaining the executive and service activities are derived from per capita tax from membership dues, from voluntary gifts and contributions and from other sources. The production and distribution of "Ident-O-Tags," assumed by the organization in 1946, was continued in 1947, and yielded a substantial portion of the total financial income. The "Ident-O-Tags" are miniature automobile licence plates, worn on key rings. In the event that the keys are lost, the finder may deposit them in any letter box. They are then delivered to D.A.V. headquarters for identification and subsequently returned to the owner without charge.

National headquarters are located at 1423 E. McMillan street, Cincinnati, O. National service offices are maintained at 1701 Eighteenth street, N.W., Washington, D.C. As of 1947, Vivian D. Corbly had served for 22 years as national adjutant and business manager in charge of executive functions at national headquarters. At the annual convention in Las Vegas, Nev., on Aug. 22, 1947, John L. Golob was elected national commander.

Membership at the close of the fiscal year, June 30, 1947, was 127,023 in about 1,200 local chapters throughout the United States and in foreign countries. Eligibility requirements are such as obviously limit the numerical strength of the organization, but in 1947 it nevertheless ranked third in size among all veterans' organizations in the United States.

Publications include a newspaper, *The D.A.V. Semi-Monthly*, sent to all members, also reports to congress, various pamphlets and leaflets occasionally distributed to acquaint potential members and the public with the activities of the organization, and the annual convention proceedings.

The women's auxiliary is composed of wives, widows, mothers, sisters, daughters and granddaughters of D.A.V. members. Mrs. Fred C. Jeths, Chicago, Ill., was national commander in 1947. Headquarters office was at Colorado Springs, Colo., where Mrs. Ann Weber served as national adjutant. (*See* also VETERANS' ORGANIZATIONS.) (V. D. C.)

## Disasters.

During 1947 loss of life and property in disasters included the following:

### Aviation

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|---|---|
| Jan. 4 | Northern Brazil. Eleven passengers and crew members of Brazilian air liner were killed when craft crashed into Solimoes tributary of Amazon river. |
| Jan. 5 | Near Tsingtao, China. Crash of Chinese air liner brought death to all 42 persons aboard craft. |
| Jan. 12 | Galax, Va. Passenger air liner flying from Detroit, Mich., to Miami, Fla., burst into flames after crashing during rainstorm, bringing death to 15 passengers and all 3 crew members; only 1 person survived disaster. |
| Jan. 12 | South China sea, off northern Luzon. Thirty-six survivors of air liner that crashed into South China sea were rescued by U.S. army transport "Gen. E. T. Collins." Six others aboard aircraft were killed in crash. |
| Jan. 25 | Hong Kong, China. Crew of 4 were killed and $5,000,000 cargo in gold bullion and coins was scattered when craft of Philippine air lines crashed into peak near Hong Kong. |
| Jan. 25 | Croydon airport, England. Dakota air liner crashed and burst into flames a few minutes after take-off. Twelve of 23 persons aboard were killed. |
| Jan. 26 | Near Copenhagen, Denmark. All 22 persons, including Grace Moore, U.S. opera star, and Prince Gustavus Adolphus of Sweden, aboard Dakota air liner of K.L.M. (Royal Dutch Airlines) were killed when craft crashed and exploded onto Kastrup airport several minutes after taking off. |
| Jan. 27 | Albuquerque, N.M. Army B-29 plane crashed and caught on fire shortly after take-off from Kirtland field, killing 11 persons. |
| Feb. 1 | Near Cintra, Portugal. Sixteen persons aboard French passenger plane were killed when craft crashed into peak near Lisbon airport. |
| Feb. 5 | West of Madrid, Spain. Crash of Cuban air liner in mountains west of Madrid resulted in death of all 11 occupants of craft. |
| Feb. 13 | Near Macon, Ga. All seven occupants aboard army passenger plane were killed when craft crashed in Georgia swamp. |
| Feb. 15 | Near Terracina, Italy. Seventeen persons, including Princess Armena Sazil of Egypt, were killed when army plane in which they were riding crashed into Tyrrhenian sea. |
| Feb. 15 | Near Bogota, Colombia. Fifty-three occupants of Avianca Airlines passenger plane were killed after plane crashed into El Tablazo cliff, 30 mi. northwest of Bogota. |
| March 14 | Near Grenoble, France. Air France passenger plane passing through heavy fog crashed into mountainside in French Alps, bringing death to all 23 occupants of craft. |
| April 18 | London, England. R.A.F. reported Halifax aeroplane with crew of nine was missing on meteorological flight from its base in Northern Ireland. |
| April 21 | Kwajalein, Marshall Islands. Fourteen U.S. army air force personnel aboard B-29 that crashed into Pacific shortly after its take-off from Kwajalein were presumed dead. |
| April 22 | Columbus, Ga. Nine persons were killed when 2 aircraft collided 30 ft. above Muscogee airport and crashed in flames. |
| May 20 | Near Champaign, Ill. Crash of army plane resulted in death of five persons aboard craft. |
| May 29 | New York city, N.Y. Crash of four-engined commercial air liner near La Guardia field shortly after its take-off brought death to 44 persons and injuries to 5 others on craft. |
| May 29 | Southwest of Tokyo, Japan. U.S. army courier plane flying to Tokyo from Korea struck mountain southwest of capital killing all 40 persons aboard craft. |
| May 29 | Northern Iceland. Icelandic air liner crashed into mountainside, killing all 25 occupants aboard. |
| May 30 | Port Deposit, Md. All 53 persons aboard commercial air liner that crashed and burned in wooded swamp in Cecil county, Maryland, were killed. |
| June 13 | Near Charles Town, W.Va. Air liner carrying 50 passengers and crew members crashed into mountain top near there and exploded, bringing death to all persons aboard craft. |
| June 15 | Near Springfield, Vt. Twelve men aboard army B-29 bomber that crashed and exploded onto granite ledge of Hawkes mountain were killed. |
| June 18 | Mayadine, Syria. U.S. air liner en route from Karachi, India, to Istanbul, Turkey, crashed near east bank of Euphrates river, killing 15 of 36 persons aboard. |
| July 13 | Melbourne, Fla. Crash of DC-3 air liner in coastal swamp brought death to 21 persons aboard craft, including 18 Puerto Rican residents of New York city who had chartered plane for visit to homeland; 15 others were injured. |
| July 29 | Eglin Field, Fla. B-29 superfortress crashed in swamp north of airfield after taking off on routine flight, bringing death to nine of crew and injuries to remaining two crew members. |
| Aug. 7 | Everett, Mass. Four persons were burned to death when pilot of small plane apparently mistaking glowing lights for airport illumination, steered craft into maw of flaming oil and gas furnace. |
| Aug. 16 | West of Oahu, Hawaii. Six of 13 passengers were killed and 4 others, including George Atcheson, Jr., ranking U.S. diplomat in Japan, were missing and presumed dead when army B-17 plane bound from Tokyo to Washington, D.C., forced down by fuel shortage, sank in Pacific; remaining 3 were rescued. |
| Aug. 28 | Northern Norway. Thirty-five persons were killed when Norwegian hydroplane crashed against mountainside near Lofoten Islands. |
| Sept. 15 | Near Aberdeen, Md. Nine of 10 persons aboard B-17 perished when bomber exploded and crashed into Bush river; lone survivor parachuted to safety. |
| Sept. 19 | Nazca, Peru. At least 3 persons were killed in crash of U.S. army transport plane en route from La Paz, Bolivia, to U.S.; 11 others were listed as missing. |
| Sept. 27 | Near New Delhi, India. Fourteen persons aboard British army plane were killed when craft crash-landed at Palam airport. |
| Oct. 16 | Near Cartagena, Spain. Forty-two of 44 persons aboard French air liner that crashed in Mediterranean were believed lost. |
| Oct. 24 | Bryce Canyon, Utah. All 52 persons aboard passenger air liner were killed when craft crashed into hillside. |
| Oct. 26 | Near Athens, Greece. Crash of Swedish air liner on Mt. Hymettos brought death to 45 persons aboard craft. |
| Oct. 26 | Annette Island, near Ketchikan, Alaska. All 18 persons aboard commercial air liner perished when craft crashed into mountainside. |
| Oct. 28 | Dog Lake Mt., Oregon. Gov. Earl Snell (of Oregon), his two companions and pilot were killed in crash of private aircraft into mountainside. |
| Nov. 18 | Near Ravello, Italy. Twenty Swedish pilots were killed and five others were injured when Swedish air liner crashed near there. |
| Nov. 27 | Near Yakutat, Alaska. All 13 persons aboard commercial air liner were killed when craft crashed shortly after predawn landing attempt. |
| Dec. 9 | Near Goose Bay, Labrador. Twenty-three of 29 persons aboard |

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| | U.S. C-54 air transport plane were killed in crash; 6 survivors were evacuated from scene by helicopter. |
| Dec. 11 | Near Memphis, Tenn. All 20 persons aboard army C-47 plane were killed when craft crashed on wooded hillside. |
| Dec. 11 | Europe. U.S. air force ended search for C-47 plane which vanished Nov. 28 with 20 persons aboard while en route from Pisa, Italy, to Frankfurt-on-Main, Germany. |
| Dec. 16 | Near Davis-Monthan airfield, Ariz. Twelve persons were reported killed in crash of B-29 superfortress. |

## Fires and Explosions

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| Jan. 13 | Nottingham, Pa. Gas explosion in coal pit resulted in death of 15 miners. |
| Feb. 8 | Berlin, Germany. Overheated furnace caused fire in dance hall in British zone. Many of patrons were killed or injured in panicky attempts to flee from burning building. Toll of dead was put at at least 81 and number of missing at 10. |
| Feb. 20 | Los Angeles, Calif. Sixteen persons were killed and about 100 others injured in explosion that completely razed electroplating plant and badly damaged near-by buildings. Cause of blast was laid to mistake in mixing chemicals. |
| March 25 | Centralia, Ill. One hundred and eleven miners were killed in explosion in coal pit. |
| March 30 | Camden, N.J. Forty-year-old woman, 6 of her 14 children and her grandson were burned to death in fire that destroyed their home. |
| April 2 | Clinton, Mo. Twelve workers were killed in fire and explosion that wrecked one-story frame fireworks plant. |
| April 10 | Exeter, Pa. Gas pocket blast in coal mine brought death to ten miners and injuries to nine others. |
| April 16–18 | Texas City, Tex. Five hundred and fifty persons were killed in catastrophic series of explosions set off by blast of nitrate cargo in anchored ship that destroyed larger part of Texas City, setting fire to chemical plants, oil refineries, docks, buildings, etc. Estimated damage caused by fires was put at $35,000,000. |
| April 18 | Fiume, Italy. Twenty-six persons were killed when dynamite-laden freight car exploded, causing heavy damage to station and near-by buildings. |
| June 22 | Wilmington, Calif. Explosion on tanker carrying 3,000,000 gal. of gasoline destroyed shore installations valued at about $10,000,000 and brought death to at least 4 crewmen; 10 others were missing. |
| July 1 | Santo Stefano, Italy. Blast aboard freighter "Panigaglia," which occurred during unloading of munitions, resulted in death of at least 68 crew members and dockers. |
| July 29 | Harrisonburg, Va. Blast that wrecked beauty shop killed 13 persons and injured 30 others. |
| July 31 | Paris, France. Twenty-one women prisoners perished in flash fire that swept through Caserne des Tourelles barracks. |
| Aug. 15 | Whitehaven, Cumberland, Eng. One hundred and four miners perished in blast that trapped them in undersea workings of mine. |
| Aug. 18 | Cádiz, Spain. Explosion in naval arsenal resulted, according to unofficial estimates, in 149 deaths and injuries to 5,000 others; government refused to permit publication of complete casualty figures. |
| Aug. 23 | Annfield Plain, Eng. Nineteen miners were killed in explosion in Morrison North coalpit. |
| Aug. 30 | Rueil, France. Eighty-seven persons perished in fire that stroyed Select motion picture theatre; estimated 200 others injured. |
| Oct. 9 | Chicago, Ill. Ten persons perished in fire of unknown origin started in four-story tenement populated by Negroes. |
| Oct. 21 | Hof, Germany. Twenty-eight persons were burned to deat fire that razed asylum for old people. |
| Oct. 24 | New England. Forest fires sweeping through New Engl particularly Maine, destroying large part of Bar Harbor, ca damage estimated at $30,000,000 and razed 110,000 ac timberland and townships; at least 17 persons perished. |

**RESCUE WORK** at Texas city, Tex., which was virtually destroyed by fire and explosions on April 16-18, 1947. A freighter carrying nitrates blew up, setting off nearby oil and chemical plants; 550 persons were killed and thousands injured

## Marine

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|---|---|
| Jan. 19 | Gulf of Petalia, Greece. One thousand, five hundred-ton Gr steamship "Himara," plowing through heavy seas 20 mi. offsh from Athens, struck mine near entrance to Gulf of Petalia sank in 30 min. At least 392 persons of 637 passengers and cr men aboard vessel were killed or drowned. |
| Jan. 30 | Near Cape Finisterre, Spain. Eighteen of 44 persons who esca in lifeboats from burning British ship "Samwater" were drow after 2 lifeboats capsized in heavy seas. |
| March 21 | Near Honolulu, Hawaii. Twelve or 13 men who escaped in lifeb when tanker "Fort Dearborn" split in two on March 12, presumed lost at sea after thorough navy search for surviv proved fruitless; 22 others were rescued from ship which s 500 mi. from Honolulu. |
| April 24 | Porthcawl, England. Tanker "Samtampa" smashed up in he seas near there; 40 persons aboard who abandoned wrecked s were lost, as well as 8 members of a lifeboat crew who went the rescue. |
| June 4 | Off Isle Royale, Mich. Twelve crew members perished in sink of Canadian freighter "Emperor" that rammed against ro jutting out into Lake Superior. |
| July 17 | Bombay, India. Small ferry steamer "Ramdas" sank in sto in Bombay harbour; about 626 persons aboard 400-ton c were believed lost. |
| July 28 | Brest, France. Explosion aboard Norwegian freighter "Oc Liberty," laden with nitrate, killed at least 8 persons and inju several hundred others; vessel caught fire and exploded just side of Brest harbour; damage caused by blast was estimated minimum of $3,000,000, as flames spread to city. |
| Sept. 9 | Pittsburgh, Pa. Twenty-one persons were killed in blast that fire to excursion steamer "Island Queen." |
| Nov. 25 | Hippa Island, off British Columbia. Forty-nine persons presumed drowned in wreck of army transport "Clarksdale tory" off Hippa Island; four persons were rescued. |
| Dec. 1 | Oporto, Portugal. Hurricane that struck north and south Oporto virtually wiped out Portugal's north coast fishing and killed or drowned at least 160 fishermen. |
| Dec. 24 | Southwest Finland. Ten U.S. merchant seamen were killed died of exposure in wreck of U.S. freighter "Park Victory" Turku. |
| Dec. 25 | The Hague, Netherlands. Twenty-six aboard "Skoghaug," wegian ship, perished when vessel struck mine off Netherla coast. |

## Miscellaneous

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| Dec. 13 | Boyacá department, Colombia. At least 37, and possibly 50, sons were killed when the Pauna bridge spanning the Minero r suddenly collapsed. |

## Natural

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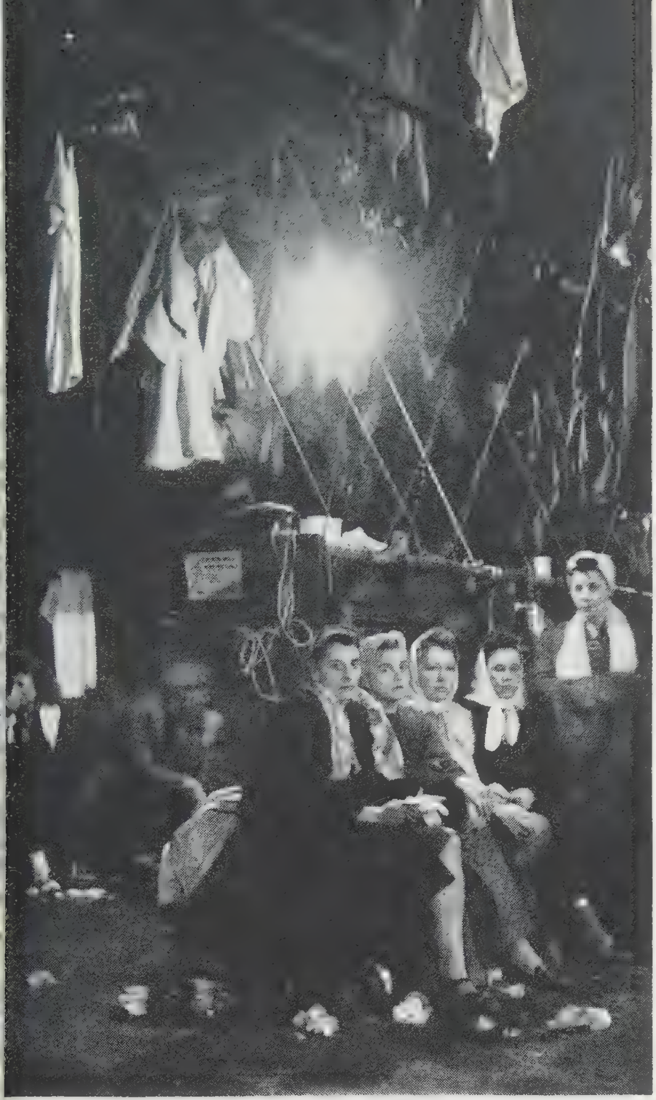
| Jan. 30 | Southern U.S. At least 20 persons were killed by tornado swept through Georgia, Alabama, Arkansas, Tennessee Missouri. |
| April 9 | Western Texas and Oklahoma. Tornado whipping through sou western U.S. communities killed 167 persons and injured 1, more; 70% of town of Woodward, Okla., was destroyed by twis |
| April 29 | Worth, Mo. Freak windstorm razed every building on Wort main street, killing 16 persons and injuring 25 others. |
| June 1 | Pine Bluff, Ark. Tornado sweeping through rural communitie Pine Bluff region killed 35 persons, injured scores more and cau heavy property damage. |
| June 22 | Cambridge, Neb. Sixteen persons were killed in flash flood inundated Cambridge at dawn, catching most of its residents bed. |
| July 5 | St. Louis, Mo. Floods in Missouri and upper Mississippi vall brought death to 16 persons, left 34,812 others homeless caused damage totalling at least $850,000,000. |
| Sept. 17–19 | Gulf of Mexico. Violent hurricane that cut through south Florida and struck Louisiana and Mississippi before spend itself, caused widespread property damage; casualties were put 84 dead and missing. |
| Sept. 20 | Honshu Island, Japan. Five-day floods borne in wake of typho caused widespread damage in Kanto and Tohoku districts; fi casualty figures were 999 persons killed, 984 missing and 1, injured. |
| Sept. 21 | New Orleans area, La. Floodwaters coming in wake of hurric inundated vast areas, caused heavy crop damage, crippled co munications and resulted in casualty toll of 55 dead, with oth listed as missing. |
| Oct. 5 | Eastern India. Disastrous flood in eastern Bengal destro 100,000 tons of rice and thousands of cattle; made 1,000,000 sons homeless and caused famine that took thousands of lives. |
| Nov. 2 | Andes Mountain region, Chile. Earthquake that struck east Lima killed 233 persons and destroyed considerable property. |
| Dec. 26 | New York city and North Atlantic states. Greatest snowfall |



OMEN keeping a night-long vigil following the coal dust explosion at Cen-alia, Ill., on March 25, 1947, when 111 miners lost their lives in the worst .S. mine disaster after 1928

recorded history of New York blanketed city under record snow mantle of 25.8 in. Storm, heaviest in metropolitan area, paralyzed all forms of traffic, buried city under estimated 99,000,000 tons of snow and resulted in 55 deaths in 8 North Atlantic states. (*See* also SEISMOLOGY.)

### ailway

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| ın. 17 | Near Bakersfield, Cal. Eight persons were killed and 70 were injured in derailment of Southern Pacific railway train. |
| ın. 27 | Walton, Ind. Four persons were killed and 20 injured when a roll of bailing wire derailed a Pennsylvania railroad train en route from Cincinnati to Chicago. |
| eb. 17 | Near Michigan City, Ind. Thirteen railway workers were killed when electric train crashed into their bus at crossing. |
| eb. 18 | Near Altoona, Pa. Twenty-four persons were killed and 124 others injured when Pennsylvania railroad flyer pitched over 150-ft. embankment as it headed for celebrated "horseshoe curve," 2 mi. west of scene of accident. |
| ug. 9 | Near Doncaster, Yorkshire, England. Collision of 2 trains packed with holiday crowds outside the Doncaster railway station resulted in death of at least 17 persons and injuries to 46 others. |
| ug. 23 | Near Berlin, Germany. Twenty-four persons were killed and more than 50 others injured when overcrowded passenger coach of train caught fire; fire started mysteriously in section where packages of films and gasoline were stored in same car. |
| ept. 1 | Dugald, Man. At least 35 persons were killed when speeding train plowed into stationary transcontinental express at flag station. Estimated 15 other persons were listed as seriously injured. |
| ept. 30 | Central Java. Twenty-five persons were killed and 70 others were injured when 4 passenger coaches broke loose from train and rocketed down steep hill between Parakan and Temanggung. |
| ct. 24 | South Croydon, England. Thirty-one persons were killed and more than 70 others injured when speeding suburban train ploughed into slowed train ahead, telescoping 2 rear passenger coaches. |
| ct. 26 | Near Goswick, England. Twenty-eight persons were killed when speeding London express jumped track and hurtled into embankment; 71 others were injured. |
| ec. 12 | Pontmort, France. Collision of fast passenger express with mail train brought death to at least 17 persons. |
| ec. 22 | Fahr-Irlich, Germany. Head-on crash between 2 express trains resulted in death of 36 persons and injury to more than 300 others. |

### Traffic

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| Oct. 15 | Near Mazagan, French Morocco. Fifteen persons were burned to death when bus and truck collided and burst into flames. |
| Oct. 25 | Palestine. Thirteen British soldiers were killed or mortally injured in collision of two army buses on Haifa-Jerusalem road. |
| Dec. 26 | Near Como, Italy. Twenty-one skiers were killed and 29 others injured when truck in which they were riding ran off mountain road. |

**Disciples of Christ.** Statistics as of June 30, 1947, showed a world membership of 1,838,397 (loss of 50,667 for the year), of whom 1,703,010 (loss of 15,000) were in the United States and Canada. Additions by baptism numbered 59,350 in U.S. and Canada (up 11%), more than one-fourth of which were reported from Indiana and Oklahoma. In addition, there were 7,404 baptisms in other countries. The apparent loss in membership may not, and probably does not, reflect a decrease in strength. The Disciples are a free association of autonomous congregations. The margins of the group, for statistical purposes, are somewhat vague, owing to the existence of a fringe of churches whose willingness to co-operate with the central agencies, or even to report to them, varies from season to season. During the same period, and doubtless for the same reason, the number of congregations reported in the U.S. and Canada dropped from 7,945 to 7,844. Of these, only 5,871 made contributions through agencies reporting to the international convention or through state and provincial missionary societies. The total of gifts for missions and benevolence through the co-operative agencies was $10,376,544, an increase of $435,492 over the preceding year. Of the total amount, $596,293 was contributed as "Week of Compassion" gifts. The per capita average of gifts for missions and benevolence was $5.89. The resumption of foreign missionary work continued with accelerated tempo. A joint committee was exploring the possibility of union between Disciples of Christ and the Northern Baptist convention. Friendly but noncommittal reply was made to a suggestion looking toward union with the Congregationalists, and the Disciples joined with the Congregationalists in petitioning the Federal Council of Churches to invite to a conference on union all those denominations which "recognize one another's ministry and sacraments." The international convention (U.S. and Canada) met at Buffalo, N.Y., July 29–Aug. 6, 1947, with Rev. Hampton Adams, St. Louis, Mo., as president. It elected Rev. Roy C. Snodgrass, Amarillo, Tex., as president of the next convention, which was to meet at San Francisco, Calif., Sept. 27–30, 1948. The world convention, quinquennial except when war interferes, followed the international convention at Buffalo. (W. E. GA.)

**Displaced Persons:** *see* PRISONERS OF WAR; REFUGEES.
**District of Columbia:** *see* WASHINGTON, D.C.
**Divorce:** *see* MARRIAGE AND DIVORCE.

**Dodecanese.** A group of 14 inhabited islands in the Aegean sea. Area, 1,035 sq.mi.; pop. (Oct. 19, 1947, census), 115,913; pop. of the island of Rhodes, including the city of Rhodes (cap.), 22,121. Language: Greek (92%), Turkish (7%). Religion: mainly Greek Orthodox, but the Turkish minority is Moslem.

**History.**—The Italian peace treaty, signed in Paris on Feb. 10, 1947, stipulated (article 14) that Italy was to cede the Dodecanese to Greece. Sovereignty of the islands was transferred from British military administration to Greek control on Sept. 15 when the ratification instruments of the Italian peace treaty were exchanged in Paris.

Later, the Greek administration had some difficulty with the adjustment of wages and prices between the islands and the mother country. As the islands were not self-supporting, they were for the time being a financial burden on Greece to the sum of about £500,000 a year. (*See* also ITALIAN COLONIAL EMPIRE.) (K. SM.)

## Dog Racing.

Greyhound racing flourished in both the United States and Europe during 1947. England especially was affected by the betting craze, although the fuel shortage necessitated the limiting of races to week ends. Ninety tracks operated in England. Dog racing in the U.S. again was restricted chiefly to Florida and Massachusetts. A bill to legalize dog racing in New Hampshire was defeated, 226 to 105. (M. P. W.)

**Dog Shows:** *see* SHOWS, ANIMAL.
**Dominica:** *see* WINDWARD ISLANDS.

## Dominican Republic.

A West Indian republic occupying the eastern two-thirds of the island of Hispaniola or Haiti. Area: 19,129 sq.mi.; pop. (1946 est.) 2,059,113. Racial distribution is estimated to be 15% white, 15% Negro and 70% mestizo and mulatto. The capital is Ciudad Trujillo (formerly Santo Domingo) with a population (1946 official est.) of 131,271. Other urban centres (with 1945 or 1946 pop. ests.) are Santiago de los Caballeros (56,618), San Pedro de Macorís (23,267), San Felipe de Puerto Plata (15,610). Roman Catholicism is the predominant religion; the official language is Spanish. President in 1947: Gen. Rafael Leónidas Trujillo y Molina.

**History.**—Chief developments of 1947 centred around the opposition to the Trujillo regime, culminating in an abortive attempt to invade the republic from Cuba in late September. President Trujillo was named on March 22 as the candidate of the Dominican (or government) party for re-election. Two other candidates appeared, Rafael A. Espaillat (National Democratic party) and Francisco Pratts Ramírez (National Labour party), though neither was conceded any chance of election. The election was held May 16 and, as expected, resulted in an overwhelming sweep for the Dominican party, which won all senate seats and all but two in the chamber of deputies of the other parties getting one of the latter. Puerto sources on June 18 reported a government purge of p opponents. The Dominican embassy in Washington, charged on July 31 that three ships with 3,000 filibust cruited in Cuba, Guatemala, Venezuela and Puerto Ric sailed from Cuba to invade Dominican territory in an ef overthrow Trujillo.

President Trujillo was inaugurated for a new term, 19 on Aug. 16. Two days later he repeated charges that munists" planned an armed invasion from Cuba; he ask an international inquiry, though Cuban officials denied an activity. On Aug. 23 the Dominican government charge Guatemala and Venezuela were providing planes and mo aid anti-Dominican revolutionists gathering in Cuba; bo the other governments denied complicity. The Dominica ernment on Aug. 26 promised to recognize any new w hemisphere government which was "definitely anticommu The Cuban government announced on Sept. 29 that an revolutionary plot against the Dominican government had smashed, that Cuban army and navy units had captured 1,100 insurgents (including several North Americans), 11 ers and large amounts of arms and munitions on keys Nuevitas in Camagüey province, Cuban airfields and 2 L in Cuban waters. Leaders of the movement were announc Dr. Angel Morales, former League of Nations official and man of the "central committee of the Dominican revolu and Cuban Education Minister Dr. José Manuel Alemán. Dominican government on Nov. 18 demanded that Cuba "damages" for the plot. On Dec. 5 a mob ransacked the D ican consulate in Santiago, Cuba; the Dominican govern "identified" participants as members of the International munist brigade.

The Dominican government early in the year began cre of an army reserve of 50,000 men from 18 to 40, mostly from government employment. On May 17 the govern announced that from 5,000 to 10,000 Yugoslav refugees Italy would be admitted to colonize a new industrial area the Haitian border. The government completed contract the Columbus Memorial lighthouse at a cost of $5,000 construction was planned to be started Oct. 12.

NONSECRET BALLOTING in the Dominican elections at Ciudad Trujillo, May 16, 1947. Pres. Trujillo was returned to office by 93% of the voters

**Education and Religion.**—The 1947 budget allotment for educatio $2,307,759. Government statistics indicated a total of 2,484 school an enrolment of 229,417; there were 1,161 "emergency schools" a was planned to increase the number ultimately to 5,000. Illiteracy officially claimed to be less than 36%.

**Finance.**—The monetary unit is the peso, valued at par with the dollar. The 1947 budget estimated revenues at $40,224,620 (ge fund $29,683,770; special fund $9,941,850; municipal fund $599 and expenditures at $40,087,155.41 (general fund $29,546,305.41; cial fund $9,941,850; municipal fund $599,000), leaving a surpl $137,464.59. On the strength of the estimated surplus, President Tr recommended salary increases for all government employees. Gover receipts in 1946 were $47,971,435.00 as against budget estimates 22, 1945, of $26,831,960.66; expenditures for 1946 were $44,332,6 as against estimated expenditures of $26,866,714.87; the surplus 1946 was $3,638,743.83. Total bank deposits May 31, 1947, were 749,551. The construction program in force by June 1947 inv $6,033,826.34; it included sewage systems, waterworks, street rep government buildings and police barracks in various parts of the public. Constitutional amendments effective Jan. 10 established an pendent monetary board and a central bank authorized to issue Do can currency to replace U.S. currency which had long been legal ter the new currency, issued in October, was backed by $2,000,000 in me gold and $48,215,000 in U.S. dollar resources. The government on 19 discharged its remaining foreign debt by payment to U.S. bondho of $9,271,855.55, plus $1,102,625.70 on credit in New York city. left a remaining public debt of $8,053,797.23, consisting of an int loan of $6,423,743.90 and an Export-Import bank credit of $1,630,05

**Agriculture.**—Sugar production from Sept. 1, 1946, to June 30, was 458,446 metric tons. The leaf tobacco crop in 1946 was 28 metric tons (1945: 18,640 tons); the estimate of production in 1947 12,500 tons, but the quality, it was thought, would be poor. Milled production in 1946 was 52,423,457 kg. (1945: 62,467,337 kg.). estimate of cacao production in 1947 was 300,000 bags of 70 kg. Government appropriations for irrigation canals in 1947 were $1,395

**Trade and Communications.**—Exports for the first six months of were 515,407 metric tons valued at $55,555,246 (same period in 1

477,542 tons valued at $40,755,949); imports during the same period were valued at $20,621,983 (1946: $12,349,769). Total exports in 1946 were valued at $64,792,054 and imports at approximately $33,000,000. Great Britain was the republic's best customer in 1946, buying products valued at $26,978,956 (41% of total exports; crude sugar accounted for all but $66,351 of British purchases); other important 1946 customers ncluded the United States $11,998,083 (20% of total); Canada $5,883,750; the Netherlands $2,570,269; France $2,064,790; Spain $1,913,002; Netherlands West Indies $1,746,533. Principal exports by items in 1946 were sugar and other cane products $36,058,709; tobacco $8,795,260; coffee $5,419,975; cacao beans $4,450,712; corn $1,456,256; beans $896,214; bananas $875,689; pine lumber $781,599; copra $721,146; chocolate $718,467; fresh beef $502,908. Green coffee exports in the first four months of 1947 were 5,849,997 kg. valued at $2,602,864 (same period in 1946: 3,347,913 kg. valued at $1,011,355). Banana exports in the first six months of 1947 were 532,368 stems valued at $373,812. Cacao exports for the first six months of 1947 were 21,550,991 kg. valued at $8,806,171 (same period in 1946: 13,810,737 kg. valued at $2,178,251). Leaf tobacco exports in the first half of 1947 were 6,360,870 kg. valued at $1,861,730.

The government in 1947 undertook port construction and improvement projects at Puerto Plata on the north coast at a cost of about $1,000,000 and at San Pedro de Macorís at a cost of $4,593,150. The appropriation for road construction in 1947 was $1,089,668.

**Manufacturing.**—Tobacco processing in 1946 involved 32,000,000 cigars, 511,619,000 cigarettes and 1,455,725 kg. of andullos; for the first quarter of 1947 the manufacture was 7,990,280 cigars, 139,430,000 cigarettes and 408,265 kg. of andullos. Building permits in 1946 numbered 3,851 valued at $10,711,475.

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**Donaldson, Jesse M.** (1885– ), U.S. government official and postmaster general, was born on Aug. 17 in Shelbyville, Ill. Educated at Teachers Normal college, he gave up teaching in 1908 to become a mail carrier. By the time he was 30, Donaldson had become a postal inspector, serving for 17 years in this capacity at Kansas City, Mo.

During this period of his career, he became an expert in detecting mail swindlers.

In 1933 Donaldson became first assistant postmaster general, about as high a position as a "career" postal employee could hope to attain in view of the tradition that the postmaster generalship was generally awarded on a political basis. However, Pres. Harry S. Truman upset tradition on Nov. 25, 1947, by naming Donaldson to succeed the retiring Robert E. Hannegan as postmaster general. Great significance was attached to the Donaldson appointment insofar as some Washington political observers claimed to see in it a continuation of what they called President Truman's new policy of selecting cabinet members on the basis of public rather than political service.

**Donations and Bequests.** Total U.S. philanthropy in 1947 apparently receded somewhat from the record high levels set during World War II, according to the annual study of giving made by the John Price Jones corporation. Year-end estimates indicated that the level of $2,500,000,000 set in 1946 was probably not attained in 1947.

Many factors affected the total giving, but an important one appears to have been a probable decline in corporation contributions. While corporate gifts were allowable for war philanthropies, certain questions arose as to the legality of such gifts for some peacetime philanthropies. Another important factor was a decline in organized foreign relief. While cash contributions for such purposes apparently declined, gifts-in-kind increased considerably as facilities became available for sending food and clothing packages abroad. It was estimated that at least $250,000,000 worth of food packages were sent by individual citizens of the U.S. to relatives and friends in other countries during 1947.

The study of the John Price Jones corporation in eight large cities showed that during 1947 publicly announced gifts and bequests in these cities totalled $232,013,104 as compared with $275,853,339 in 1946. The cities studied were New York, Baltimore, Boston, Chicago, Los Angeles, Philadelphia, St. Louis and Washington, D.C. Of the totals, gifts accounted for $194,956,461 in 1947 and $249,445,290 in 1946; bequests were $37,056,643 in 1947 and $26,408,049 in 1946. Only one major classification—health—showed an increase in gifts during 1947—$33,994,965 in 1947 as compared with $19,652,327 in 1946.

Established annual campaigns during 1947 showed, in the main, exceptional success. The American Red Cross announced receipts of $75,322,700, or 125.54% of its 1947 goal. In December, 344 community chests reported they had raised $103,908,155 or 2.8% more than in the previous year. The National Foundation for Infantile Paralysis reported $17,987,800 raised in 1947, as compared with $15,982,150 in the preceding year. The American Cancer society reported $12,075,000 raised in 1947, as against $11,614,749 in 1946. (J. P. J.)

**Great Britain.**—Donations to the National Trust in 1947 included those of Buckland abbey, Devon, the home of Sir Francis Drake, by Capt. Arthur Rodd, and of the famous Knole house, Kent, by Lord Sackville; the oratory of All Souls, Burghclere, Hampshire, was also given to the trust for the preservation of its modern mural paintings by Stanley Spencer. Major General Sir Harold Wernher announced his intention of opening the mansion of Luton Hoo, Bedfordshire, as an art gallery, in memory of his only son who died in active service in World War II; pictures in the house included works by Romney, Holbein, Botticelli and Constable. Arthur Sims, New Zealand industrialist, was the donor of a commonwealth travelling professorship in medicine, to which Sir Hugh Cairns, Nuffield professor of surgery at Oxford university, was first appointed. The Nuffield foundation offered £50,000 to Oxford for the founding of a haematological research unit. The Castle Eden vase, the finest glass vase of Anglo-Saxon workmanship, was presented to the British museum.

Two thousand acres of the Brockhampton park estate in Hertfordshire were bequeathed to the National Trust by Col. John Talbot Lutley, and Histon court in Somerset was bequeathed by Hilda Proctor Wills. The painter Sir Cuthbert Cartwright Grundy left his house at Blackpool to serve as a home art museum. Dr. Thomas Watts Eden left £10,000 to the Royal College of Obstetricians and Gynaecologists for the establishment of an Eden travelling fellowship, and £10,000 to the Royal College of Physicians for the same purpose. (*See* also COMMUNITY CHEST; SOCIETIES AND ASSOCIATIONS.)

**Douglas, Lewis Williams** (1894– ), U.S. businessman and diplomat, was born on July 2 at Bisbee, Ariz., and was graduated from Amherst college, Amherst, Mass., in 1916 with a B.A. degree. In 1917 Douglas abandoned his postgraduate studies at the Massachusetts Institute of Technology, Cambridge, Mass., to join the army and went overseas as 1st lieutenant in a field artillery outfit.

After the armistice, he taught history at Amherst until 1921 when he returned to Arizona and entered politics. In 1926 he was elected to the federal house of representatives and was twice re-elected. In 1933 Douglas left congress to become budget director in Franklin D. Roosevelt's government; but denouncing the New Deal's "unsound spending" policies, he resigned on Aug. 31, 1934. He supported Alfred M. Landon in 1936 and Wendell L. Willkie in 1940.

He was vice-president of the American Cyanamid Co. (1934–38), principal and vice-chancellor of McGill university at Montreal, Can. (1938–39) and president of the Mutual Life Insurance Co. (1940). Roosevelt and Douglas buried their differences in 1941, and the latter returned to the government as deputy administrator of the War Shipping administration. After the nazi surrender, he went to Germany to help establish the initial policies for governing the U.S. zone of occupation.

Then, on Feb. 26, 1947, President Harry S. Truman appointed Douglas as ambassador to Great Britain. In England, he made several important speeches supporting the Truman doctrine and the Marshall plan and stressed Anglo-U.S. community of interests.

**Draft:** *see* Selective Service.
**Drama:** *see* Radio; Theatre.
**Dress:** *see* Fashion and Dress.
**Drought:** *see* Meteorology.

**Drug Administration, U.S.** Worthless therapeutic devices and the laboratory and manufacturing controls in drug plants received major regulatory attention in 1947 from the Food and Drug administration, operating under the Federal Security agency.

Many of the devices seized were assembled from surplus electrical parts manufactured for war use; they were designed to create a scientific impression upon gullible purchasers. Labelled with blatant claims for the cure of many serious diseases, they were found by experts to be incapable of curing any but imaginary ailments. Usually the machines were harmless in themselves, but they caused irreparable damage to persons who turned to them for treatment of the type of diseases that require immediate competent diagnosis and rational medical treatment. The highest fine of the year, coupled with a suspended jail sentence, was imposed upon the promoter of a coloured-light machine that had been used for the treatment of diabetes, cancer and other critical diseases, with tragic consequences.

Persistent sellers of misbranded nostrums continued to misrepresent their compounds through the subterfuge of oral sales talks or collateral literature. The products were often shipped with meaningless statements on the labels, in a mistaken belief that the terms of the law could thus be circumvented. Actions were continued against products promoted by false claims in circulars that were eventually brought together with the medicine, and against products sold for diseases for which no directions were given in the labelling.

A number of reports of manufacturing errors or label mixups in pharmaceutical plants were received in 1947. In most cases manufacturers took prompt and effective steps to recall all outstanding lots, but in some instances the recall was superficial in coverage and the manufacturers failed to disclose to consignees the dangerous nature of the products until they were required to do so. In each case, the Food and Drug administration checked upon the effectiveness of recalls and the safe disposition of the returned goods, and, when necessary, conducted a thorough roundup with the assistance of state and local enforcement agencies. In 1947 seizures of drugs for violation of official or professed standards continued to decrease in number. For all types of violations, 194 drugs and devices were seized and 108 criminal prosecution and 3 injunction cases were instituted in the federal courts. New-drug applications made effective in the fiscal year numbered 145.

By amendment to the Food, Drug, and Cosmetic act, streptomycin was added in 1947 to the groups of drugs requiring predistribution certification by the Food and Drug administration. Certified during the year were 447 batches of streptomycin, 7,327 batches of penicillin and 261 of insulin and insulin-containing drugs. (*See* also Narcotics and Narcotic Traffic.)

(P. B. D.)

**Drugs:** *see* Agricultural Research Administration; Alimentary System, Disorders of; Allergy; Anaesthesiology; Bacteriology; Biochemistry; Botany; Chemistry; Ch therapy; Chemurgy; Dentistry; Dermatology; Drug ministration, U.S.; Endocrinology; Entomology; Eye, eases of; Gynaecology and Obstetrics; Medicine; Na ics and Narcotic Traffic; Physiology; Public He Services; Surgery; Urology; Veterinary Medicine; mins. *See* also articles on specific diseases, such as Anae Diabetes; Leprosy, etc.

**Drug Traffic:** *see* Narcotics and Narcotic Traffic.
**Drunkenness:** *see* Intoxication, Alcoholic.

**Duke University.** A privately endowed institution at ham, N.C., founded by James B. D in 1924. It includes Trinity college for men, which goes ba its origin to 1838, the woman's college, the college of engi ing, the graduate school of arts and sciences, the school divinity, law, medicine, dietetics, nursing and forestry, and summer session. By the beginning of the academic year 194 all military organizations except the naval reserve officers t ing corps had left the campus, and the return to the normal semester year was made. It was deemed wise not to accep enrolment larger than could be well taught and housed and w more students were enrolled than ever before, sections in all jects were kept to reasonable size by increases in the teac staff.

Careful study of the various curricula leading to gradua and preparatory to advanced graduate study or professi training was continued in the effort to aid students bette understand and meet the increasing changes, social and polit in the U.S. and the rest of the world.

The large building, begun in 1946, to accommodate the col of engineering was completed and was being fully equipped occupancy early in 1948. A large additional physics building begun in 1947. To provide needed additional library faciliti large addition to the main university library was begun in vember. A building properly equipped for various kinds medical research was completed in October. (For statistic endowment, enrolment, faculty, library volumes, etc., *see* U versities and Colleges.)

(R. L. Fs

**Dulles, John Foster** (1888–      ), U.S. government ficial, lawyer and church laym was born on Feb. 25 in Washington, D.C. He was gradu from Princeton university, Princeton, N.J., in 1908, took law degree at George Washington university, Washington, D three years later and started the practice of law. Dulles ser in World War I as a major attached to the general staff later was the principal counsel for the U.S. delegation at Paris peace conference. He thereafter became a successful W street lawyer, an authority on international law and a promin lay member in the Federal Council of the Churches of Ch in America. In the critical years preceding U.S. entry into Wo War II, he was a noninterventionist; after Pearl Harbor swung around to the other extreme, and following his appoi ment April 5, 1945, as an adviser to the U.S. delegation to United Nations, he urged the senate to ratify the U.N. char After the war, he was regarded as the Republican party's ex on foreign policy, and he accompanied both James F. Byr and George C. Marshall to important diplomatic conferences the role of adviser. In July 1947 he was appointed U.S. deleg on the U.N. general assembly.

An ardent supporter of the Truman doctrine and Marsh plan, Dulles also advocated a western bloc of European nati to restrain what he called the soviet policy of expansionis Andrei Y. Vishinsky, in his celebrated speech on Sept. 18, 19 labelled Dulles as one of the principal U.S. "warmongers."

**utch Possessions:** *see* CURAÇAO; NETHERLANDS INDIES; URINAM.

**utra, Eurico Gaspar** (1885– ), Brazilian statesman and army officer, was born May 18 Cuiabá, Brazil. He joined the army in 1902, and after study-g at the Brazilian Military school in Rio de Janeiro (1904–08) e was commissioned in 1910 as a second lieutenant. Dutra be-ame one of the leaders of the Brazilian officers clique and par-cipated in the coup d'état that put Getulio Vargas in the presi-ency in 1932. Dutra helped to crush the anti-Vargas revolt aged by Paulistas and in 1936 he was appointed minister of ar. Upon relinquishing the presidency in Oct. 1945, Vargas apported Dutra's candidacy as his successor. Elected Dec. 2, utra was inaugurated Jan. 31, 1946.

In 1946 and 1947, Dutra took drastic measures to check the owth of communism in Brazil. (Some 800,000 Brazilians oted for communist candidates in the Jan. 1947 provincial ections.) He ousted Brazilian communists from government osts, suspended communist newspapers and youth organizations id shut down the Brazilian Workers confederation and its af-iates for six months. On Sept. 1, Dutra greeted President arry S. Truman who arrived in Rio de Janeiro to attend the ter-American conference.

**yestuffs.** The pent-up demand for colour by consuming industries which originated during the years of 'orld War II had been largely responsible for an all-time rec-d in 1946 for the production of dyes. Preliminary figures for 47 indicated that this record was surpassed. Temporary short-ges of certain coal-tar intermediates and inorganic chemicals isted but were not serious enough to hinder production gen-ally. The U.S. dye industry, operating at the peak of its pro-ictive capacity, still was unable to satisfy the domestic and port requirements for colour. Producers had always been tive in the export field, and during the war the United States overnment permitted export of allotted quantities of dyes to iendly nations. After the cessation of hostilities concentrated forts were directed toward establishment of a stronger posi-on in foreign markets, and increasing quantities of both high-iced and tonnage colours were being sold to other countries.

Despite higher costs, principally in raw materials and labour, ices of dyes remained fairly constant until the latter part of 47, when increases ranging from 6% to 10% on certain col-urs went into effect. These were still below the market index iown for other commodities.

Research was continued in developing new and improving olours, and many dyes with superior fastness and simplified iaracteristics of application were placed on the market. Study dyeing and application techniques resulted in numerous im-rovements in processing methods; fast vat colours were applied iore economically than formerly in high-speed equipment by ontinuous methods, and their utilization in a wide variety of bres and constructions continued to increase.

According to official figures prepared by the United States iriff commission, the production of all types of U.S. dyes in 946 amounted to 186,307,000 lb.—41,000,000 lb. or 28% above ie total reported in 1945 and 18,000,000 above the former ecord high reached in 1941. Sales of all dyes in 1946 were 84,855,000 lb., valued at $120,289,000, compared with 138,-48,000 lb., valued at $103,489,000, in 1945. The unit value f all dyes sold amounted to $0.65 per lb. compared with $0.75 1945. The class of vat colours still remained the most im-ortant from the standpoint of both production and sales, and 1946 accounted for 29% of the total quantity produced; irect dyes accounted for 21%, sulphur dyes for 16% and acid dyes for 12%. Production of azoic dyes and their components increased 59% to 8,000,000 lb. in 1946 from 5,000,000 lb. in 1945; sales totalled 7,000,000 lb., valued at $10,000,000. Production of direct dyes increased 9,966,000 lb. to 39,301,000 lb., acid colours increased 4,646,000 lb. to 23,208,000 lb., and sulphur colours 12,617,000 lb. to a total of 29,926,000 lb. Sales of vat dyes other than indigo were valued at $30,069,000, direct dyes at $24,613,000, acid dyes at $17,579,000 and sulphur colours at $7,466,000.

Of the colours produced in large quantities, sulphur black increased 72% in output to 20,075,000 lb., synthetic indigo increased 67% over 1945 and direct black 28%. A good portion of these cheaper tonnage colours was absorbed by export markets. Production of many other less important colours was two or three times higher than in 1945. Figures for 1947 production and sales were not yet available at the end of that year.

(A. G. BR.)

**Ear, Nose and Throat, Diseases of.** **Use of Penicillin in Acute Sore Throat.**—Selvan Davison discussed the bacteriology of acute tonsillitis and pharyngitis, reviewing briefly the effects of sulfonamide preparations, but emphasizing the greater efficacy of penicillin. He outlined the method of therapy in a group of 28 cases: 20,000 units were given every 3 hr., day and night; the average dose of penicillin in these cases of acute sore throat was 360,000 units, during 54 hr. There was only one relapse, in which recovery occurred without further penicillin treatment. One patient's condition did not respond until sulfadiazine replaced penicillin in the treatment. No complications occurred either during or after the treatment. A short but intensive course of penicillin would hence seem to be effective against acute sore throat.

**Vertigo.**—Vertigo may be a symptom of some toxic disorder. Its occurrence in septic patients, after the administration of certain drugs and of the antibiotic streptomycin, is considerable proof of this assumption.

Vertigo may be the result of a nervous depression. The diagnosis is not difficult, although a therapeutic response is not always obtainable. The otologist must be careful not to say or do something that will fix the patient's symptoms upon some specific cause. The sedative dilantin seemed to benefit some of these patients.

Vertigo is occasionally a symptom of high blood pressure. The prospect of relieving the patient of this troublesome condition is favourable if surgical measures result in a substantial reduction in blood pressure.

Organic lesions of the central nervous system may produce vertigo, but they are usually associated conspicuously with other clinical signs of intracranial disease. The classical example is the tumour between the cerebellum and the pons at the back of the brain.

There are instances when vertigo is the result of an end organ lesion in the acoustic nerve. The vertigo derived from this source, as for example that of Ménière's disease, is so specifically characteristic as not to be confused with any other type. Also, if a patient suffers with a violent paroxysmal vertiginous attack—one that fells him in his tracks—he probably has an end organ lesion, not an intracranial disease.

**Treatment of Hay Fever Patients by Chilling.**—L. C. Lazarowitz slowed up the rapid absorption of aqueous ragweed extracts in 30 patients by chilling the mid-outer part of the arm with an ice bag for 15 min. before and 15 min. after the subcutaneous injection. The chilling made it possible to give larger doses further apart so that the patient made 40% less visits to the allergist. General constitutional reactions occurred very seldom and no delayed reactions were observed. There was a greater degree of improvement in these individuals because of the ability to reach higher dosages at an earlier date. He also found that the chilling of the area made the injection painless.

**Headache.**—A review of 1,000 cases of headache revealed that the commonest causes in the order of frequency were: allergic reaction of the nasal mucous membrane, inflammation of the muscles in the neck; mechanical nasal obstruction, inflammation of the sinuses and neuropsychiatric disorders. Less frequent causes were the vascular headaches, pharyngeal, dental and cervical spine disorders.

Vasomotor rhinitis was diagnosed 552 times but could be designated as the prime cause of headache in only 282 instances. Myositis cervicalis was found 630 times and was regarded as the prime cause in 241 instances.

The importance of recognizing muscle inflammations and the vicious cycle of headaches for which they may be responsible was pointed out. It was indicated that this cycle may be responsible for the continuation of a headache long after the prime cause has been corrected. It was concluded that the patient with a headache must be studied in a systematic manner which will evaluate all the factors that may either directly cause, increase or prolong the ache. Researches resulted in clearer concepts of the mechanics of the vacuum headache, spastic muscular headache, vascular cephalgia and psychosomatic headache.

Evaluation of the possible causative factors permits the planning of effective schemes of treatment.

**Other Treatments.**—A new treatment for troublesome infections of the ear was put forward by Merrill B. Hayes and C. Fremont Hall. Dalyde or dibromsalicylaldehyde in solution (2%), ointment or powder was put into the external canal, after careful cleansing and drying. Minute bacteriologic studies revealed that the *Bacillus pyocyaneus* is often the instigator. Most of the cases cleared up within a few days or several weeks, and very little relapse was encountered.

The penicillin spray, hand-operated, in respiratory infections was highly recommended by Samuel Morse. He spoke of the absorptive properties of the lung, directing attention to the fact that its inner surface has an area 500 times as great as the body surface. Drugs given as aerosols are absorbed so rapidly that their effect is similar to that of intravenous injection. In general the author used, over a period of 24 hr., spraying every 4 hr., the following amounts: 100,000 units in the severe pneumonias; 60,000 units for severe sinusitis and only 40,000 units for moderate sinusitis and laryngitis.

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**Earnings, Company:** *see* BUSINESS REVIEW.
**Earthquakes:** *see* DISASTERS; SEISMOLOGY.
**East Africa, British:** *see* BRITISH EAST AFRICA.

## Eastern Orthodox Churches.

The Russian Orthodox Church made substantial progress in re-opening its churches, re-organizing its dioceses and, in general, building up its hierarchical structure. The Church of the Kingdom of Greece continued under the impulse of a patriotic emergency to recover from the discord caused by the deposition of Archbishop Chrysanthos in 1941. In the Levant the Orthodox Church showed new vigour, well illustrated in the *Mouvement de jeunesse orthodoxe* which had expanded in Syria under the guidance of the patriarch of Antioch.

At the same time, the Orthodox Church as a whole s
more and more from an embroilment in the political di
of the world. On the one hand the ecumenical patriarcha
associated itself, in effect if not through any political
with the canonical defense of those Slavonic Orthodox me
who, in exile, were desirous of retaining their independe
the Soviet Union, for instance by confirming the Metro
Vladimir as exarch for Russian parishes in western Euro
the other hand, the patriarchate of Moscow was energe
extending its influence and, indeed, as in Czechoslovak
jurisdiction, outside Russia. The consequences of thes
conflicting tendencies were many and unhappy. The Pat
Alexei of Moscow announced in the spring his intention o
ing a conference of all Orthodox churches which should m
Moscow at the end of September; he postponed it unt
summer of 1948 when the ecumenical Patriarch Maximos
cated, in a friendly but firm reply, that it was for him al
summon a conference of this nature. The patriarchs of A
and Alexandria had already declined the invitation to M
as had most Orthodox hierarchs outside the soviet sphe
political influence, and even some within it, such as the S
patriarch and the Finnish metropolitan, and it seemed
when the conference met it would have an excessively sec
and political complexion. Other political considerations ar
Cyprus, where an election was made in June to the archbi
ric, vacant from 1933 in consequence of certain governm
acts incompatible with canon law, such as the requirement
there must be a government scrutiny of the election and
candidates must necessarily be Cypriots by birth. The m
politan of Paphos, Leondios, was elected, and accepte
throne with much reluctance at the instance of the repres
tive of the ecumenical see, only to die a fortnight later. I
further election, in October, Bishop Makarios of Kyreni
successful; he belonged to the opposite school. In other w
what was called "the Left" gained a victory in the summe
Leondios, although he declined the invitation to the proj
Moscow conference, was the opponent of the British co
government and the advocate of the union of Cyprus
Greece; but what was called "the Right" prevailed in Oct
(M. D

**East Indies, Dutch:** *see* NETHERLANDS INDIES.
**Eclipses of the Sun and Moon, 1948:** *see* CALENDAR,
(page xxii).
**Economic Association, American:** *see* SOCIETIES
ASSOCIATIONS.
**Economic Development, Committee for:** *see* COM
TEE FOR ECONOMIC DEVELOPMENT.

## Economics.

The questions receiving most attention
professional U.S. economists as well as
business and governmental economic administrators were
following, all posed and answered with the fact that 1947
a pre-election year: how could high production rates be m
tained? How could the technological, transportation and
eign trade bottlenecks responsible for the more spectac
price rises be eliminated? How should industrial and la
monopolies be dealt with? When would inflation and high
ployment break up in recession? How could the "surplus"
slightly anti-inflationary federal fiscal policy be maintaine
the face of the urgent demand for lower taxes? What were
inflationary, budgetary and long-run European productivity
plications of the Marshall plan? Was the Taft-Hartley act
stitutional and workable, and would it, in combination with
Wagner act, provide an adequate basis in law for effective
lic policing of the employer-employee relationship over

long run?

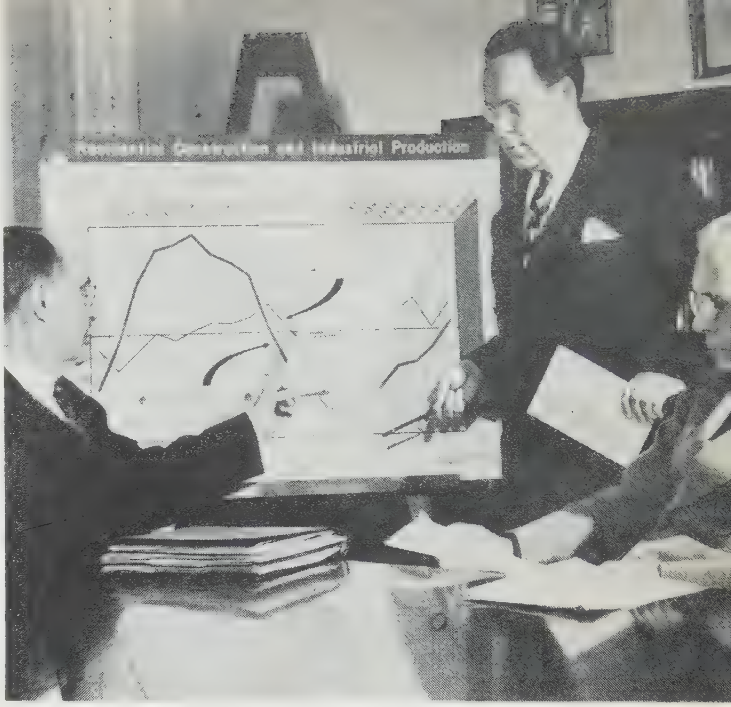
A survey of the more important economic journals indicated, however, a continuing lively concern with abstract theory. A controversy developed during the year over the general adequacy of the marginal analysis in price and distributive analysis. Interest in imperfect competition, monopoly, oligopoly, etc., as well as in the Keynsian economics was sufficiently great that the program of the American Economic association convention held in Chicago in December was organized largely about the theoretical and policy implications of these two systems of analysis. Considerable attention was also directed in these meetings toward the basic laws of production. The members of the association appeared, however, to be most keenly interested in such questions as the high cost of food, aid to Europe and the Taft-Hartley act. American economists in 1947 had a "problem" orientation.

The president's council of advisers set up under the Full Employment act continued to stress the necessity of halting expansion of the money supply. The annual report dealt with generalities, however, and apparently attested both to the difficulties of getting the definitive type of prediction contemplated in the act, as well as to the inescapable influence of approaching presidential elections on such bodies. The National Bureau of Economic Research published a number of technical and research reports, including a study entitled *Business Finance and Banking*. The Committee for Economic Development in its various publications stressed the importance of entrepreneurial innovation with special reference to the problems of small business. The chief publications of the Brookings institution were *Aluminum Cartel* and *A National Labor Policy*. The Federal Reserve board studies were concerned with such subjects as the money market and rates, consumer credit, small business, department store sales, bank debt holdings and individual and business holdings of liquid assets.

Histories of various economically oriented war agencies and boards began to flow into print in greater volume during 1947. The war experiences of specific industries were set forth both in governmental reports and in industrially sponsored publications. (G. J. C.)

**Ecuador.** A west-coast republic of South America, astride the equator, for which it is named. It is bounded on the north, east and south, and west, respectively, by Colombia, Peru and the Pacific ocean. Area, 104,510 sq.mi. (including the Galápagos Islands, a Pacific dependency, 3,029 sq.mi.); pop. (1946 est.) 3,340,000. Racial distribution is estimated at 60% or more pure Indian, 25% to 30% mestizo, and at most 15% white. The capital is Quito (est. pop., 211,000); other important cities (with pop. ests.) are Guayaquil, the chief port (172,948); Cuenca (52,519); Riobamba (27,459); Jipijapa (22,097); Vinces (21,860); Chone (21,834); Ambato (21,692); Loja (20,776) and Latacunga (20,357). Roman Catholicism is the predominant religion. Presidents in 1947: Dr. José María Velasco Ibarra, to Aug. 23; Col. Carlos Mancheno, Aug. 23–Sept. 2; Mariano Suárez Veintimilla, Sept. 2–Sept. 17; Carlos Julio Arosemena, from Sept. 17.

**History.**—The last day of 1946 saw Ecuador's 16th constitution, and its second within less than two years, effected. The new basic law set up a unitary government headed by a president elected by direct, popular vote for a four-year term and ineligible for immediate re-election; a vice-president, who regularly presides over the senate, is also elected. The executive branch is also served by presidentially appointed ministers of state. Congress is bicameral, including a senate and a chamber of deputies. The senate is composed basically of two senators from each province, plus certain "functional senators," all of whom serve four years. Deputies are elected on a population basis for two-year terms. The judiciary is headed by a supreme court of justice.



PRESIDENT TRUMAN'S three-man council of economic advisers, headed by Edwin G. Nourse (right), and including John D. Clark (left) and Leon H. Keyserling, was commissioned in June 1947 to study the effect on domestic economy of U.S. foreign aid under the Marshall plan

The national assembly on Jan. 12, 1947, elected Mariano Suárez Veintimilla, a Conservative, as vice-president under the new constitution. On Feb. 9 the government arrested Capt. Luis Cerón and 16 others for alleged revolutionary plotting. Four days later the national assembly recommended dissolution of the Ecuadorian Labour federation. Dr. Humberto Albornoz resigned on Feb. 24 as leader of the Liberal Radical party. The government announced on March 14 that it had suppressed a military coup by Gen. Alberto Enríquez Gallo. On Aug. 23, Col. Carlos Mancheno, who had only recently been appointed defense minister, seized control of the government in a bloodless coup which forced the retirement of Pres. Velasco Ibarra. The crisis was precipitated when Velasco tried to oust Mancheno from his cabinet post. Mancheno on Aug. 24 proclaimed himself "president and chief of government" and Velasco fled by plane to Cali, Colombia. Mancheno on Aug. 27 reorganized the cabinet with four new appointments, although he retained Velasco's foreign minister, who at the time was heading the Ecuadorian delegation to the hemisphere defense conference at Rio de Janeiro; this retention was in order to preserve Ecuador's standing in that conference, but that body ultimately excluded Ecuadorian delegates from voting and they thereupon withdrew. Mancheno on Aug. 28 declared the constitution of Dec. 31, 1946, abolished and that of 1906 restored provisionally. At the same time he warned Vice-President Suárez Veintimilla, who had proclaimed himself president as the constitutional successor to Velasco, against creating unrest.

Quickly gathering opposition to Mancheno, both within and without the army, flared into open revolt on Aug. 30 in Riobamba and elsewhere, spread to Guayaquil and other cities, and brought about the downfall of the Mancheno regime on Sept. 2. The countermovement was led by Col. Angel Baquero Dávila. Mancheno resigned and fled the country. Suárez proclaimed himself acting president, with Baquero as defense minister, but in Guayaquil Maj. Sergio Enrique Girón announced the creation of an eight-man "junta of national concentration" and claimed that it represented the insurgents who overthrew Mancheno; both regimes agreed in rejecting any return by Velasco.

The council of state, acting independently, also barred a return by Velasco but, following prescriptions of the 1946 constitution (which it proclaimed restored), called a session of congress for Sept. 15 to name a new president. The Suárez government announced on Sept. 5 that Girón had accepted its leadership. Congress on Sept. 16 elected Carlos Julio Arosemena as vice-president to serve as president until Sept. 1, 1948; he assumed the presidency the following day and José Rafael Bustamante, a Liberal leader, became vice-president. The army announced on Nov. 9 that a revolt at Quito had been crushed.

**Education.**—A governmental decree on Aug. 9 created a national council of education, composed of the chief of the technical department of the ministry of education and one representative each of primary, secondary, higher and private education.

**Finance.**—The monetary unit is the sucre, valued at 7.41 cents, official rate (Oct. 31, 1947), or 5.56 cents, free rate (Sept. 30, 1947), U.S. currency. Congressional investigators reported on March 10 that $1,860,000 was missing from public funds. It was reported on July 15 that currency circulation and living costs had increased 500% from 1939. Later in the year it was reported that the Export-Import Bank of Washington would loan the municipalities of Quito and Guayaquil each $4,000,000 for construction of modern water systems.

**Trade.**—Total exports in 1946 were valued at $39,787,000 (1945: $27,992,000), of which the chief items were crude petroleum and gasoline, copper, rice, cacao, hats and coffee. The principal customers in 1946 were the U.S. ($13,607,000) and Cuba ($5,621,000). Imports in the same year totalled $30,686,000 (1945: $23,965,000). The chief suppliers were the U.S. ($17,795,000), Argentina ($2,447,000) and Great Britain ($2,103,000). Exports of cinchona bark (the natural source of quinine) dropped 97% by volume and 93% by value in 1946 from 1945; the volume in 1946 was 28,436 kg. (1945: 827,886 kg.) and the value was 218,709 sucres (1945: 2,847,831 sucres). Balsa wood exports also dropped greatly in 1946 from 1945; the respective figures were 2,778,228 kg. valued at 7,125,099 sucres and 7,354,387 kg. valued at 18,509,184 sucres; 93% of 1946 exports went to the U.S. Rice exports in 1946 were 67,099,907 kg. (1945: 29,318,378 kg.). Crude oil exports in 1946 were 1,229,839 bbl., including 936,166 bbl. to Uruguay and 293,672 bbl. to Argentina. Coffee exports in 1946 were 7,635,607 kg. valued at 34,839,189 sucres (1945: 10,736,688 kg. valued at 33,862,637 sucres); of the 1946 exports the U.S. took 3,407,356 kg. valued at 16,698,052 sucres and Cuba 2,628,130 kg. valued at 10,734,024 sucres. Cocoa exports for the first eight months of 1947 were 14,226,471 kg. (same period in 1946: 12,695,753 kg.), of which the U.S. took 9,842,837 kg. (69%) and Colombia 1,318,765 kg. (9%). Rice exports for the first six months of 1947 were 10,014,885 kg. (same period in 1946: 11,663,774 kg.). Coffee exports for the first five months of 1947 were 1,465,980 kg. valued at $629,752 (same period in 1946: 3,420,596 kg. valued at $1,012,541). Banana exports for the first five months of 1947 were 890,196 stems (same period in 1946: 345,912 stems). Toquila hat exports in the first three months of 1947 were 983,490 units (same period in 1946: 843,432), of which the U.S. took 801,364. Kapok exports in the first three months of 1947 were 157,156 kg. (same period in 1946: 138,295 kg.). Crude rubber exports in the first three months of 1947 were 69,533 kg. valued at 905,107 sucres (entire 1946: 1,326,862 kg. valued at 15,111,035 sucres).

**Production.**—Production of sugar in 1946 was 32,890 metric tons but was expected to increase in 1947. The rice estimate for 1947 was about 2,200,000 Spanish quintals of 110.23 lb. (1946: 2,218,442 quintals). Estimate of the 1947 coffee crop was 300,000 quintals. Rubber production in 1947 was estimated at about 1,000 metric tons. Crude oil produced in 1946 totalled 2,322,000 bbl. (1945: 2,624,000 bbl.); refined petroleum products in 1946 amounted to 1,076,498 bbl., and included 277,337 bbl. of motor fuel, 76,935 bbl. of kerosene, 120,216 bbl. of distillates and diesel oil and 573,177 bbl. of fuel oil.

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**Edinburgh, Prince Philip,** DUKE OF (1921–     ), the only son of Prince Andrew of Greece (d. 1944) and Princess Alice of Battenberg, was born on Corfu Island, June 10, but at an early age went to live in England, where he was brought up by his uncle, Lord Louis Mountbatten (now Earl Mountbatten of Burma, *q.v.*), and educated at Cheam school, Surrey, and Gordenstoun, Scotland. At 18 he entered the royal naval college, Dartmouth, and in 1940 served on H.M.S. "Ramillies." He subsequently served on H.M.S. "Shropshire," and on H.M.S. "Valiant" during the battle of Matapan. His later war service took him to the Pacific, and he was present at the Japanese surrender in Tokyo bay. After the war he served as an instructor at the shore establishment at Corsham, Wiltshire.

On March 18, 1947, his naturalization as a British subject was announced, and he became known as Lieutenant Philip Mountbatten. His betrothal to Princess Elizabeth, the heiress-presumptive to the British throne, was announced on July 9. O eve of his marriage to the Princess Elizabeth, which solemnized in Westminster abbey, London, on Nov. 20, the conferred upon him the honour of Knighthood and investe with the Order of the Garter, created him duke of Edinb earl of Merioneth and Baron Greenwich, of Greenwich i county of London, and at the same time authorized him t the title his royal highness.

**Education.** The outstanding developments in 1947 in United States were (1) the steps to bette economic status of the teacher; (2) increases in enrolme the elementary schools and colleges; (3) greater interest participation in international educational co-operation, cially in the United Nations Educational, Scientific and Cul organization, U.N.E.S.C.O.; (4) the attempts to get fe aid for education; and (5) the growing controversy on the of religion in public education.

In September, the U.S. office of education estimated that total scholastic enrolment would reach 32,100,000, with r than 1,000,000 veterans in attendance. The over-all registra in the elementary school was expected to attain 22,620, with 2,450,000 children in the first grade. The latter figure increase of 200,000 over that of 1946, was generally attrib to the high birth rate during the early part of World Wa High-school registration was predicted to be 6,330,000, 25,000 more than in 1946. This small gain was ascribed to low prewar birth rate. The cost of education below the col level for 1947–48 was estimated at $4,800,000,000, about $3 000,000 above that of the preceding year.

The actual fall enrolment in 1,753 collegiate institutions 2,338,226, 12.5% higher than in 1946, according to figures c piled in November by the office of education. To observers Pres. Raymond Walters of the University of Cincinnati it peared that the veteran attendance of 1,149,993 represente peak, or a plateau at least. Proof was found in the slowing of veteran registration in comparison with nonveteran incre and in the decided decrease in the number of veterans ente as freshmen (*School and Society*, Dec. 27, 1947). (*See* VETERANS' ADMINISTRATION.)

**The Teacher Crisis.**—The teachers' strikes for better sala were carried over into 1947. The first major strike occurre February in Buffalo, N.Y., the nation's 14th largest city. aftermath of this strike, which was ended by a comprom was the passing of a law by the New York state legislature hibiting strikes by teachers and civil servants. Similar l were enacted by Ohio, Pennsylvania and Texas.

The teacher's financial status was so effectively publicize the newspapers and in other media of communication that p lic opinion was created in behalf of salary increases and o improvements. One of the outstanding factors in directing tention to the teacher situation was the series of 12 article the *New York Times*, Feb. 10–21, 1947, by Benjamin Fine which the following facts were revealed: since 1940, ab 350,000 have left the profession; 1 teacher out of 7 posse an emergency or substandard certificate; there are 70,000 tea ing vacancies; the annual teacher turnover, now 20%, is dou that of prewar days; the average salary of teachers is $37 week, with 200,000 paid less than $25 weekly; more than of the U.S. teachers are not protected by tenure rights; en ments in teachers' colleges are far below those in other colle These articles were reprinted in a brochure, "The Crisis in Am ican Education," and later expanded into a book, *Our Child Are Cheated.*

The various state legislatures began voting pay increases early as January. By the end of June, at least three-fourths e legislatures had appropriated emergency funds toward rais-g minimum salaries or granting cost-of-living bonuses. The *ew York Times* estimated on Dec. 30, that the average teach-'s salary for 1947–48 would exceed that of the previous year $400. On the other hand, as Prof. Harold F. Clark, Teachers llege, Columbia university, pointed out, teachers were not as ell off as previously, since the cost of living rose about as uch and only few communities took the higher living costs to account when raising salaries. Prof. Clark warned that blic interest would be difficult to arouse in behalf of addi-onal salary increases.

Another trend in the teacher crisis was the growing senti-ent to adopt a single salary schedule for elementary and high hool teachers. The American Conference of Teacher Examin-s expressed unanimous satisfaction in October "at the in-easing number of single-salary schedules being adopted roughout the United States" and predicted that they "will do uch to alleviate the teacher shortages in the elementary field d will encourage more competent candidates to prepare for aching in the elementary school."

There were other improvements in teachers' conditions of rvice throughout 1947: more than half of the states enacted w or liberalized retirement plans; Maryland and Arkansas duced class loads to 30; Illinois and Virginia eliminated marage as a cause for dismissing a woman teacher; South Caro-a provided legal redress for teachers in cases of salary dis-imination; Connecticut legislated against racial and religious as in the employment of teachers. Among the other reforms ere better provisions for sick leave, tenure protection and the scontinuance by some towns of restrictions on the teachers' rivate lives. All in all, however, the situation was still unsatis-ctory. The Citizens Federal Committee on Education, a oup formed under the auspices of the office of education, re-orted in October that "the conditions under which teachers ork and live still leave much to be desired" in many parts of e country and that "many communities do not let their achers live like normal human beings."

Despite the gain in the number of teachers during 1947, there as no letup in the critical teacher shortage. Estimates of the tio of teachers employed on emergency substandard certifi-ates to qualified teachers varied at the end of the year from 1:9 1:8. In Wisconsin, the ratio was 1:5, according to a report y the Wisconsin Educational association. Little encouragement ame from teacher-education institutions, which reported only n 8.1% increase over the 1946 registration, whereas the aver-ge increase for colleges and other higher institutions was 12.5%, ith a range from 12.0% to 26.0%.

Surveying the rapidly rising elementary-school enrolments, rofessors Harl R. Douglass and Lloyd H. Elliott inquired in *chool and Society* (Society for the Advancement of Education, nc., Nov. 15, 1947): "The $64-question is—where are the eachers coming from?"

During April and May, the Commission on Teacher Educa-on and Professional Standards of the National Education asso-iation launched an intensive campaign to urge outstanding oung people to enter the teaching profession, to eliminate un-ualified teachers and to secure the best conditions necessary to ttract and hold the most qualified teachers. A group of 300 epresentative school leaders, constituting the National Con-erence for the Improvement of Teachers, issued in July a Bill of Rights" with a program calling for a 40-hour week, a aximum class load of 25, a minimum annual salary of $2,400, single-salary schedule, greater academic freedom, more demo-atic procedures in planning the school program, satisfactory enure and retirement laws and reforms in educational service.

**Federal Aid.**—The 80th congress voted $3,000,000 toward providing equipment and facilities for the Veterans' Educational Facilities program (public law 76); $35,000,000 for temporary housing for veterans studying under the G.I. Bill of Rights (public law 85); a program of institutional on-the-farm training for veterans (public law 377); and the establishment of a navy postgraduate school (public laws 302 and 303). Other appropriations included $65,000,000 for the School Lunch program and $1,633,900, representing a substantial increase over the preceding year, for the office of education. The National Science Foundation act, providing federal subsidies for scientific research, was passed by the senate and the house but vetoed with "deep regret" by the president because of alleged administrative deficiencies in the act. Held over for the 1948 session were S. 140 (Fulbright-Taft), proposing a department of health, education and security; H.R. 3342 (Mundt), on the international exchange of information and educational services; and S. 472 (Taft), an annual appropriation of $300,000,000 of educational aid to the several states.

No articulate opposition to the principle of federal aid was apparent in educational circles. At the 30th annual conference of the American Council on Education in the spring, Pres. George F. Zook suggested that a minimum of $1,000,000,000 a year in federal aid was necessary for the educational welfare of the states.

None of the delegates, who comprised the leading educators, school administrators and college presidents voiced dissent. Even the principle of federal aid to colleges and universities failed to arouse protest.

Universal Military Training (U.M.T.) received much attention during 1947. In May, the President's Advisory Commission on Universal Training reported unanimously that "universal training is an essential element in an integrated program of national security intended to safeguard the United States and to enable us to fulfil our responsibilities to the cause of world peace and the success of the United Nations." U.S. educational leaders ranged themselves on both sides of the question: Presi-

PUBLIC SCHOOL STUDENTS at Buffalo, N.Y., pouring hot coffee for teachers who struck for higher wages on Feb. 24, 1947. The U.S. teacher shortage grew in 1947 as salaries continued to lag behind a rising cost of living dents Karl T. Compton (Massachusetts Institute of Technology) and Harold W. Dodds (Princeton), members of the commission, pro; Chancellor Robert M. Hutchins (The University of Chicago), George D. Stoddard (University of Illinois), and Harold Taylor (Sarah Lawrence college, Bronxville, N.Y.), con. To promote the cause of U.M.T. and to counteract the efforts of such groups as The National Council Against Conscription, 50 national organizations created in October the National Security committee, with Presidents James B. Conant (Harvard), Edmund E. Day (Cornell), Charles Seymour (Yale) and Donald Tressider (Stanford) as members.

At least 20 states increased their educational appropriations during 1947, Iowa leading with a rise of 266%. Many states provided salary increases for their teachers.

**Elementary and Secondary Education.**—The trends of recent years continued with little radical change. Social studies in co-ordinated form received stress in the elementary curriculum, while science and social studies were particularly emphasized in the high school. American history interested professional leaders as a result of the publication of the 17th yearbook of the National Council of the Social Studies. Work experience and vocational guidance again occupied significant positions in secondary education. Hope for the basic revision of the secondary curriculum was held in the appointment of the Commission for Life Adjustment Education.

**Higher Education.**—Despite mounting registrations in undergraduate, graduate and professional schools, there were signs that the peak had been reached. Occasional decreases in enrolment warned college administrators of possible future trends. Surveys indicated that the rising tuition and other college expenses, as well as the persistent housing shortage, were responsible for discouraging students from going to college. According to a *New York Times* survey in September, the average cost in 400 colleges rose 37% over that of 1940–41. The cause of democracy in higher education was seen injured by the withdrawal of students of moderate means.

Student veterans continued to do well, although there was no conclusive, consistent evidence that they were superior or inferior to nonveterans. The Evening college of the University of Cincinnati reported a slight edge in favour of the former in grades, attendance, attention and comprehension of subject matter. On the other hand, veterans' grades at Cornell were slightly below those of nonveterans.

Changes in the administrative organizations of institutions included the conversion of the Massachusetts State college into the University of Massachusetts, of the Junior College of Connecticut into the University of Bridgeport, and of Bucknell University Junior college into Wilkes college (Wilkes-Barre, Pa.). Sacramento State college was opened by the California legislature.

The influence of World War II and of the current world situation on the college curriculum may be seen in the adoption by some colleges of a core requirement in contemporary international issues. The intensive language program of wartime was being continued, with some modification, in many institutions. Language and area studies—in Portuguese, Russian and Japanese, especially—became popular all over the country. By the end of 1947, a number of colleges were planning area-study programs on the Arctic region, the U.S.S.R., China, the near east, India, southeast Asia and Scandinavia.

Experiments in the correlation of science and the humanities, with special reference to the history of science, were started at Harvard, Yale and Wisconsin, ostensibly as a result of the ideas advanced by Pres. James B. Conant in "On Understanding Science," the 1946 Terry lectures.

Other developments included the attempts made to link the social-science courses with actual conditions in politics, in
and society; the increase in the number of colleges o
majors in American civilization; the establishment of a
of public relations at Boston university; the use of a fleet
planes, "flying classrooms," in the teaching of geology
University of Illinois; and the formation of the Nationa
dent association, an organization representing 1,100,000 stu
in 351 colleges.

The first report of the President's Commission on E
Education recommended in December a program of feder
to double the present college enrolment by 1960, to provid
public education through the first two years of college f
able to profit therefrom, and to establish "community col
(junior colleges). From the standpoint of the curriculun
commission urged better co-ordination between liberal e
tion and professional and vocational education, less ov
cialization, and training for "citizenship in our democracy."
second report, released Dec. 22, proposed that congress a
priate immediately $135,000,000 for a program of federal
arships and fellowships to aid more than 300,000 need
qualified students to complete college and graduate school
suggested grants, ranging up to a maximum of $1,500 ann
for graduate students, would amount to $1,000,000,000 ann
by 1960, according to the estimate of the commission.

**Adult Education.**—Interest in adult education continu
be high throughout the year. A Gallup poll disclosed tha
out of five Americans were actively interested in adult e
tion. The United States Armed Forces institute reporte
enrolment of 300,000 service personnel. The Great B
foundation, headed by Chancellor Robert M. Hutchins, pla
to expand its campaign to extend free adult education thr
out the country. In the meantime, discussion groups o
Great Books were organized in many cities.

**Race and Religion.**—Several incidents in Gary, Ind
Louis, Mo., and other communities convinced Negro le
and others interested in racial equality that the Negro wa
a long way from attaining educational opportunity on the
level as the white man. While there was some improveme
Negro education under segregated conditions, the discrep
between the white and Negro schools was too great. N
schools in the segregated areas suffered from inadequate f
cial support, the lack of qualified teachers, insufficient sa
for teachers and other difficulties.

Some attempts were made to alleviate the situation. Fe
Security Administrator O. R. Ewing appointed a committ
discover new opportunities for training Negro physicians.
Southern Governors conference requested congressional
proval of interstate agreements for the establishment o
operative regional schools for Negro professional and tech
students. That these measures were deemed unsatisfactor
Negroes was evident from the decision of the National
ciation for the Advancement of Colored People to file "cou
by-county" law suits to end educational segregation.

The relation of religion to public education grew in import
as an issue in 1947. The American Council on Education u
a reconsideration of the place of religion in the curricu
Ecclesiastical leaders deplored the lack of religious conte
the school program. In North College Hill, O., sectarian
ferences were injected into an incident involving the refus
the local school board, consisting of a Catholic majority, t
appoint the superintendent. The 5–4 decision in February o
U.S. supreme court upholding the subsidization by New J
of the transportation of children to parochial schools aro
much discussion. The supreme court of Iowa and the atto
general of Minnesota ruled, on the other hand, that paro
school pupils may not travel free in public school buses.

Above, left: CO-EDUCATION was introduced in Japan as part of the program of democratization being carried on in 1947. Boys and girls are shown working together in a Tokyo school

Above, right: CROWDED LECTURE HALL at the University of Iowa which was typical of U.S. colleges and universities in 1947. Overcrowding continued as veterans studying under G.I. subsistence pay swelled normal enrolments

Left: GERMAN SCHOOL CHILDREN were learning to read and write without the use of textbooks in 1947. Blackboards, chalk and pointer served as substitutes, after the teacher had printed the text by hand

Below: BRITISH teacher trainees studying at Elvaston castle in the Midlands during 1947, as part of a nation-wide program for ensuring adequate teaching facilities in British schools

appeal to the U.S. supreme court from the decision of the Illinois supreme court in the Vashti McCollum case, wherein religious teaching during school hours on public-school premises was declared legal, was not yet decided when 1947 came to a close.

Presidential committees urged the abolition of racial and religious discrimination from U.S. education. The President's Committee on Civil Rights condemned in October "the separate but equal doctrine" of educational and other facilities for the Negro, and proposed "the elimination of segregation, based on race, color, creed, or national origin, from American life." The President's Commission on Higher Education stated in December: "The first condition toward equality of opportunity for a college education can only be satisfied when every qualified young person, irrespective of race, creed, color, sex, national origin, or economic status is assured of the opportunity for a good high school education in an accredited institution."

**International Educational Co-operation.**—The United Nations Educational, Scientific and Cultural organization completed its first year of operation in 1947. Actually, it was not until April that the revised program and the detailed budget were approved and active work begun. National conferences were held in various countries, the U.S. conference taking place in March in Philadelphia. Internationally there were regional study conferences on fundamental education during June in Nanking and during November in Mexico City. In July and August, 79 educators from 31 countries attended the first U.N.E.S.C.O. Seminar on Education in International Understanding at Sèvres, near Paris. Director-General Julian Huxley reported encouraging progress in the four comprehensive projects which involved all or most of U.N.E.S.C.O.'s constituent fields: educational reconstruction and rehabilitation in war-devastated countries; plans for fundamental education, especially the pilot projects in Haiti, China and British East Africa; textbooks and other methods of teaching international understanding in the schools; and the scientific-social project, the "Institute of the Hylean Amazon." Another phase of U.N.-E.S.C.O. activity was the work of the Commission on Technical Needs, which studied the technical needs of the press, film and radio of 12 war-devastated nations, and submitted comprehensive recommendations on how to meet those needs (*United Nations Bulletin*, Jan. 1, 1948).

Throughout 1947, U.N.E.S.C.O. was popularized by many educational, cultural and other groups. Yet the results of a survey released in December by the National Opinion Research centre disclosed that many Americans who look with approval upon the aims of U.N.E.S.C.O. are not willing to translate their feelings into action. (*See* also United Nations.)

In October, the Board of Foreign Scholarships, appointed by the president to administer the Fulbright act, which authorizes agreements with foreign countries whereby the latter set up scholarships for U.S. students in part payment for surplus U.S. war property, requested outstanding educational groups to select the U.S. scholarship recipients. Exchange difficulties, however, made it unlikely that more than a few foreigners would be able to study in the United States. Only one nation, China, signed the act by the end of 1947, although six others were studying its possibilities. Educators looked upon the pending Mundt bill, which provides scholarships for foreign students in the United States, as a necessary supplement to the Fulbright act.

The National Education association initiated the Overseas Teacher-Relief fund in the fall to provide aid to teachers in war-devastated areas. U.S. teachers were urged to contribute sums from $1 to $100 for food, clothing and supplies. This was a teacher-to-teacher Thanksgiving-to-Christmas campaign, administered by the local, state and national educational groups.

Canadian and U.S. historians and educators collaborate report which revealed that history textbooks used in the sc of both nations presented inadequate and incorrect accou each other. This report, which was based on two years' under the auspices of the Canada-United States Council on cation, recommended that the history textbooks be revised

Observers of conditions in Europe reported a deteriorati youth in most countries. Ideological differences stood i way of effective educational co-operation among the occu powers in Berlin. In Bavaria and in the other sections o U.S. zone, the process of re-education was retarded by the of textbooks, insufficient and untrained personnel, and pa resistance on the part of German school authorities. The military government estimated that 10,000 additional class and 7,500 teachers were required in Bavaria alone. Vario forms suggested by U.S. educational advisers in Germany rejected or ignored by German school officials on various nomic and academic grounds. The first official acts of the Bavarian minister of education, Alois Hundhammer, inc the introduction of corporal punishment and the demoti women teachers (*New York Herald Tribune*, Nov. 16, 1 There were no indications that a more stringent policy be adopted by the U.S. military authorities toward recalc German educators.

Visitors to the countries of eastern Europe reported tha spite domination by the Communist party and a general ori tion toward soviet Russia, there was no evidence of com Communist control in education. English was the most po language in the schools throughout Europe, including P and Czechoslovakia. In the latter country, the ministry of cation remained in the hands of non-Communists, while i land, notwithstanding the Communist-dominated govern and the Communist ministry of education, the Communist ence on education was not complete (*New York Herald Tri* Oct. 26, 1947).

In the western hemisphere, the ministry of education of ico announced during the summer that its three-year cam against illiteracy succeeded in reducing the percentage of can illiterates from 35 to 30. About 1,000,000 individuals taught to read and write during the progress of this drive.

The *New York Times* reported on Dec. 26 that a gro Argentine professors who had been dismissed by Pres. Perón founded a Free university, "a sort of university-in within the borders of the country itself." This was interp as "the most formidable challenge" to the dictatorial contr President Perón over the Argentine universities. There indications that the government would adopt a more co tory attitude toward the professors and would reinstate ma them in 1948. The Argentine scholars, however, were rep as unwilling to accept anything short of "very specific gu tees of full political and academic freedom." (*See* also C Welfare; Libraries. For statistics of institutions *see* versities and Colleges.)

Bibliography.—*New York Times; New York Herald Tribune; and Society; The Journal of the N.E.A.*, published by the National cation association; *Higher Education*, published by the U.S. of education.

(W. W. B

**Great Britain.**—In accordance with the terms of the E tion act, 1944, and the Education (Scotland) act, 194 April 1, 1947, the upper limit of "compulsory school age" raised from 14 to 15 years. There were no exemptions; boy and girl in England, Wales and Scotland must receive cient full-time education suitable to his/her age, ability, aptitude, either by regular attendance at school or other between the ages of 5 and 15 years. It had taken nearly 30 to secure this advance; full-time education for all up to 14 made compulsory in 1918.

The step was not taken without opposition. Few people questioned the principle, but many doubted whether at a time of acute economic crisis the entry of some 400,000 recruits to employment should be deferred and the expense of keeping them at school continued. But the government rejected the idea of postponement, and public opinion undoubtedly supported it.

The full benefit of raising the age would not be felt for some time. School building was restricted to relieving extraordinary shortages of accommodation caused by raising the age, the increased birth rate, new housing estates and industrial developments. Consequently, many thousands of children had to be given the longer course of education in premises neither designed nor equipped for the purpose. To meet ordinary shortages of accommodation, schools were being supplied with prefabricated huts, popularly called "Horsa" huts (huts operation—raising school age), each housing two classes. Many local education authorities also transferred 14-year-old children from small or less well equipped schools to larger or better equipped ones. Valuable experiments in the teaching of children of varied educational attainments were being launched as a result of this procedure.

Four days before the compulsory school age was raised in Britain the Education (Northern Ireland) act, 1947, became law. In accordance with the policy of the British government that the provision of public education should be on approximately the same level throughout the United Kingdom, this measure was similar to the Education act, 1944, many of the main sections being identical. As in Britain, the statutory system of public education was organized in three progressive stages: primary, secondary and further education. The same statutory duties are laid upon the local education authorities, and upon parents. Compulsory school age was to be from April 1, 1948, 5 to 15, although local education authorities might with the approval of the minister make bylaws prescribing 5½ or 6 years as the lower limit. Religious worship and instruction were made compulsory in primary and secondary schools. All private schools were to be registered and inspected. The most important difference from the English and Scottish acts is that there was no provision for compulsory part-time education of young persons after leaving school.

Thanks largely to the success of the emergency training scheme, a sufficiently large number of male teachers was entering the schools. Recruitment of men under this scheme ended in June, except for one or two specialist categories. Because of strong competition from industry and administration for the services of highly qualified graduates, there was a growing shortage of specialist teachers, particularly scientists, in grammar schools. In October the Burnham committee recommended revised salary scales for teachers, to operate from April 1, 1948, offering, *inter alia,* larger allowances to highly qualified graduates. Women teachers were still in short supply, especially for younger children, of whom larger numbers were daily entering the schools as a result of the increasing birth rate.

A promising reform in the organization of teacher training was launched by the inauguration in October of the Bristol and Birmingham University Institutes of Education, which federated university and training college facilities under the direction of the university. Similar schemes were planned elsewhere.

The exchange of teachers between Britain and the United States, reopened successfully in 1946, was continued and expanded, with 126 teachers exchanged as compared with 74 in 1946.

Despite all handicaps, much good experimental work was done in the schools, especially the new secondary schools. This was encouraged, in England and Wales by the publication of a forward-looking pamphlet, *The New Secondary Education,* by the ministry of education, and in Scotland by a remarkably progressive report on *Secondary Education* made by the Scottish Advisory Council on Education. The main emphasis in both documents is on development of more active methods without neglect of intellectual standards.

The British government increased its educational budget for 1947–48 by more than £22,000,000, because of the raising of the school age to 15 and other changes required under the education acts of 1944 and 1946. The total cost of education, including the expenditures of the local educational authorities, was estimated to be £212,685,000, an increase of £27,850,000 above the cost of education in 1946–47. Additional government funds, administered by the University Grants committee, were spent for higher education.

The universities were full to overflowing; it was estimated that they contained nearly 70,000 students, as compared with a prewar peak of 50,000. Rather more than two-fifths were ex-service men and women. In June Trinity college, Cambridge, celebrated its fourth centenary, and Eton its fifth centenary. In April the Educational Institute of Scotland, the all-embracing teachers' organization, celebrated its centenary.

In March a comprehensive scheme of compulsory general and voluntary individual education in the army was announced. (*See* also CAMBRIDGE UNIVERSITY; LONDON UNIVERSITY; OXFORD UNIVERSITY.) (H. C. D.; X.)

**Education, U.S. Office of:** *see* EDUCATION; FEDERAL SECURITY AGENCY.

**Education Association, National:** *see* NATIONAL EDUCATION ASSOCIATION.

## Eggs.

The production of eggs in the United States continued at a high level in 1947, reaching a total of 5,015,000,000 doz., compared with 5,098,000,000 doz. in 1946 and the record of 5,365,000,000 doz. in 1944. This high output was sustained with about the same number of laying hens. During the first 11 months of the year the average production per hen was estimated at 149 eggs, compared with 145 eggs in 1946 and a five-year average of 132. Civilian consumption of eggs continued at about 380 per capita, although retail prices were 25% higher.

The number of laying hens on farms in 1947 was lower than in 1946 until July, and only the high rate of laying per hen held up production. A goal for 1948 was set at about 8% below 1947 for egg production and chickens raised to save grains during the winter of 1947–48.

Prices of eggs advanced steadily through 1947. The average farm price was 41.3 cents per dozen in January and held close to that level until June, then advanced to a high of 58.7 cents in December. In October the U.S. government's appeal to the public to cease eating poultry and eggs one day a week had a depressing effect on the market. When this policy was reversed on Nov. 4, the market recovered immediately. Government buying was discontinued in July until late in the fall. Under the Steagall act, price support at not less than 90% of parity was provided through Dec. 1948. The buying of eggs for European relief was expected to support the market through 1948.

Storage stocks of shell eggs declined steadily through 1947 and on Aug. 1 were the lowest on record—4,268,000 cases. Frozen eggs were in larger supply, reflecting increased use by the processed-food industries. The government bought about 275,000,000 doz. shell eggs for shipment to Britain and for price support in 1947. After the confusion resulting from the "no-poultry" holidays in October, the government advised producers that poultry and egg production would probably decline in 1948 because of the large demand for grains for export under the Marshall plan.

World egg production was somewhat higher in 1947 than in 1946 in all countries for which reliable estimates were available. European countries made definite progress toward restoring the prewar numbers of chickens, but the severe grain scarcity appeared likely to retard the increase in flocks. Egg production in France, Italy and the United Kingdom was so near prewar levels, that increases were unlikely. Reliable statistics on poultry raised and eggs produced were very difficult to assemble because of the many small flocks both on farms and in villages. As a means of subsistence poultry was of great importance in all war-devastated areas. (*See* also FOOD RESEARCH; POULTRY.)

(J. C. Ms.)

**Egypt.** An independent kingdom of northeast Africa; bounded N. by the Mediterranean, S. by the Anglo-Egyptian Sudan, N.E. by Palestine, E. by the Red sea, W. by Libya and the Sahara. Area: *c.* 383,000 sq.mi. (arable land 13,600 sq.mi.); pop. (est. June 1947) 19,090,448. Chief towns: Cairo (cap. 2,100,486); Alexandria (928,237); Port Said (132,000); Tanta (105,000); Mansura (79,000); Damanhur (71,000); Asyut (65,000). Language: Arabic; religion: Mohammedan 91%; Coptic 7%. Ruler: King Farouk I; prime minister: Mahmoud Fahmy el-Nokrashy Pasha (Dec. 9, 1946).

**History.**—The events of 1947 were overshadowed by the continued dispute with the United Kingdom, arising out of the Egyptian request for the revision of the Anglo-Egyptian treaty of 1936. The British refusal to meet Egyptian demands greatly excited Egyptian feeling and made friendly relations between the two people increasingly difficult. Another sign of the worsening of Anglo-Egyptian relations and of the embarrassment thus caused was that the situation obliged the Arab league to take sides as between Egypt and Britain. On Jan. 5 the league issued a declaration stating that it supported Egypt's demands in the Sudan. The demand for the unification of the Nile valley had been heard since Egyptians began to call for a revision of the treaty immediately after the end of World War II. Egypt claimed that the Sudan was an essential part of the dominions of the king, both historically and on grounds of common religion and culture, and, particularly, because of the importance of the Sudan in respect to the Nile, upon which Egypt's economy and life depend. The British government maintained, on Jan. 25, that it could not "sign away a people's right of self-determination in a treaty with a third party," and that "the Sudanese may, at the proper moment of political maturity, choose full independence from Egypt." Next day Nokrashy Pasha informed the press that the Egyptian government would submit the whole question of Egypt and the Sudan to the United Nations. In March the British prime minister, Clement Attlee, reiterated the British attitude and stated that British troops would nevertheless leave Cairo for the central zone. This move was completed by March 29. In July the terms of the Egyptian government's note to the Security council were published. The council was asked to order the evacuation of British troops from Egypt and the Sudan, and the termination of the existing regime in the Sudan; it was claimed that the treaty of 1936 was no longer binding, as it had outlived its purpose and contravened the spirit of the charter of the United Nations. Feeling continued to run high and in August, in demonstrations in Cairo and Alexandria, organized by the Moslem brotherhood, casualties amounted to more than 100.

Meanwhile, on Aug. 5, the prime minister of Egypt had put his country's case to the Security council. An Arab delegate supported Egypt but the council passed, with many abstentions, a recommendation for the renewal of direct negotiations. (*See* ANGLO-EGYPTIAN SUDAN.)

EGYPTIANS gathering on the esplanade of Kasr El Nil, April 3, 1947, to se King Farouk raise the Egyptian flag over the garrison, marking the end o the 65-year occupation of Cairo by British troops

Egyptian feeling remained unsatisfied, and their press displayed dissatisfaction, sometimes in the strongest terms. But in the autumn, political affairs were considerably overshadowe by an outbreak of cholera in the provinces which, although i had not affected the great cities, was by the end of Septembe sufficiently serious to lead the government to postpone the opening of the schools, and of the universities of Cairo and Alexandria, and to ask the governments of the United Kingdo and the United States for supplies of anti-cholera serum. Th epidemic spread. Neighbouring countries took severe precautionary measures, limiting travel from Egypt, while aircraf sprayed Egyptian cities with DDT. By the end of October th daily death-rate was officially reported to be in the neighbourhood of 400; by the end of November it had fallen to about 20 Meanwhile political considerations had affected the economi affairs of the kingdom. In May the minister of finance announced that Egypt was unwilling to scale down its sterling balances. After negotiations, a temporary agreement between Egypt and Britian was signed by which £8,000,000 were made available to Egypt before the end of the year. Subsequently Egypt left the sterling bloc.

(H. S. D.)

**Education.**—(1943) Elementary and secondary schools 8,007 scholars 1,309,300; technical and professional schools 115, scholars 19,711; special schools 170, scholars 32,363; higher institutes 42, students 12,522; universities: Al Azhar (Moslem) students 14,185; King Fuad I, students (male) 7,677, (female) 722; King Farouk I, students (male) 1,127, (female) 30.

**Banking and Finance.**—Revenue (est. 1947–48) £E.94,175, 500; expenditure (est. 1947–48) £E.103,257,800; notes in circulation (1946) £E.140,924,000; coin in circulation (1946) £E.7,162,000; public debt (Oct. 1946) £E.128,001,850; gold reserve (March 1947) £E.6,376,000; currency, Egyptian pound (£E.) divided into 100 piastres. Exchange rate £E.1 = 413 cents U.S. (1947).

**Trade and Communications.**—External trade (merchandise): imports (1945) £E.60,476,000; exports (1945) £E.45,159,000. Communications and transport (1945): roads 8,203 mi.; railways 3,385 mi.; navigable canals (1944) 7,323 mi. Shipping (1945): tonnage entered 24,633,000; tonnage cleared 24,013,000. Suez canal (1940): commercial ships passing 2,419, tonnage 12,713,000; war transport ships 40, tonnage 380,000. Airways (1944): Misr air lines: number of passengers 33,322; freight 526 short tons; mails 30 short tons; miles flown 1,023,430; regularity of service 94.2%.

**Agriculture and Minerals.**—Production (1945) in short tons: cotton 259,000; maize 2,679,000; rice 954,000; wheat 1,302,500; lentils 58,400; beans 339,400; barley 288,700; fenugreek 36,300; onions 175,200; sugar cane 2,818,100; petroleum 1,487,119; phosphates 358,010; iron oxides and ochre 4,469; talc 4,262; natron 7,380.

**Eire.** A republic associated with the British commonwealth of nations, Eire occupies five-sixths of an island to the west of Great Britain. Area: 26,602 sq.mi.; pop. (May 13, 1946, census): 2,953,452. Chief towns (1946 census): Dublin (cap. 506,635); Cork (75,361); Dun Laoghaire (44,689); Limerick (42,987); Waterford (28,332). Language: English (76.3%), Erse (Gaelic) 23.7%. Religion: Roman Catholic 93.4%. President: Sean T. O'Kelly; prime minister: Eamon de Valera.

**History.**—The year 1947 was dominated by economic problems, with political issues in abeyance. The temporary British ban on coal exports (Feb. 6) had a crippling effect on the fuel and power situation. Apart from the Great Northern railway (operating on both sides of the border) no passenger trains were run for a prolonged period, and freight trains were limited to three a week. Bread rationing was introduced in March, and the butter ration was cut by half.

After a period of relative stability since 1943, the cost of living index rose sharply in the third quarter to 319 (1914 = 100), representing an increase of roughly 80% since 1939. This threatened to wreck the series of wage adjustments made after the removal in Sept. 1946 of the "standstill" orders governing wages and salaries. The result was a number of strikes, the most serious being that of the road passenger transport service, which began on Sept. 3 and lasted for more than two months.

Accordingly, a supplementary budget was introduced in October. This proposed to subsidize the cost of flour, bread, tea, sugar and fertilizers by means of increased taxation. Substantial increases were made in the duties on whiskey and tobacco, and a new stamp duty imposed on sales of estates: 5% on the purchase price when the buyer was a national, and 25% in the case of nonnationals. A Prices and Efficiency bill was also introduced, designed to increase industrial efficiency by state control.

The volume of external trade was considerable, showing a heavy adverse visible balance. In the first six months imports were £52,700,000 and exports £15,900,000. The disparity was largely remedied by interest on investments and the tourist trade. Ministerial talks in London raised hopes that the export trade would be encouraged by an assured market for agricultural produce in Britain. The Irish contribution to the Paris conference also envisaged a desirable expansion of agricultural production. In conformity with other countries, imports from the United States, which amounted to some £10,000,000 in the first six months, were heavily cut in the autumn. (D. J. O.)

**Education.**—Elementary schools (1946–47): 4,957; scholars 451,820; secondary schools 393; scholars 42,927. Universities (1946–47): National, 4,857 students; Trinity college, Dublin, 1,484 students.

**Finance.**—Budget (1946–47 actual): revenue £54,353,000, expenditure £58,865,000; (1947–48 est.) revenue £66,901,000, expenditure £66,884,000. Public debt (March 31, 1947) £86,797,000. Notes in circulation (June 30, 1947) £42,977,000. The Irish pound has the same value as the pound sterling. £ = 403.5 U.S. cents.

**Trade and Communications.**—Foreign trade (1946): imports £72,043,400; exports £38,612,000. Shipping entered (1946): 2,956,000 tons; cleared 1,998,000 tons. Railways: total length (1945), including the mileage situated partly in Northern Ireland: 2,835 mi. Motor vehicles licensed (March 1946): 176,200. Wireless receiving set licences (1944): 173,300. Telephone installations (March 1946): 55,426.

**Agriculture and Fisheries Production.**—Production (1946, in short tons): wheat 518,039; oats 771,850; barley 124,437; potatoes 3,613,100; sugar beets 107,389. Livestock (1945): cattle 3,856,000; sheep 1,922,000; horses 445,000; pigs (1946) 479,280. Fisheries: total value of fish caught (1946): £594,336. Number of unemployed persons (Feb. 1947): 74,968.

**Eisenhower, Dwight D.** (1890–    ), U.S. army officer, was born Oct. 14 at Denison, Tex. He was admitted to West Point, graduating in 1915, and during World War I was an instructor at several U.S. army camps. After graduating from the Army War college he served in the office of the chief of staff, Washington. In 1935 he served in the Philippines as Gen. Douglas MacArthur's chief of staff. In June 1942 he was given command of the U.S. headquarters in England and was promoted to the rank of lieutenant general. Eisenhower commanded Allied armies that conquered North Africa and Sicily (1943), invaded Italy (1943), landed in France (1944) and in conjunction with soviet forces conquered Germany in 1945. Eisenhower, who had been raised to the rank of a general of the army on Dec. 15, 1944, was designated chief U.S. representative in the Allied military government for the rule of Germany (March 29, 1945). He moved his headquarters to Frankfurt-on-Main on May 26. On Nov. 20, 1945, he was named chief of staff of the U.S. army, succeeding Gen. George C. Marshall; on March 28, 1946, he was named for permanent five-star rank by President Harry S. Truman and on June 24, 1947, his appointment as president of Columbia university was announced.

Throughout 1947, Eisenhower's name was persistently mentioned as a possible candidate for the presidency of the U.S., and a "Draft-Eisenhower-for-President" boom, originating in his adopted state of Kansas, soon spread throughout the country. Eisenhower's feelings were believed to have been accurately reflected in his statement on July 4, in which he observed: "I haven't the effrontery to say I wouldn't be president," although two months later, he insisted he was neither a Republican nor a Democrat and that he had no political ambitions. However, on Jan. 23, 1948, he settled speculation concerning his intentions by issuing a statement to the effect that he desired to remove himself completely from the political scene, and that he would not accept the nomination if it were offered him.

**Elections.** The off-year U.S. elections of 1947 showed no significant or major trend, for they consisted only of scattered contests for congressional vacancies, mayoralty offices and the Kentucky governorship. However, it was generally agreed that the balance in the political ledger favoured the Democrats. Although they did not win on such a scale as to assure them victory in the 1948 presidential contest, they solaced themselves with the thought that they had at least checked the strong Republican trend, which in 1946 had enabled that party to regain control of congress for the first time in 16 years.

There were, for instance, 12 special elections in 1947 to fill house vacancies. Seven were in acknowledged Republican territory—one each in Wisconsin, Washington, Michigan, Pennsylvania, Indiana, Ohio and Massachusetts—and the G.O.P. elected their candidates in these districts. The other five vacancies occurred in Democratic strongholds—one in Alabama, two in Texas, one in Maryland and one in New York—and the Democrats won handily.

Despite the unprecedented number of special elections because of deaths and resignations, the outcome produced no great numerical change in the house or senate lineup. As 1947 closed, there were 51 Republican senators and 45 Democratic. In the house there were 244 Republicans, 186 Democrats, 1 American Labor party member and 4 vacancies.

The Chicago mayoralty election opened the 1947 political show on April 1. The contestants were Russell W. Root, Republican chairman of Cook county, and Martin H. Kennelly, Democrat, a businessman who had never held public office. He repudiated the spoils system, and seemed to cut loose from the Kelly machine, which had dominated Chicago politics for many years.

Kennelly won by 273,354, the largest lead after 1935, although far below the Democrats' 631,000 plurality in that year. It was, however, more than twice as large as retiring Mayor Kelly's 116,159 margin in 1943. The fact that Kennelly ran from 70,000 to 100,000 ahead of his ticket led Republicans to discount the verdict; they maintained that he had been the beneficiary of many Republican conservatives. The G.O.P. won or retained 18 seats in the city council of 50 members, its largest representation in that body after 1931.

The Democrats scored another mayoralty victory in Baltimore on May 6, when Thomas D' Alesandro, Jr., former member of the house, displaced Theodore Roosevelt McKeldin, Republican, who did not seek re-election. D'Alesandro's majority was 24,272, as against McKeldin's 1943 margin of 20,111.

The special congressional elections held in the early months of 1947 had several interesting aspects, although not particularly prophetic. They commanded attention, however, for the light they would throw on the comparative status of the two parties after the Republicans' 1946 sweep, and on prospects for the critical year of 1948.

On April 22, in the 10th Wisconsin district, the Republicans suffered a setback. Glenn R. Davis, Republican, won over his Democratic opponent, Carl W. Thomson, by only 920 votes, for a Republican percentage of 51. In the regular 1946 contest in this G.O.P. stronghold, the Republican entry had rolled up a 29,137 plurality.

The Republicans again barely held their own in a special election in the 3rd Washington district on June 7. Russell V. Mack defeated Charles R. Savage, Democrat, who was backed enthusiastically by the C.I.O., by 1,923 votes. In the regular 1946 election Savage had lost out by 6,895.

The Republicans made an extremely poor showing in the July 15 election to fill the Maryland seat in congress vacated by Mayor D'Alesandro. Edward Panetti, the G.O.P. nominee, got 3,776 votes, as against 12,179 for the Democrat and 7,070 for an independent nominee. Although it is a strong Democratic district, Panetti got only 16.4% of the total, whereas the Republican entry in 1946 received 36.1%.

Two special elections in the 9th and 16th districts of Texas during August had no political meaning. The Republicans did not even put up a candidate.

The Republicans got a lift from the outcome in two special elections in the 11th Michigan and the 8th Pennsylvania districts. In the Michigan contest, Charles Potter won over his Democratic rival, Harold D. Beaton, by 8,081, or 70%. Although it was an extremely light vote, Potter's percentage tally was the highest total that any Republican candidate had received in many years.

The Sept. 9 election in the 8th Pennsylvania district was regarded as especially important, for the Democrats and
C.I.O. allies made it a test of public reaction to Republ
sponsorship and enactment of the Taft-Hartley act. The De
cratic nominee was Phillip E. Storch, a veteran and presi
of the Newspaper Guild of Lehigh Valley, who had st
C.I.O. backing. The Republicans named Franklin H. Lich
walter, speaker of the house of the state legislature. Lich
walter won by 17,602, for a percentage of 61.3. He topped
G.O.P.'s 1946 plurality of 14,936, which represented only 58
of the vote. Lichtenwalter not only carried highly industrial
Lehigh county (coal), but also such strong union centres
Allentown, Bethlehem and Bristol.

The three special congressional contests on Nov. 4 were
sidered to have special importance for various reasons. T
were held, for one thing, after the first Republican congres
16 years had compiled its legislative record. They were
supposed to reflect popular reaction to the severe price infla
which had set in during late summer and early fall. Lastly
was believed that they would furnish a test of sentiment on
Marshall plan for aiding Europe with funds and materials
mated to cost from $12,000,000,000 to $20,000,000,000.

In this respect they were disappointing, for they wer
standoff. The Republicans won in the 10th Indiana and
Ohio districts, as expected, although by reduced majorities.
the 14th New York, a Tammany powerhouse, the Democ
won overwhelmingly, with an American Labor party entry
ond and the G.O.P. candidate third.

The Kentucky gubernatorial election attracted national no
because the Republicans had won this normally Democra
border state in 1943, electing Simeon Willis by 8,639. On N
4, however, the Democrats recaptured the governorship. Th
candidate, Representative Earle C. Clements, defeated El
S. Dummit, the Republican state attorney general, by 99,5
It was a larger plurality than either the Democrats or Repu
cans had expected.

The Taft-Hartley act was a major issue in this contest. A
member of the house, Clements had voted against it. Dum
praised and endorsed it. Despite John L. Lewis' hostility tow
the Truman administration, the result indicated that his 60,
Kentucky coal miners and their families had voted the Den
cratic ticket, a factor which may have accounted for the
usually large Democratic total. In Louisville, 12 Republic
members of the board of aldermen were replaced by Democra

Another contest of national interest was staged in Mississi
to fill the vacancy created by the death of Senator Theodore
Bilbo, violent apostle of white supremacy. Circuit Judge Jo
C. Stennis, who campaigned on a platform of comparat
racial tolerance, was elected over four Democratic rivals. R
resentative John E. Rankin, who had promised to carry
Bilbo's attacks on racial and religious minorities, ran last.
did not win his own congressional district.

The Nov. 4 mayoralty contests presented a mixed pattern,
though the general trend was Democratic. The Democrats' gai
in numerous industrial centres led them to believe that they h
labour on their side because of antagonism to the Taft-Hartl
act, and because of their gratitude to President Truman for
veto of that measure.

In Indiana, for instance, the Republicans controlled 74
102 cities prior to the Nov. 4 tests. On that day the Dem
crats won 53, as against 49 for the G.O.P. Among the man
facturing cities carried by the Democrats were Indianapol
Fort Wayne, Evansville, Muncie and Terre Haute. The Dem
crats also retained municipal control in Gary and South Ber
steel and automobile centres, respectively.

In Massachusetts the Republicans lost the mayoralty conte
at Fitchburg, and Mayor Charles F. Sullivan, Democrat, w

by 7,000 in Worcester, as against only 3,000 in 1945. Another New England city, Manchester, N.H., elected Mayor J. T. Benoit for a third term. The city of Paterson, N.J., staged an upset when Mayor William P. Furrey, two-term Republican executive, lost out by 4,000.

Detroit rejected Edward J. Jeffries, Jr., in his attempt to win a fifth term as mayor. Although the election was conducted on a nonpartisan basis, the victorious candidate, City Councilman Eugene I. Van Antwerp, had the support of the local and national Democratic organizations. The A.F. of L. backed Van Antwerp, while the C.I.O. supported Jeffries for the first time. The outcome preserved the C.I.O.'s record of never having been on the winning side in a Detroit mayoralty contest after its organization.

In Connecticut the Republicans surprised even themselves by recapturing Waterbury city hall for the first time after 1921. They also retained the New Haven mayoralty. In Bridgeport, Jasper McLevy, Socialist, was elected to his eighth two-year assignment as mayor.

In approximately 50 mayoralty elections in New York state, the Republicans made a net gain of one. But the Democrats regained control in the more important industrial cities, including such places as Poughkeepsie, Niagara Falls and Schenectady. The Republicans also lost ground in the Buffalo city council elections. In New York city the voters threw out the system of proportional representation in the board of aldermen, but it was retained in Cincinnati.

The outstanding municipal election in Pennsylvania was for mayor of Philadelphia. There the Republicans scored a clear-cut victory by re-electing Mayor Bernard Samuel with a 92,661 plurality, as against 63,339 in 1943. The Republicans also won all minor city offices, legislative and judicial. In the only statewide struggle, John Sidney Fine, Republican, was elected to superior court by 300,000.

The most important contest in Ohio, another key state, involved the Cleveland mayoralty. Mayor Thomas Burke, Democrat, was re-elected by about 82,000, the largest plurality in the city's history.

Two states—New York and Ohio—voted in favour of issuance of bonds to finance a bonus for World War II veterans.

The final major election of 1947 took place on Nov. 18 in the 9th Massachusetts district. The Republican candidate, Donald V. Nicholson, won over his Democratic opponent by 8,561. The Republican plurality in the regular 1946 contest had been 26,464.

The 1947 election results drew contradictory statements, as to be expected, from the major party leaders. Said Carroll Reece, Republican national chairman: "The Republicans absolutely held the line against bitter and skillful attack. The voters are pleased with the record of the Republican Congress."

Senator J. Howard McGrath of Rhode Island, Democratic national chairman, interpreted the results to mean that "There is widespread dissatisfaction with the record of the Republican party on national issues." (*See* also DEMOCRATIC PARTY; REPUBLICAN PARTY; UNITED STATES and under various states.)

(R. Tu.)

**Europe.**—During 1947, general elections were held in Denmark, Hungary, Poland and Switzerland.

*Denmark.*—Elections for the *Folketing* (lower house of the parliament) were held on Oct. 28, following a motion of no confidence in the Agrarian Liberal government of Knud Kristensen. The Social Democratic and Agrarian Liberal parties improved their positions substantially; the Communist party suffered a severe defeat. The results were: Communists, 141,047 votes (9 seats, against 18 gained on Oct. 30, 1945); Social Democrats, 834,035 (57 seats, against 48 in 1945); Agrarian Liberals, 529,156 (46 seats, against 38); Radical Liberals, 144,133 (10 seats, against 11); Conservatives, 264,146 (17 seats, against 26).

*Hungary.*—Voting for the new national assembly took place on Aug. 31. The Communist party headed the poll when the official results were declared. Almost 93% of the total electorate voted, and the Communist-controlled government coalition received 3,007,027, just over 60% of the total (4,996,183 votes), the percentage which, under the electoral law promulgated in July, gave it 80% of the pool of 60 seats known as the national list. The results, expressed as a percentage of the total votes cast, were: government coalition: Communists 21.6% (17% on Nov. 4, 1945); Social Democrats 15.1% (17.4% in 1945); Smallholders 14.6% (57%); National Peasants 9% (6%); opposition parties: People's Democrats 16%, Independence party 14.4%, three other smaller parties 9.3%. In the new national assembly the government coalition won 371 seats out of a total of 411. (*See* also HUNGARY.)

*Poland.*—The Polish people went to the polls on Jan. 19 to elect the *Sejm,* a single chamber parliament. The Communist-controlled Democratic bloc won 382 seats; the Polish Peasant party (opposition) obtained 28 seats. After escaping from Poland in October Stanislaw Mikolajczyk, leader of the Peasant party, stated bluntly at a press conference in London that, in really free and fair elections, the existing government would not have secured 15% of the votes cast. Asked how the figure of 15% was obtained, Mikolajczyk said that for the purpose of the elections there were 5,200 polling stations for the whole country. By law his own Peasant party should have been able to have an observer at each polling station. In fact, after bringing the strongest pressure to bear, the Peasant party observers were admitted at only 36 polling stations where the Democratic bloc candidates were expected to be returned. At each of these, however, a check showed 65% to 85% of votes cast for the

PRINT SHOP of the Peasant party in Warsaw, Poland, after it was raided prior to the elections of Jan. 19, 1947. Campaign literature was destroyed and the presses badly damaged

Peasant party.

*Switzerland.*—Elections for the new parliament, or national council, were held on Oct. 27. The main feature of the elections was that the Social Democrats, who in the previous polling (Oct. 31, 1943) had become the largest party, superseding the Radical Democrats, again fell back to the second place behind the Radical Democrats. At the same time the Party of Labour (Communist), hitherto represented by only one deputy elected on the Social Democrat ticket, increased its seats to seven. Party strengths (comparison with the former house shown in parentheses) were as follows: Liberal Conservatives 7 (8); Catholic Conservatives 44 (43); Farmers', Traders' and Citizens' party 21 (22); Radical Democrats 52 (47); Independents' party 8 (6); Democrats 5 (6); Social Democrats 48 (55); Party of Labour (Communist) 7 (1); other 2 (6). (*See* also under various countries of the world.)

## Electrical Industries.

Predictions were freely made during the latter half of 1947 that the electric utilities of the United States would be unable to carry the growing loads imposed on them and that disastrous power shortages would occur before the year was ended. Men responsible for utility operation, while recognizing that the danger of shortage existed, were generally confident that peak loads would be carried without public inconvenience or hardship. Their confidence was justified.

An aggregate nation-wide demand of 49,500,000 kw. was carried, leaving a margin of reserve capacity of 5%. As precautionary measures against the possibility of overloading generation facilities, a few power companies had arranged with large industrial customers for certain curtailments of service during peak hours or had reduced voltages from 2% to 5%. These precautions caused comparatively little or no inconvenience and their net effect was estimated to have reduced the aggregate peak demand by less than 0.3%.

During 1946 and the first half of 1947, electric system loads grew at a faster rate than generating capacity could be installed to carry them. This condition was reversed in the middle of 1947 and capacity increase continued to accelerate. It was expected that by Dec. 1948 the margin of reserve capacity would have been widened to 8% or 9% and the danger of shortage would be considerably reduced.

**Electricity Output.**—Electricity produced for public supply in each week of 1947 topped the outputs of corresponding weeks of the previous year by from 8% to 20%. For the year, the total output was 255,394,000,000 kw.hr., over 14% above 1946. The difference between fuel and hydro power appears in the figures of unit capacity output for 1946 and 1947. In the former year, each kw. of fuel power capacity produced 4,097 kw.hr., while each hydro kw. produced 5,262. In 1947 the hydro kw. had an output of 5,263 kw.hr., practically the same as in 1946. This was because water was not available to produce more. Therefore, all of the 1947 output increase came from fuel power plants, each kw. turning out 4,905 kw.hr., nearly 20% more than in the previous year. The effect of this "forced draft" operation of fuel power plants is seen in the slight rise in pounds of coal burned per kw.hr., from 1.29 in 1946 to 1.30 in 1947.

Energy generated in industrial plants and otherwise not for sale to the public amounted to about 50,000,000,000 kw.hr., bringing the total national output up to more than 305,000,000,000 kw.hr.

**Power Plant Capacity.**—Gain in generating capacity from 1946 to 1947 was not large, from 50,317,000 kw. to 51,647,000, about 2.6%. However, capacity increase overtook load increase in the middle of the year and the effective gain in capacity is much more significant than the bare figures say. In 1947, new capacity amounting to 2,176,749 kw. was installed. This produced a net increase of only 1,330,000 kw. in the national total, over a third of the new capacity replacing obsolete and inefficient facilities that were retired. Thus the 2.6% increase represents an accretion of modern, highly efficient equipment capable of much better performance than the average of the total capacity.

In 1947, 82% of the new capacity installed was in fuel power plants, and the ratio in 1948 was expected to be 86%.

**Government Power.**—The proportion of government participation in the national electricity picture declined somewhat in 1947, both as to output and as to capacity. In 1946 the ratios of government and private enterprise were respectively 18.9% and 81.1% as to output and 19.8% and 80.2% as to capacity. In 1947 the output ratios were 18.7% and 81.3% and the capacity ratios 19.6% and 80.4%.

**New Construction.**—Expenditures for electricity supply facilities in 1947 amounted to about $1,400,000,000. Plans for 1948 contemplated a layout of more than $2,000,000,000. Of the total for 1948, 48% was to be spent for generating capacity as against 33% in 1947.

**Maintenance.**—To keep their facilities in good operating condition, electric utilities spent $298,666,000 on maintenance in 1947, and they expected that cost to be $323,465,000 in 1948. Per kw. of total capacity at beginning of the year, maintenance cost was $5.94 in 1947 and was expected to be $6.26 in 1948.

**Electricity Sales.**—Over 13% more electricity was used by the people of the U.S. in 1947 than in 1946, 215,825,000,000 kw.hr. as against 190,794,000,000. Contributing largely to this increase was a reversal of the trend of industrial usage which had declined in 1945 and 1946 from the wartime high level. In 1947 industrial usage turned upward to a point only about 3% under 1944, the highest of the war years.

Sales to rural, residential and commercial customers continued to rise in 1947 as they had done in 1945 and 1946. Average residential use of electricity rose from 1,329 kw.hr. in 1946 to 1,435 kw.hr. in 1947. This was the largest increase registered in any year.

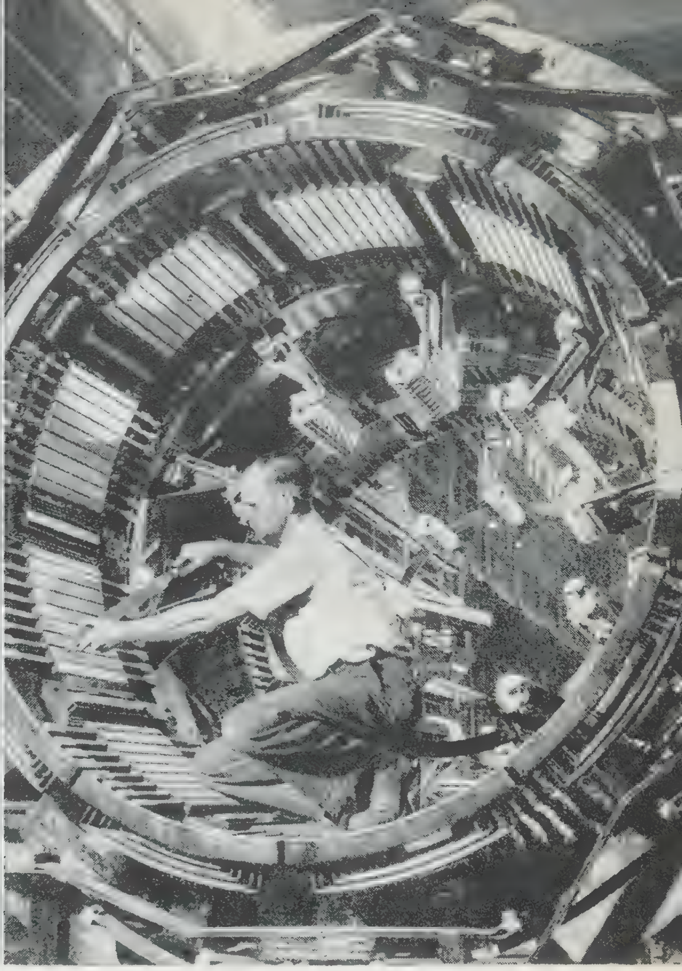
**Revenues.**—Money paid for electric service in 1947 amounted to $3,800,000,000, less than 10% more than the $3,459,560,000 of 1946. The difference between the under 10% of revenue increase and the over 13% increase in sales is accounted for by the fact that about half of the sales increase was taken by industrial users who pay a generally lower rate than others. This effect is seen in the decrease in average revenue per kw.hr. from 1.82 cents in 1946 to 1.76 cents in 1947.

In 1947 the average residential user paid $1.11 more for electric service than in 1946, $43.90 as against $42.79. But he got more electricity and paid less per unit for it. In 1946 he bought 1,329 kw.hr. at a unit rate of 3.22 cents. In 1947 his usage was 1,435 kw.hr. and the unit rate was 3.06 cents. Thus his additional usage cost him only about one cent per kw.hr.

**Rural Service.**—Evidence that power companies were over the high point of rural line construction appeared in the report of miles of line built and to be built by them in 1947 and 1948. In the former year they built 59,127 mi. of line and in the latter they expected to build 51,195 mi. More than 500,000 additional farms were connected to lines during 1947. Total farms connected numbered in 1947 more than 3,800,000, about 68% of the nation's occupied farms. Counting farms to which service was available but which were not connected, it might be said that the job of extending service to farms was about 82% complete.

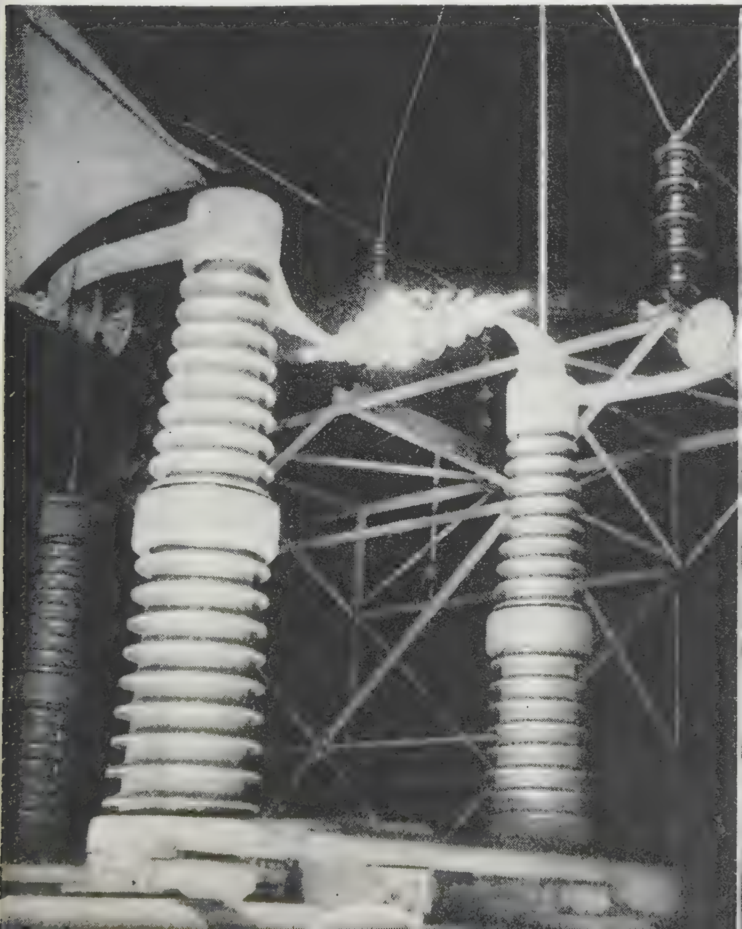
Rise in costs all along the line appeared in 1947 operations of the Rural Electric administration co-operatives. Despite

Above: TESTING MERCURY LIGHTING at an outdoor Westinghouse laboratory in Cleveland, Ohio. The oval-shaped lamps were developed in 1947 to provide night drivers with continuous visibility on the roadway

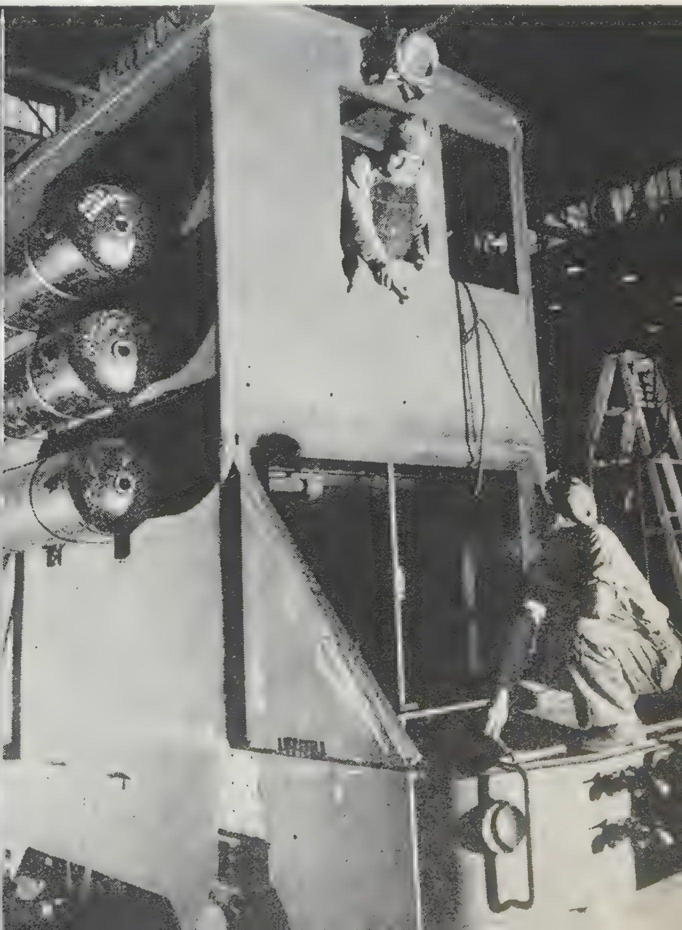


Above: CONSTRUCTION work on a 2,500-kw. generator to be used in the production of steel. A workman is shown preparing the generator frame for final assembly at the Pittsburgh works of the Westinghouse Electric Co. in 1947

Below: GERMAN CIRCUIT BREAKER which was being tested at a substation of the Bonneville power administration, Vancouver, Wash., in 1947. In operation, contact points were separated by air blasts which quenched the arc



Below: GIANT LOCOMOTIVE being built at the Erie works of the General Electric Co. in 1947, for use in moving cars at coke processing plants



this, however, increase in use of service effected a reduction in average revenue per kw.hr. from 3.60 cents in 1946 to 3.41 cents in 1947.

At the end of the year co-operatives had 594,000 mi. of line in operation serving 2,030,000 consumers, as against 506,800 mi. and 1,683,901 consumers at the end of 1946. Number of systems in operation rose from 869 to 904.

**Financial.**—Utility financing of $1,547,375,000 in 1947 was the highest for more than 15 years. Of the total, two-thirds, $1,009,646,000, was in refunding operations; $537,729,000 was new capital. This was more new money than had come into the industry in the previous seven-year period.

The 10% increase in utility revenue from $3,459,560,000 in 1946 to $3,800,000,000 in 1947 was absorbed by increased expenses, leaving net income available for surplus and dividends practically unchanged at $650,000,000. Pay rolls rose 18% from $603,000,000 in 1946 to $710,000,000 in 1947. Taxes rose from $639,000,000 to $655,000,000. Fuel cost increased to $604,000,000 from $427,000,000, 41%. Part of this increase resulted from larger consumption of fuel, 22%, and part from higher costs; unit price of coal and coal equivalent in gas and oil rose from an average of $4.89 per ton in 1946 to more than $6 in 1947.

**Customers.**—In 1947, more than 2,000,000 customers were added to electric lines, bringing the total up to 38,370,000. Of these about 33,000,000 were urban residential and rural customers, including farms. About 95% of the occupied homes of the country had service available and 92% were connected. Since the war ended more than 4,500,000 new customers were added to utility systems.

**Electrical Manufacturing.**—All indexes of electrical manufacturing activity showed increases in 1947 over 1946. The greatest increase occurred in appliance production, the index rising from 395 to 795. The largest contributor to this phenomenal rise was production of refrigerators. More than 3,750,000 household refrigerators were produced in 1947, 67% more than in the previous year. Record productions of electric ranges, 1,250,000 units, and of electric water heaters, 1,000,000 units, respectively 92% and 82% over 1946, also added to the rise of the appliance index.

Compared with the average of all industry, electrical manufacturing was far ahead in 1947. The federal reserve board index of production rose from 210 to 238, but the index of electrical goods production jumped from 258 to 384.

**Technical Developments.**—The year 1947 saw little of outstanding importance in technical advance. The principal step forward was the launching of a program of research to determine the practicability and economy of energy transmission at potentials up to 500,000 volts. The highest voltage in the U.S. in 1947 was 287,000 volts. The research, which was being carried on near Brilliant, O., on a short experimental line, was initiated by the American Gas & Electric Service corporation and other manufacturers. (*See* also PUBLIC UTILITIES; TENNESSEE VALLEY AUTHORITY.) (F. R. I.)

**Canada.**—The electrical industry did not achieve sufficient production in 1947 to meet consumer demands; considerable energies were devoted to overcoming shortages in supplies, and to plant and equipment expansion to meet the expanding markets.

The industries' 1947 production problems were sharply increased in mid-November when the federal government's "austerity" program to save U.S. dollars banned many kinds of electrical apparatus. Included were stoves for cooking or for heating, electric light fixtures and appliances, electric flashlights, electric light bulbs, electric irons, electric dry shaving machines and similar items. Under the "austerity" program the government placed a temporary 25% tax on any imported parts o materials for electrical goods. (C. CY.)

**Great Britain.**—Two events of major importance to electricity supply in Great Britain were the passing of the Electricity act, 1947, and the power cuts in the early part of the year

The act amended the law relating to the supply of electricity and established the British Electricity authority, which was to take over complete responsibility for both the generation and distribution of electricity in all parts of Great Britain excep that controlled by the North of Scotland Hydro-Electric board which was already in active operation.

Partly owing to a hard winter, coal shortages at the powe stations became so acute that severe power cuts were necessary The result was the complete or partial shutdown of many industrial plants during several weeks. It was hoped to avoid a recurrence during the following winter by staggering industrial working hours and by other measures to reduce the peak demand. In spite of power cuts, generated energy at 27,289,000,000 kw.hr. during the first eight months of the year showed an increase of 4.6% over the corresponding period in 1946. Plans were in hand for a new generating plant of an aggregate capacity of 10,000,000 kw. to cost nearly £450,000,000, to be installed if possible, by the winter of 1952.

**India and South Africa.**—A Central Technical Power board was created for all India, and power schemes to give 800,000 kw were in hand for commission by 1953. The power stations of the South African Electricity Supply commission, aggregating more than 985,000 kw., operated at maximum capacity.

**Europe.**—Steady progress was being made in the re-establishment and extension of European electricity supply systems. In the Netherlands, 11 new stations were to be built with an aggregate capacity of 900,000 kw., and in Belgium the total load had risen to more than 1,250,000 kw. French electricity production reached in Jan. 1947 a record output of 2,176,000,000 kw.hr. for the month, and the Electricity Modernization commission fixed a production goal of 40,000,000,000 kw.hr. for 1951, following the planned expenditure of Fr.250,000,000,000 before that date. The Italian ministry of public works drew up a new target for electrification and it was anticipated that hydroelectric plants capable of producing 12,400,000,000 kw.hr annually would be built, 70% of which were to be ready by the end of 1950. In the U.S.S.R., the Dnieprostroi hydroelectric station was re-opened on March 3. The electrical manufacturing industry in Poland made good progress, and a three-year economic plan for Polish electricity supply included the construction of a plant of 24,000 kw. capacity with a grid system 865 mi long. (E. W. G.)

**Electric Lighting:** *see* ELECTRICAL INDUSTRIES.
**Electric Transmission and Distribution:** *see* ELECTRICAL INDUSTRIES.

## Electric Transportation.

Satisfactory conditions prevailed generally in the urban electric transportation industry during 1947. Everywhere the volume of riding continued at a high level. Increased use of private automobile transportation, which had frequently been cited as a threat to the future of public transportation services failed to materialize to any noticeable extent. In the war-devastated countries, substantial progress was made in restoring disrupted electric transportation services. In the United States the general program of modernization, which had been interrupted by World War II, was carried forward at a steady pace though material shortages held up production to some extent.

From preliminary reports of operations for the year 1947 it appeared that the number of passengers carried by the urban electric transportation lines in the United States declined a few per cent from the exceptionally high level of the previous year, though the total of approximately 12,000,000,000 remained well above that of prewar years. Such decline as took place was due in large measure to the decreased use of all forms of urban transportation during the summer months, reflecting the prevailing trend toward more and longer vacations after the end of the war. Some part of the decline was due to the substitution of motor bus service for electric railway service in a number of cities. This loss of electric transportation business, however, was offset to a considerable extent by an increase in riding on electric trolley coach lines. While most of the extensions of trolley coach operation were replacements of street railway lines, the electric coaches were installed in some instances as replacements of motor buses. Altogether, it appears that approximately 55% of the total number of passengers carried on urban transportation lines in the United States in 1947, traveled on the electric lines.

Distribution of riding by types of service is shown below.

*Passengers Carried by Electric Transportation in U.S. During 1947*

| Type of Service | Number of Passengers |
|---|---|
| lectric surface railways* | 8,295,000,000 |
| Rapid transit lines | 2,807,000,000 |
| Electric trolley coaches | 1,442,000,000 |
| Total† | 12,544,000,000 |

*Figures include riding in both urban and suburban areas, but the suburban riding represents only a very minor part of the total.

†Statistics of passengers carried by electrified suburban and trunk-line railroads are not available.

Operating expenses showed a marked upward trend during 1947 due to higher wage rates and increased materials costs. Fares also showed an upward trend.

Two notable events of the year were the creation of the Chicago Transit authority to operate all electric and motor bus transportation services in that city, and the establishment of the Metropolitan Transit authority to perform a similar service in Boston and surrounding towns. These moves undoubtedly reflected a growing recognition of the public importance of urban transportation service.

**Modernization.**—One of the most notable electric transportation developments in the past few years was the widespread adoption of the P.C.C. (presidents' conference committee) type car on many of the more important street railway systems in North America. During 1947 these cars were in operation in 15 of the 20 largest cities of the United States and the two largest cities in Canada. At the close of the year more than 4,000 were in service, carrying about 4,000,000 passengers daily. Some hundreds more were on order. Experience showed that not even the versatile electric trolley coach could equal the economy and efficiency of these modern cars on routes carrying extremely heavy traffic. It was estimated that of the 15,000 older-type street cars in operation in the United States about half would be replaced by P.C.C. cars within the next few years. At the same time estimates were made that about 4,000 new rapid transit cars would be needed in the near future to augment facilities and replace antiquated and worn-out equipment. Delivery was made in 1947 of the first of 850 new subway cars on order for New York city and plans were being made for additional rapid transit facilities in Cleveland, Detroit and Toronto.

Expansion of trolley coach activities was an outstanding development in the field of urban electric transportation in 1947. While the number of new vehicles ordered did not equal the record-breaking number of more than 2,000 ordered during the previous year, it was far above prewar levels.

Because of its speed and quiet operation, the electric trolley coach had been for some years the most popular vehicle for meeting transportation needs on all but the heaviest urban routes, and more than 6,000 were in operation in 55 cities in the United States and Canada.

In Europe the developments in the field of urban electric transportation were mostly in the direction of restoring normal services. Many of the systems on the continent suffered extensive damage during the war. In London, on the other hand, the rapid transit lines, being located for the most part in deep tubes, suffered little damage from bombing and the trolley coach lines on the surface were virtually undamaged. A substantial amount of work was required, however, to catch up with deferred maintenance. Generally speaking, economic conditions prevented the making of extensions or the undertaking of extensive modernization of equipment.

**Heavy Electric Traction.**—Extensive electrification of railroads had taken place on the continent of Europe prior to the outbreak of war in 1939, largely because of the limited amounts of coal and petroleum available in most countries and the desire to make the major transportation systems independent of importations of foreign fuel by placing reliance wherever possible on locally generated hydroelectric power. The war and subsequent unsettled conditions accentuated this trend.

In Sweden about 35% of the country's 10,000 mi. of railroads had been electrified. Swedish economy benefited greatly during the war because of the electrification program. It was said that the saving resulting from the use of hydroelectric power instead of coal was sufficient to cover the entire cost of electrification. During 1947 the important Stockholm-Goeteborg line was converted to electric operation. Two particularly interesting features of Swedish railroad electrification were the use of mobile power plants and the operation of combination storage battery and overhead trolley locomotives. Both of these were precautions to prevent stoppage of service in the event of interruption to the regular power supply.

In France plans progressed for electrification of the Paris-Lyons-Méditerranée railroad. Work done on equipment design during World War II was proving extremely useful. Orders had been placed for more than 600 electric locomotives with rubber suspension to eliminate vibration. Electrification of other French railroads was also contemplated, including many branch lines of relatively light traffic, the object being to hold fuel consumption to a minimum. In the northern and northeastern sections of the country, however, steam operation would probably be continued, the belief being that electric railroads are more vulnerable than steam railroads in wartime. Belgium retained steam operation for the same reason.

Switzerland, which had extensive railroad electrification before the war, made some extensions during the war, but the new projects were small compared with those already complete. A substantial number of new electric locomotives were ordered to replace those worn out by hard service. Electrified railroads in Italy, mostly in the northern part of the country, were heavily damaged during the war. Much work was done toward their restoration, and future extensions were under consideration, but would probably not be undertaken in the near future. In Germany the damaged electrified railroads were being restored, but progress was slow because of the generally disorganized state of the country.

While the fuel situation in Great Britain was far from satisfactory, there was no plentiful supply of hydroelectric power available, and hence no strong reason to extend railroad electrifications. Activities were largely restricted to improvement of existing facilities which suffered a good deal from inadequate maintenance during the war.

In the United States, out of a total of about 400,000 mi. of railroad track, only 6,650 mi. had been electrified by the beginning of 1947 and no sizable extensions were made during the year. Of the 42,000 locomotives in service only 742 were of the straight electric type on Jan. 1, 1947. This was but two more than the number in service ten years before. These electric locomotives were used for about 7% of the total passenger train car miles in all locomotive propelled trains in 1947. In freight service they played a somewhat smaller part.

During 1947 two new 11,000-volt, 5,000-h.p. electrics were placed in service by the Great Northern railroad for operation through the 8-mi. Cascade tunnel. Four new 8,000 h.p. locomotives were under construction for the Virginian railway for hauling coal trains over the Appalachian mountains.

Consideration was being given to a number of new railroad electrification projects, the most outstanding being one which would involve the western parts of several transcontinental railroads, power being secured from government owned hydroelectric plants. Advancement of these projects to an active planning stage seemed likely to await changes of price levels of other fuels which would give added incentive to electrification.

Another significant development in the field of heavy electric traction was extension of services by the Soracabana and Paulista railroads in Brazil. These systems had ordered a substantial number of additional electric locomotives built in the United States. In French West Africa electric railroad operation was eliminated when the previously existing line out of Dakar was converted to operation with diesel-electric locomotives.

(J. A. Mi.)

**Other Developments in Europe.**—Work on the London and North Eastern railway London suburban electrification at 1,500 volts D.C. to Shenfield was proceeding and the electrification of the Manchester-Sheffield line re-started. The Southern railway approved, in principle, plans for the elimination of steam on the eastern and central sections by the conversion to electric traction of 284 route (610 track) mi. Diesel-electric operation would be introduced on light density branch lines. Short extensions of the London Transport Central line were opened during the year.

**European.**—Railway electrification in 1947 did not go forward as hoped the year before. Shortages of labour and material, the restriction of capital expenditure and the major problem of fuel combined to retard development. Yet many European continental railways, especially those pressed by acute fuel shortage and having some hydroelectric resources, had great faith in electrification and adopted impressive schemes as the main feature of postwar development.

The 12 years' program covering the electrification of 1,250 route mi. planned by the Austrian state railways was still delayed. Certain short extensions of existing electrified sections were started. These included Attnang Puchheim-Linz, 34 route mi., and Bischofshofen-Eben, 11 route mi.

Early in 1947 the Belgian National Electrification committee issued its recommendations for further electrification at 3,000 volts D.C. The Brussels-Antwerp line (27.5 route mi.) was then the only electrified section, but the new program, to be carried out in five stages over five years, planned a total of 930 route mi. which represented about a third of the Belgian railway system carrying 70% of the total traffic. The conversion of the Brussels-Charleroi and Linkebeek-Antwerp main line was put in hand.

Restoration of services on electrified lines of the Netherlands railways was practically complete. Attention was focused on the program for a comprehensive electrification network, of nearly 600 additional route mi. covering the whole country, to be carried out before 1952. Secondary lines were to be worked by diesels and steam would be entirely eliminated.

In Italy, the Milan-Domodossola section was opened v Swiss help in May, involving the conversion of 250 track to the 3,000-volt D.C. system. The Italian state railway adn istration hoped that the electrification of the connecting Arona-Mortara would be completed by the end of 1947 allow through electric running between Domodossola and Ge When reconstruction work would have been completed, steam lines Turin-Venice-Ancona-Bari and lines in Sicily w to be scheduled for conversion.

According to the minister of communications the Russ railways planned the electrification of 298 route mi. du 1947. Extensions to existing 3,000-volt D.C. electrified lines w being carried out in the Ural region. The 31-mi. single-tr Nadezhdinsk-Bogoslov section was in hand and electric work began in August between Zlatoust and Baritnaya on the m double-track Ufa-Chelyabinsk line. It was anticipated the e trification would reach Kropatchevo by the end of 1947.

Further details of the proposed 12-year, 2,800-route mi. e trification plan for the Spanish national railways were m available. The 3,000-volt D.C. system was selected as standa This was significant as practically all the existing Spanish e trification, approximately 570 route mi., was at 1,500 volt D and 3,000 volt was in use only on the short Ujo-Busdo section.

Work began on a third-rail underground railway for Sto holm and it was hoped that the first trains would be running 1949. In Switzerland the final 16-mi. section opened in Octo between Kreuzlingen and Stein am Rhein completed the 40- electrification between Schaffhausen and Romanshorn.

(F. A. H.

**Canada.**—Statistics covering the first seven months of 19 when compared with the same period for 1946, indicate significant trend. The January–July inclusive vehicle mile of urban electric cars was 71,291,023 (same period 1946: 113,857). In Jan.–July 1947 the vehicle mile run for tro buses was 2,330,112 (1946: 1,675,048). This showed that use of electric cars was declining while that of electric tro buses was increasing.

Halifax took steps to remove streetcars entirely and repl them with trolley buses. It was the first Canadian city to this, though trolley buses had been placed on some routes Winnipeg as early as 1937.

Competition with the motor bus on interurban runs also duced electric car mileage (Jan.–July 1947: 4,082,639; Ja July 1946: 4,180,257). Interurban motor bus mileage cover the same periods in each year increased (1947: 46,339,8 1946: 45,191,718).

(C. Cy.)

**Electrification, Rural:** *see* RURAL ELECTRIFICATION.

## Electronics.

While many methods had been used in the p to make apparent the presence of electrons, even a single electron, until 1947 these were all indirect. Ho ever, it was announced in May 1947 that researches in the G eral Electric Research laboratory, Schenectady, N.Y., with 70,000,000-volt synchrotron had made electrons visible direc by their own radiation. The 70,000,000-volt synchrotron was first accelerator constructed of sufficient energy to bring electron radiation into the visible spectrum, and at the sa time to be provided with a transparent accelerating cham through which it could be observed.

In the synchrotron electrons are accelerated in an evacua glass "doughnut." The radiation is seen as a small brilliant s of white light when looking into the doughnut, tangent to circular orbit and toward the approaching electrons. It is observed if the energy of the electrons is below 30 Mev. Tho mainly of theoretical interest, this effect proved useful in c nection with accelerator design in studying the distribution of the electrons.

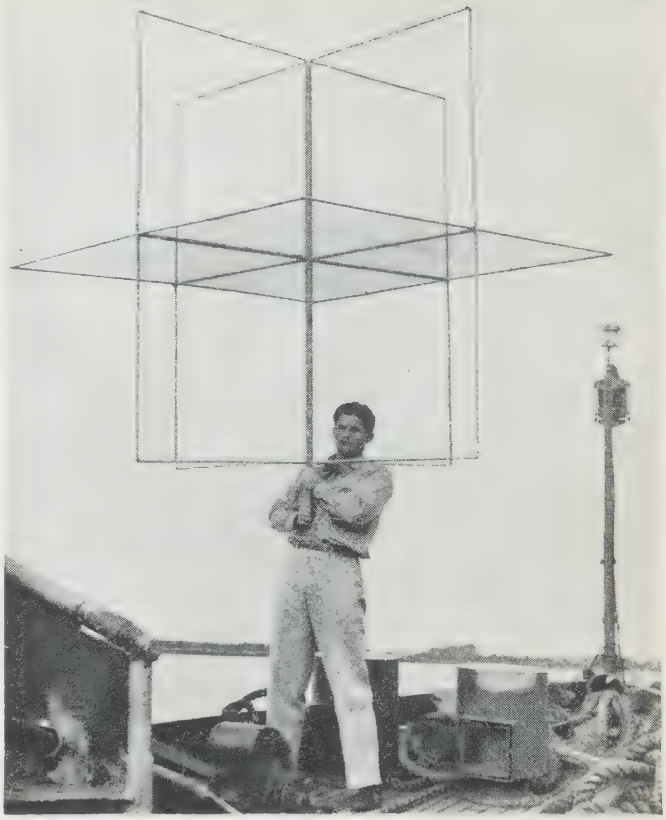
**Astronomical Aids.**—To measure light from the stars, especially those which vary in brightness, astronomers have employed many types of photometer, and some of the most accurate have been electronic, using a phototube which converts the star light into a minute electrical current. This, in turn, is measured on a galvanometer, a delicate and unstable instrument. At a meeting of the American Astronomical society, I. M. Levitt and William Blitzstein, of the Franklin Institute laboratories, in Philadelphia, Pa., described a new type of electronic photometer which they had developed and tested at the Flower observatory of the University of Pennsylvania.

Instead of a simple phototube, they used an electron multiplier tube, which has within a common envelope nine stages of amplification. For every electron knocked from the first sensitive surface by incident star light, 1,000,000 or more are emitted from the last stage. These come in bursts, and the new photometer counts the bursts with a counter developed by the Radio Corporation of America. After the star has been located with the telescope, and its image centred on the first surface of the photomultiplier tube, operation is automatic. The desired time interval, such as 100 sec., is set on the counter, and when this has elapsed the total number of pulses is shown by rows of neon lights. This number is proportional to the star brightness.

Another astronomical application of electronics was developed at the Mt. Wilson observatory by Horace W. Babcock and used with the 100-in. reflector, to keep the telescope pointed at a star during long exposure by automatic means, thus eliminating manual guiding. It is employed particularly in spectrographic work, where the image of the star is formed on a narrow slit and is then passed through an optical system which breaks it up into a spectrum. In the Babcock device, part of the light from the star is reflected by the polished knife-edge jaws of the slit into a guiding telescope through which the image may be observed visually. For automatic operation the light enters a revolving tube in the axis of this small telescope, and then reaches a multiplier type phototube. When the large telescope is not properly pointed, the reflected guiding image on the phototube is not steady, but changes in brightness as the tube revolves. This causes the operation of mechanism to adjust the direction of the large telescope until it is correctly aimed and the phototube output is again uniform.

**Air and Sea Navigation.**—It was announced in August that all planes of Trans-World Airlines were being equipped with a new radar anti-collision device. Weighing only 15 lb., this apparatus can be set to give automatic warning of mountains or earth either 2,000 or 500 ft. ahead or below. From an antenna on the belly of the plane, just behind the leading edge of the wing, the radar signal is sent out, covering the entire lower hemisphere. No adjustments need be made in flight, except to select the operating range. As soon as any land surface comes within this distance a warning is given. Approaching a peak, the pilot usually will receive his first warning from the echo from the rising ground below rather than from the mountain itself. The foothills generally extend up to 30 mi. from the peak, and thus give plenty of time for the plane to reach a safe altitude.

An automatic system by which the airways of the country may be divided up into "electronic tracks," so that planes may fly in lanes two miles apart without danger of collision was announced by the General Electric company. The system is called "Tricon," a short designation for "triple-coincidence-navigation." In each 50-mi. section there are three ground transmitters which send out pulses that are brought into triple coincidence at successive points along the tracks. At the same time that the ground station is notified of the position, altitude and identity of each plane in the section, the position is also automatically given to the pilot. The pilot of the plane immediately ahead is also given warning. Thus, the system is similar to the block system of railroads, but instead of signals alongside the track each plane has its indicator on the instrument panel. Automatic equipment both on the ground and in the planes receives, interprets and acts upon the signals from the transmitter, displaying its information by meters and flashing lights.



RADAR REFLECTOR used in surveying work by geophysicists who were engaged in deep-water prospecting for oil on the continental shelf off the coast of Texas and Louisiana during 1947

Using a 3.2-cm. radar equipment made by the Radiomarine Corporation of America, the U.S. army engineer corps prepared a set of navigation charts of the Ohio river. The equipment was installed on the U.S. survey boat "Cherokee." An automatic camera made a series of photographs of the radar scope on which its indications are displayed. These photographs were matched, to form a continuous strip map which was reduced to the scale of standard navigation charts. On the assembled charts, dotted lines were added to indicate the channel, as well as figures to show the depth of water and brief identifying descriptions of important landmarks. Using these charts in conjunction with radar, the pilot of a ship can determine exactly where he is and recognize islands, cliffs, buoys, buildings, etc., as though he could see the landmark itself.

Two war-developed electronic devices were combined in a peacetime use when Shoran (a radio navigation aid) and the air-borne magnetometer (originally devised to detect submarines under water) were employed in a survey of some 85,000 sq.mi. of the Bahamas area to locate possible ocean-bed oil deposits. Already the magnetometer had been used in the United States, Alaska and Canada to locate land deposits of minerals, particularly iron ore. For use over the ocean, it was necessary to add some additional means of determining accurately the plane's position, and this was accomplished with Shoran.

**Motion Detector.**—In the General Electric Research laboratory, another war device, the proximity fuse, was adapted to a motion detector by W. C. White and H. S. Lasher. As used on anti-aircraft shells, the fuse sent out radio waves which were reflected from a near-by target and caused detonation of the shell without an actual hit. The new motion detector uses microwaves of 2,450 megacycles, a frequency set aside by the Federal Communications commission for industrial use. From a dipole antenna at the focus of a parabolic reflector a beam of microwaves is sent out. When any reflecting object is in the beam some energy is returned and is picked up by the antenna. Depending on whether or not it is in phase with the outgoing signal, the energy being fed into the antenna from the transmitting circuit may be reduced. If the reflector is moving toward or away from the transmitter there is superimposed upon the high-frequency oscillating current a low-frequency variation, of about 7.5 cycles per second for each mile per hour of motion. This is detected by auxiliary circuits and used to operate a light, bell, meter or other indicator, which reveals the moving object. Many uses were suggested for this motion detector, such as controlling automobile traffic, detecting intruders, measuring the height of a liquid in a closed tank, etc. It will operate through a wood or brick wall.

**Chemical Analysis.**—A method of using microwaves as a method of chemical analysis of unknown substances was announced before the National Electronics conference by Dr. Donald K. Coles, of the Westinghouse Research laboratories. He explained that each type of molecule has a set of distinctive motions, so a molecule will absorb part of a radio wave that is of the same frequency as its rotation.

In the "microwave spectroscope," devised by Dr. Coles and his associates, the gas to be analyzed is admitted to a 35-ft. long brass pipe, wound into a tubalike coil. At one end is the oscillator which produces waves of frequency up to 30,000 megacycles (30,000,000,000 vibrations per second). These are received by a crystal detector at the other end. As waves of continually changing frequency are transmitted through the pipe, there are changes in the crystal current corresponding to different molecular absorptions. In this way various molecular arrangements present can be identified.

**Electronic Heating.**—Industrial heating of materials which are electrical conductors has been accomplished for some time with induction methods, by which a current is made to flow within the metal and produces heating throughout its volume. Materials such as plastics, which are classed as insulators, may be similarly heated with microwaves if sufficient power is used. In general, the higher the frequency, the more rapid is the effect. These techniques were facilitated with the type of electron tube known as the magnetron, which was developed to a point where considerable power could be obtained up to frequencies of as much as 10,000 megacycles.

Dr. Richard B. Nelson, of the General Electric Research laboratory, announced a magnetron oscillator for heating these materials which delivers 5 kw. continuous output at 1,050 megacycles. (Later, to meet rules of the Federal Communications commission, this was modified to 915 megacycles.) A person standing near the dipole antenna radiating these microwaves feels warmth through his body and unconnected fluorescent lamps held nearby are lighted. Industrially the tube was used in the manufacture of plastics as well as for other applications.

The possibility of using radio waves to heat milk for pasteurization was indicated in experiments performed in the R.C.A. laboratories in co-operation with the Walker-Gordon company and the Borden company. In ordinary pasteurization milk is heated to 143° F. for 30 min., then cooled. The bacteria content was reduced to about 1% of the original value.

The new apparatus was developed in an experimental fo by Dr. George H. Brown, C. N. Hoyler and R. A. Bierwir By allowing the milk to fall freely through a large tube, tween two electrodes connected to the transmitting circuit, could be heated to as much as 205° F. in 1/15 of a seco Then it was cooled to 135° F. in $\frac{1}{5}$ of a second by injecti into a vacuum chamber. Despite the high temperature, th was no trace of a cooked flavour and the bacteria count w considerably lower than with conventionally pasteurized mi Milk treated by the new process tends to keep longer, accordi to the report. This is attributed to the destruction of he resistant bacteria which cause souring.

**Telephone Communication.**—A new technique for lo distance telephone communication, called "pulse code modu tion" (P.C.M.), was announced by the Bell Telephone labo tories. In ordinary telephony over short distances, variations the current carried over the wires reproduce the complete sou waves of the original voice. With an earlier development, call pulse modulation, instead of transmitting the continuous spee wave, brief samples are taken at a rate of about 8,000 per s ond. At the receiving end these samples may be used to reco struct the original wave with great fidelity. The total ti occupied by the samples is very short, so many conversatio can be carried simultaneously. First is carried a sample fro one, then another, then a third, and so on, all of which a sorted out and reconstructed at the receiver.

P.C.M. differs from earlier pulse techniques. For each samp there is sent a series of six or seven on or off signals which, combination, convey the information from which the ent wave form is reconstructed. Coding is accomplished by a n vacuum tube, within which is a special perforated plate. moving beam of electrons sweeps across it, producing an "o pulse when it goes through a hole and an "off" when it stopped. Ordinary sources of interference produce little effe because the receiver merely has to detect the presence or a sence of a signal and not its strength, which is more apt to affected by extraneous causes.

**Electron Tubes.**—Another new electron tube announced 1947 was the caesium rectifier developed by Dr. Albert W. Hu assistant director of the General Electric Research laborato in collaboration with E. E. Burger and R. E. Turrentine. Sin most electricity is generated and transmitted as alternating cu rent, while electrolytic processes, such as those used to fr aluminum from its ores, require direct current, rectifiers a important industrial devices. The new tube contains vapour the metal caesium, while the cathode surface, from which ele trons are emitted, is also of caesium, coated on nickel. The electrons make the tube work, since they provide a one-w street over which the current is carried. Even at a relative low temperature, their emission from caesium is one of the mo copious known. Thus it can be operated at about 1,300° which causes no appreciable evaporation of the nickel base, wh the caesium coating is continually renewed from the vapour.

Two electronic "memory" tubes were announced, one Andrew V. Haeff, of the Naval Research laboratory, the oth by Dr. Jan Rajchman, of R.C.A. laboratories. One use f tubes of this type may be found in electronic computing m chines, where numbers computed in one operation may be stor until needed later, when they are automatically read and use

Both tubes accomplish the memory by a series of electric charges on the surface of a material that is a good insulato (If it were not an insulator, the charges would leak away.) T common type of television camera tube, the iconoscope, operat similarly, charges being produced in proportion to the brightne of the picture focused upon it. An electron beam sweepi across the surface can also produce the pattern of charges, a this is done in the memory tube. Then the pattern has to be read, and this is accomplished in the Haeff tube with a second beam of focused electrons sweeping across the surface. A simiar method is used in the iconoscope. However, this results in an erasure of the pattern of stored electrons after a few such scans. To overcome this erasure, a third beam of electrons is sprayed over the surface and this is of such an energy that it maintains the image, even though the other beam is scanning it. If the screen is also coated with a phosphor, which fluoresces n visible light when electrons strike, the pattern may be made visible, either as bright lines on a dark background, or dark ines on a bright background. This is determined by the choice of relative tube voltages. In addition, the scanning beam may be connected to an oscillograph tube, like that used in a television receiver, and the pattern made visible there. (*See* also ATOMIC ENERGY; CHEMISTRY; PHYSICS.)

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**Elementary Education:** *see* EDUCATION.

**Elizabeth,** PRINCESS, DUCHESS OF EDINBURGH (1926– ), the heiress-presumptive to the British throne, was born on April 21, at London, and until Nov. 1947, when she married the duke of Edinburgh (*q.v.*), was known as Princess Elizabeth. She was 11 when her father was crowned king.

PRINCESS ELIZABETH of England and Prince Philip, duke of Edinburgh, leaving Westminster abbey after they were married by the archbishop of Canterbury on Nov. 20, 1947

In 1943, in order that Princess Elizabeth "should have every opportunity of gaining experience in the duties which would fall upon her in the event of her succession to the throne," the Regency act was amended to provide for her appointment as counsellor of state any time after her 18th birthday instead of after her 21st birthday. The first occasion when she was appointed a counsellor of state was in July 1944, when the king visited the forces in Italy. She enrolled in the auxiliary territorial service in 1944, and was commissioned with the rank of junior commander.

In the early months of 1947 she accompanied the king, queen and Princess Margaret on a state visit to the Union of South Africa. She celebrated her 21st birthday in Capetown, and in a broadcast to the empire she declared, "My whole life shall be devoted to your service."

A court circular from Buckingham palace on July 9 announced her betrothal to Lt. Philip Mountbatten, R.N., and the marriage was solemnized in Westminster abbey on Nov. 20. Philip Mountbatten was created duke of Edinburgh, and after the wedding she was known officially as H.R.H. Princess Elizabeth, the Duchess of Edinburgh. The wedding service was conducted by the archbishop of Canterbury, assisted by the archbishop of York and the dean of Westminster.

During the summer Princess Elizabeth opened the royal Welsh agricultural show at Carmarthen, addressed the Church of England Youth council at Canterbury, launched the liner "Caronia" on Clydebank, was elected president of the Royal Society of Arts, and on July 16 created a burgess of Edinburgh. On the occasion of the king's birthday honours she was awarded the Imperial Order of the Crown of India and on the eve of her wedding appointed a lady of the Order of the Garter.

**Elks, Benevolent and Protective Order of:** *see* SOCIETIES AND ASSOCIATIONS.
**Ellice Islands:** *see* PACIFIC ISLANDS, BRITISH.
**El Salvador:** *see* SALVADOR, EL.
**Embassies, Great Britain and the United States:** *see* AMBASSADORS AND ENVOYS.
**Emery:** *see* ABRASIVES.
**Emigration:** *see* IMMIGRATION AND EMIGRATION.

**Employment.** United States.—The civilian labour force (people available for gainful employment) numbered 62,130,000 in Sept. 1947, 790,000 more than in Sept. 1946. The maximum available labour force during the year was in June and July, when students and other seasonal workers available only during the summer months swelled the labour supply to slightly more than 64,000,000. The unemployed numbered 1,912,000 in Sept. 1947, compared with 2,070,000 in Sept. 1946.

Males in the labour force in Sept. 1947 numbered 44,881,000, compared with 44,040,000 in Sept. 1946. Females numbered 17,249,000 as against 17,300,000 in Sept. 1946. They constituted 27.7% of the labour supply, a decline from 29.4% in Aug. 1946. The male labour force increased more rapidly than the female in the intervening year.

Employees in nonagricultural establishments numbered 43,033,000 in Sept. 1947, an increase of 1,185,000 from Sept. 1946. From Sept. 1946 to Sept. 1947 there was an increase of 762,000 in the number of people working in manufacturing establishments and smaller increases in all of the other major areas of employment (*see* Table I) except public employment (civilian) which decreased from 5,605,000 in Sept. 1946 to 5,425,000 in

Table I.—*Number of Wage and Salary Workers* in Nonagricultural Establishments, by Industry Division, United States (estimated), Sept., Aug. and July 1947 and Sept. 1946*

(In thousands)

| Industry division | Sept. 1947 | Aug. 1947 | July 1947 | Sept. 1946 |
|---|---|---|---|---|
| Total estimated employment . . . . . | 43,033 | 42,547 | 42,175 | 41,848 |
| Manufacturing . . . . . . . . . . | 15,797 | 15,537 | 15,209 | 15,035 |
| Mining . . . . . . . . . . . . . | 895 | 895 | 864 | 884 |
| Contract construction† . . . . . . | 1,900 | 1,890 | 1,847 | 1,747 |
| Transportation and public utilities . . . | 4,115 | 4,145 | 4,140 | 4,064 |
| Trade . . . . . . . . . . . . . | 8,684 | 8,571 | 8,558 | 8,523 |
| Finance . . . . . . . . . . . . | 1,583 | 1,602 | 1,590 | 1,534 |
| Service . . . . . . . . . . . . | 4,634 | 4,619 | 4,686 | 4,456 |
| Federal, state and local government . . | 5,425 | 5,288 | 5,281 | 5,605 |

*Estimates include all full- and part-time wage and salaried workers in nonagricultural establishments who worked or received pay during the pay period ending nearest the 15th of the month. Proprietors, self-employed persons, domestic servants and personnel of the armed forces are excluded. These estimates have been adjusted to levels indicated by final 1945 data made available by the bureau of employment security of the Federal Security agency. Data for the months of September and August are subject to later revision.

†These figures cover all employees of private firms whose major activity is construction.

Sept. 1947. In all but 6 industries, employment increased during the year (Table II). Transportation equipment, nonferrous metals, stone, clay and glass and the textile industries were the only areas where employment declined. The United States enjoyed "full employment," with but moderate "frictional unemployment" and some decline in activity in the industries mentioned.

Table II.—*Number of Production Workers and Indexes of Production-Worker Employment in Manufacturing Industries, by Major Industry Group, United States**

(Sept. 1947 and Sept 1946)

| Industry group | Number of production workers Estimated in thousands | | Production-worker indexes, (1939=100) | |
|---|---|---|---|---|
| | Sept. 1947 | Sept. 1946 | Sept. 1947 | Sept. 1946 |
| All manufacturing . . . . . . . . . . . . . . | 12,833 | 12,244 | 156.7 | 149.5 |
| Durable goods . . . . . . . . . . . . . | 6,481 | 6,249 | 179.5 | 173.1 |
| Nondurable goods . . . . . . . . . . . . | 6,352 | 5,995 | 138.7 | 130.9 |
| Iron and steel and their products . . . . . . | 1,580 | 1,514 | 159.3 | 152.7 |
| Electrical machinery . . . . . . . . . . . . | 567 | 563 | 218.9 | 217.3 |
| Machinery, except electrical . . . . . . . . | 1,185 | 1,112 | 224.3 | 210.3 |
| Transportation equipment, except automobiles . . | 409 | 455 | 257.4 | 286.8 |
| Automobiles . . . . . . . . . . . . . . . | 801 | 788 | 199.2 | 196.0 |
| Nonferrous metals and products . . . . . . . | 395 | 411 | 172.1 | 179.5 |
| Lumber and timber basic products . . . . . . | 679 | 583 | 161.6 | 138.6 |
| Furniture and finished lumber products . . . . | 438 | 405 | 133.5 | 123.5 |
| Stone, clay, glass products . . . . . . . . . | 427 | 518 | 145.5 | 142.5 |
| Textile-mill products and other fibre . . . . . | 1,191 | 1,204 | 104.2 | 105.2 |
| Apparel and other finished textiles . . . . . . | 1,149 | 1,049 | 145.6 | 132.9 |
| Leather and leather products . . . . . . . . | 364 | 358 | 104.8 | 103.1 |
| Food . . . . . . . . . . . . . . . . . . | 1,376 | 1,175 | 161.1 | 137.5 |
| Tobacco manufactures . . . . . . . . . . . | 86 | 87 | 92.3 | 93.5 |
| Paper and allied products . . . . . . . . . | 381 | 372 | 143.5 | 140.0 |
| Printing, publishing and allied industries . . . . | 429 | 401 | 130.7 | 122.3 |
| Chemicals and allied products . . . . . . . . | 563 | 530 | 195.2 | 184.0 |
| Products of petroleum and coal . . . . . . . | 162 | 157 | 153.4 | 147.8 |
| Rubber products . . . . . . . . . . . . . | 216 | 229 | 178.5 | 189.1 |
| Miscellaneous industries . . . . . . . . . . | 435 | 433 | 177.8 | 176.9 |

*The estimates and indexes presented in this table have been adjusted to levels indicated by the final 1944 data made available by the bureau of employment security of the Federal Security agency.

In durable goods the index of employment rose from 173.1 in Sept. 1946 to 179.5 in Sept. 1947; in nondurable goods there was a rise from 130.9 to 138.7 (1939=100). The number and indexes of manufacturing employment in Sept. 1946 and Sept. 1947 are shown in Table II.

Employment on construction work, including both private and public construction work done by private contractors, increased from 1,747,000 men in Sept. 1946 to 1,900,000 men in Sept. 1947 (Table I).

Table III gives indexes of employment and pay rolls of selected nonmanufacturing industries in Sept., Aug., July 1947 Sept. 1946.

Table III.—*Indexes of Employment and Pay Rolls in Selected Nonmanufacturing Industries, United States, Sept., Aug., July 1947 and Sept. 1946*

(1939 average=100)

| Industry group and industry | Employment Indexes | | | | Pay Roll Indexes | | | |
|---|---|---|---|---|---|---|---|---|
| | Sept. 1947 | Aug. 1947 | July 1947 | Sept. 1946 | Sept. 1947 | Aug. 1947 | July 1947 | S |
| Mining: | | | | | | | | |
| Anthracite . . . . . . . . . . . . . . . . | 80.7 | 81.4 | 78.7 | 82.2 | 211.1 | 209.3 | 171.8 | 1 |
| Bituminous . . . . . . . . . . . . . . . . | 89.2 | 88.1 | 81.8 | 90.5 | 270.2 | 267.0 | 194.9 | 2 |
| Metal . . . . . . . . . . . . . . . . . . | 88.3 | 89.5 | 89.1 | 83.5 | 179.0 | 179.4 | 171.9 | 1 |
| Iron . . . . . . . . . . . . . . . . . | 147.3 | 148.3 | 148.0 | 138.1 | 298.7 | 305.3 | 295.4 | 2 |
| Copper . . . . . . . . . . . . . . . . | 101.8 | 101.7 | 101.8 | 90.0 | 223.2 | 217.0 | 209.6 | 1 |
| Lead and zinc . . . . . . . . . . . . . | 89.6 | 95.1 | 93.8 | 95.6 | 203.6 | 207.8 | 198.0 | 1 |
| Gold and silver . . . . . . . . . . . . | 31.4 | 31.6 | 31.1 | 29.0 | 52.0 | 51.7 | 46.8 | 4 |
| Miscellaneous . . . . . . . . . . . . . . | 56.6 | 58.3 | 67.6 | 60.4 | 102.5 | 105.3 | 99.1 | 9 |
| Quarrying and nonmetallic . . . . . . . . | 105.4 | 106.3 | 106.0 | 102.5 | 258.5 | 259.6 | 251.2 | 22 |
| Crude petroleum production . . . . . . . | 95.6 | 97.3 | 97.2 | 93.9 | 175.6 | 173.3 | 173.9 | 14 |
| Transportation and public utilities: | | | | | | | | |
| Class I steam railways . . . . . . . . . | 138.1 | 140.0 | 140.0 | 138.0 | .... | .... | .... | |
| Street railways and buses . . . . . . . . | 129.6 | 130.7 | 130.9 | 129.9 | 224.1 | 225.2 | 222.1 | 2 |
| Telephone . . . . . . . . . . . . . . . . | 191.1 | 193.8 | 193.3 | 181.0 | 309.6 | 306.2 | 302.2 | 26 |
| Telegraph . . . . . . . . . . . . . . . . | 99.8 | 100.5 | 101.5 | 112.0 | 211.8 | 213.5 | 215.2 | 17 |
| Electric light and power . . . . . . . . . | 109.9 | 110.2 | 109.3 | 101.9 | 183.1 | 182.9 | 178.4 | 15 |
| Trade: | | | | | | | | |
| Wholesale . . . . . . . . . . . . . . . . | 113.3 | 112.2 | 111.1 | 109.4 | 203.3 | 198.2 | 196.5 | 18 |
| Retail . . . . . . . . . . . . . . . . . . | 112.3 | 109.3 | 110.2 | 109.8 | 202.5 | 197.7 | 198.6 | 18 |
| Food . . . . . . . . . . . . . . . . . | 112.6 | 111.5 | 113.0 | 103.5 | 209.3 | 212.2 | 213.8 | 17 |
| General merchandise . . . . . . . . . . | 122.6 | 115.7 | 116.7 | 125.4 | 219.8 | 212.0 | 214.1 | 19 |
| Apparel . . . . . . . . . . . . . . . . | 113.4 | 103.4 | 106.8 | 116.7 | 203.4 | 183.4 | 192.5 | 19 |
| Furniture and house furnishings . . . . . | 87.5 | 85.8 | 86.0 | 81.5 | 159.8 | 155.4 | 156.1 | 13 |
| Automotive . . . . . . . . . . . . . . . | 104.8 | 105.1 | 104.2 | 95.5 | 188.5 | 188.5 | 184.8 | 15 |
| Lumber and building materials . . . . . | 124.6 | 123.1 | 121.4 | 113.8 | 232.5 | 229.0 | 218.8 | 19 |
| Service: | | | | | | | | |
| Hotels (year-round) . . . . . . . . . . | 117.4 | 117.6 | 118.3 | 119.5 | 222.6 | 220.9 | 222.0 | 20 |
| Power laundries . . . . . . . . . . . . | 109.6 | 110.2 | 112.8 | 109.9 | 208.2 | 203.9 | 210.3 | 18 |
| Cleaning and dyeing . . . . . . . . . . | 118.6 | 117.4 | 123.4 | 125.6 | 220.7 | 208.9 | 228.2 | 22 |

Table IV.—*Total Working Population, Males and Females, Great Brita Aug. 1947 and Sept. 1946*

| | Aug. 1947 | Sept. |
|---|---|---|
| Total working population excluding indoor, private domestic service | | |
| Males . . . . . . . . . . . . . . . . . . . . . . | 14,426,000 | 14,59 |
| Females . . . . . . . . . . . . . . . . . . . . . | 5,720,000 | 5,80 |
| Total . . . . . . . . . . . . . . . . . . . . | 20,146,000 | 20,40 |
| Ex-members, His Majesty's forces, unemployed . . . . . . | 135,000 | 49 |
| Insured persons registered as unemployed . . . . . . . | 242,000 | 35 |
| In His Majesty's forces, national fire service, police and industry | | |
| Males . . . . . . . . . . . . . . . . . . . . . . | 14,116,000 | 13,85 |
| Females . . . . . . . . . . . . . . . . . . . . . | 5,653,000 | 5,70 |
| Total . . . . . . . . . . . . . . . . . . . . | 19,769,000 | 19,55 |

**Great Britain.**—The total working population of G Britain increased from 19,750,000 in mid-1939 to 21,337,00 Sept. 1945 and decreased to 20,402,000 by Sept. 1946, as i cated in Table IV.

**Canada.**—The general employment index (1947=100) a aged 151.8 for 1946 and 158.3 for the first quarter of 1947

**South Africa, Union of.**—The South Africa general emp ment index (1937=100) averaged 124.5 for 1946 and 127. March 1947.

**Australia.**—The employment index (1937=100) avera 109.8 for 1946 and averaged 124.1 for the first quarter of 1

**South America.**—Argentina's statistics of industrial empl ment (1937=100) averaged 136.9 in 1946 and 142.9 the 2 months of 1947. Little change occurred in the index of Arg tine employment throughout 1942–46. The index for C

Table V.—*Supply, Distribution by Industries of Labour, Great Britain: Aug. 1947, March 1947, Sept. 1946*

| Number employed in industry | Aug. 1947 | March 1947 | Sept. |
|---|---|---|---|
| Manufacturing of equipment and supplies for armed forces . . . . . . . . . . . . | 5,486,000 | 440,000 | 530 |
| Manufacturing for home market . . . . . . | | 5,066,000 | 4,905 |
| Manufacturing for export . . . . . . . . | 1,580,000 | 1,468,000 | 1,410 |
| Total manufacturing industries . . . . . . | 7,066,000 | 6,974,000 | 6,845 |
| Basic industries and services . . . . . . . | 5,622,000 | 5,583,000 | 5,531 |
| Building and civil engineering . . . . . . | 1,321,000 | 1,210,000 | 1,240 |
| Distributive trades . . . . . . . . . . . | 2,333,000 | 2,297,000 | 2,254 |
| Other services . . . . . . . . . . . . . | 2,094,000 | 1,979,000 | 1,938 |
| Total in industry . . . . . . . . . . . | 18,436,000 | 18,043,000 | 17,808 |
| Civil defense, national fire service and police . | 91,000 | 91,000 | 88 |
| Armed forces and auxiliary services . . . . | 1,242,000 | 1,401,000 | 1,657 |
| Total (of above) . . . . . . . . . . . | 19,769,000 | 19,535,000 | 19,553 |
| Ex-members, His Majesty's forces, unemployed | 135,000 | 105,000 | 490 |
| Insured persons registered as unemployed . . | 242,000 | 560,000 | 359 |
| Total working population (exclusive of indoor, private domestic service) . . . . . . . | 20,146,000 | 20,200,000 | 20,402 |

(1937=100) was 134.8 for 1946 and 137.6 the first two months of 1947.

**Norway.**—Norway's industrial employment index for 1946 was 111.0 (1937=100) and during the first 5 months of 1947 averaged 120.8, with a high in May 1947 of 123.0.

**Sweden.**—The Swedish index of industrial employment (1937=100) was 117.4 in 1946 and 119.4 the first four months of 1947.

**Switzerland.**—The Swiss index (1937=100) was 122.9 in 1946, the highest level of employment in Switzerland after 1938. It was 130.0 in March 1947.

None of the other countries in Europe published employment statistics in 1946–47. (D. D. L.)

## Endocrinology.

During 1947 evidence accumulated which shook the foundations of two well-established concepts in endocrinology. The first postulated that the hormone elaborated by a gland, while it influences the maintenance, growth and function of other organs, does not directly affect the gland from which it originates. Indirect effects are, of course, possible in the case of those glands under the control of the anterior pituitary, by "suppression" of the corresponding trophic hormone of the latter. The second concept was that the intermediation of an endocrine gland in a given physiological mechanism, may be adduced from the fact that the mechanism no longer operates after the gland is removed.

In the laboratories of P. E. Smith and H. M. Evans in the United States, and of S. E. de Jongh in the Netherlands, it was shown that the sex steroids have some direct influence on the structure and function of their parent glands, the gonads. Testosterone completely prevented testicular atrophy and preserved normal spermatogenesis in rats from which the hypophysis was removed. In combination with gonadotrophic hormones, in amounts which were without effect by themselves, testosterone actually stimulated growth of the testis. Implantation of testosterone pellets into the testis of a monkey from which the hypophysis was removed resulted in tubular development with sperm formation, in a circular area surrounding each pellet. The anterior pituitary gland therefore initiates testicular development and testosterone secretion; testosterone itself acts locally to further growth and spermatogenesis.

A similar, though somewhat more complicated, picture emerged from the work on the relation of the sex steroids to the structure and function of the ovary. The estrone elaborated by the growing ovarian follicle was shown to cause further growth and maturation of the theca and granulosa cells of the follicle. But in addition it was demonstrated that the so-called male sex hormone, testosterone, exerted a specific effect by leading to the development of a small blood vessel at the point where rupture of the follicle occurs at the time of ovulation. From these observations, and from those on the testis, it seemed probable that the sex steroids secreted by the gonads act locally to link the primary effects of the gonadotrophic hormones with certain secondary effects in the gonads themselves.

With regard to the conclusions drawn from the results of gland removal, a number of different lines of evidence were reported, all pointing to the same reservation. Thus, the administration to normal rats of large doses of a synthetic estrogen, stilbestrol, had been shown to result in the diabetic syndrome. This did not occur in adrenalectomized rats, from which it had been concluded that the effect depended on a stimulation of the adrenal cortex by the stilbestrol. However, D. J. Ingle showed that adrenalectomized rats given maintenance doses of adrenal cortical extract, still responded to stilbestrol administration as did normal rats. Obviously, therefore, the diabetogenic effect of stilbestrol could not be mediated by the adrenal cortex.

One of the consequences of general bodily injury such as burns and fractures is an accelerated breakdown of tissues and therefore an increased nitrogen excretion in the urine. This is a feature of the so-called "alarm reaction" which does not occur in the absence of the adrenal glands. From this it had been concluded that the increased protein breakdown which accompanied the alarm reaction was a consequence of excess activity of the adrenal cortex. However, Ingle demonstrated that adrenalectomized animals maintained on adrenal cortical extracts did respond to a fracture with an increased breakdown of tissue protein in a manner similar to intact normal animals, despite absence of the adrenal glands.

Similarly, it was shown that adrenaline did not affect the blood pressure in the absence of the thyroid gland. But when thyroidectomized animals were maintained on thyroid extract, adrenaline exerted its usual pressor effect. Apparently, therefore, it is necessary to distinguish between physiological mechanisms which are mediated by an endocrine gland, and others which are not so mediated but require the presence of the hormone of that gland. Much previous work would have to be re-evaluated with this distinction in mind.

**Thyroid.**—Studies on the action of the thiouracil group of drugs, and of the uptake of labelled iodine by the thyroid, led to a clearer understanding of thyroxine synthesis and pituitary activity. The work of R. W. Rawson, A. Albert and associates, and of S. Dvoskin and others showed that the thyrotrophic hormone of the pituitary is a protein which is hormonally active when its sulphur groups are in the reduced state. It can be inactivated by oxidizing these -SH groups. Iodine owes part of its antithyroid activity to its property as an oxidizing agent causing partial inactivation of the thyrotrophic hormone. Thiouracil reactivates this factor and was shown to enhance the activity of the thyrotrophic hormone.

The thyroid gland had of course been shown to have the ability to concentrate iodine. Iodine in the form of iodide ($I^-$) is taken up by the thyroid and is there converted to elemental iodine ($I_2$). This is the first step in the elaboration of the hormone and is the step which is blocked by thiouracil. On the other hand thiocyanate was found to produce goitre by blocking the ability of the gland to concentrate the iodide. Since it had been known for some time that the reactions of tyrosine with iodine to form thyroxine occur nonenzymatically in vitro, it had to be concluded that the oxidation of iodide to iodine ($I^- \rightarrow I_2$) is the essential and specific function of the thyroid gland. In line with this conclusion Dvoskin showed that the injection of elemental iodine into normal and thyroidectomized rats and chicks gave effects similar to those produced by thyroxine while sodium iodide gave only slight evidence of such activity.

**Adrenal Cortex.**—The increased metabolism of protein caused by the administration of the thyroid hormone had been known for many years. Later it had been established that some of the steroid hormones of the adrenal cortex caused an increased breakdown of protein from the tissues. The relation between the actions of these two glands was studied by A. White and T. F. Dougherty. They demonstrated that the adrenal cortex controlled the loss of protein from the lymphoid tissue throughout the body. In the absence of the adrenals no loss of nitrogen from the lymph tissues occurred even on prolonged starvation. The liver nitrogen loss was diminished but the loss from the rest of the body was not inhibited by adrenalectomy. On the other hand the thyroid gland seemed to control, in the main, protein mobilization from muscle and had no influence on the loss of nitrogen from the lymphoid tissues.

These findings served to emphasize the fact that hormonal action may be tissue specific, and that the final result of the action of two glands may appear to be similar (increased protein breakdown) even though the specific actions are on different tissues.

It had been known for some years that the adrenal cortex secretes a large variety of steroids possessing different types of activity. These actions may be grouped into three categories; the metabolic, the salt and water retaining and the sex-active. When the pituitary is removed from an animal the adrenal cortex atrophies but this atrophy does not affect all the cell layers of the cortex equally. The outermost or glomerular layer does not shrink. Such an animal also does not show the disturbances of salt and water balance exhibited by the adrenalectomized animal. It was postulated therefore that this outer zone of the cortex elaborates the salt retaining steroid hormones. R. O. Greep and H. W. Deane added further proof that the separate zones of the adrenal cortex probably subserve the different functions. From their work and that of others it could be deduced that the outer zone produces the salt retaining hormones, the middle zone the metabolically active steroids and the innermost zone the sex-active principles of the adrenal. (*See* also PHYSIOLOGY; ZOOLOGY.)

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**England:** *see* GREAT BRITAIN & NORTHERN IRELAND, UNITED KINGDOM OF.

## English Literature.

The year 1947 was one of rediscovery and reassessment in which new work tended to be overshadowed by new editions not only of standard authors but also of such Victorian and Edwardian writers as Mrs. Elizabeth Gaskell, George Gissing, Henry James, Arthur Morrison, W. W. Jacobs and Joseph Conrad. Nevertheless, despite the various production difficulties that hampered publishers, a number of noteworthy new books appeared.

**Fiction.**—Of the better known novelists only Charles Morgan, whose *The Judge's Story* was received with the usual mixed opinions, John Masefield, with *Badon Parchments*, and Michael Sadleir, with *Forlorn Sunset*, were represented. The most important novel of the year was perhaps L. P. Hartley's *Eustace and Hilda*, the concluding book of his Eustachian trilogy. I. Compton-Burnett produced a characteristic novel in *Manservants and Maidservants*, and Hester Chapman showed her customary wit and insight into character in *World's Apart*. Evelyn Waugh published a short novel, *Scott-King's Modern Europe*. Nigel Balchin's experiment in technique, *Lord, I was Afraid*, was generally considered unsuccessful. T. H. White, Patrick Hamilton, H. E. Bates and Bruce Marshall enhanced their reputations with *Mistress Masham's Repose*, *The Slaves of Solitude*, *The Purple Plain* and *The Red Danube*, respectively. Outstanding among the work of the younger novelists were P. H. Newby's *Agents and Witnesses*, though it was thought scarcely to live up to his earlier promise, J. Maclaren-Ross's *Of Love and Hunger*, Dan Davin's novel of the war in the western desert, *For the Rest of Our Lives*, Chun-Chan Yeh's *A Mountain Village*, Elizabeth Taylor's *A View of the Harbour* and Jon Godden's *The House by the Sea*. Philip Toynbee's *Tea With Mrs. Goodm* symbolic work with affinities to *The Waves* and *The* *Land*, was probably the year's most ambitious novel.

Several very good volumes of short stories appeared, in ticular Somerset Maugham's *Creatures of Circumstance*, O'Faoláin's *Teresa*, Frank O'Connor's *The Common Chord*, Coppard's *The Dark-Eyed Lady*, Graham Greene's *Nin* *Stories*, Viola Meynell's *First Love* and R. K. Narayan' *Astrologer's Day*. *Innocents*, by a new writer, A. L. Ba was very highly praised.

**Poetry.**—Again the older poets produced the most d guished work: Walter de la Mare with *The Traveller*, V Turner (died Nov. 1946), with *Fossils of a Future Ti* Andrew Young with *The Green Man* and Edith Sitwell *The Shadow of Cain*. Siegfried Sassoon and Herbert Read lished collected volumes of their verse. Of the middle ge tion of poets, Louis MacNeice published his verse play radio *The Dark Tower*, Stephen Spender *Poems of Dedica* Kathleen Raine *Living in Time* and A. J. S. Tessimond *V* *in a Giant City;* while Rayner Heppenstall assembled the of a decade in *Poems, 1933–1945*. The work of younger wr that attracted notice included Bernard Gutteridge's *The Tra ler's Eye*, Bernard Spencer's *The Aegean Isles*, John He Stubbs's *The Divided Ways*, John Short's *The Oak and the* Hal Summers' *The Hinterland*, Anthony Rye's *The Inn of E* and Alan Ross's *The Derelict Day*.

**Literary Criticism.**—The outstanding books were prob C. Day Lewis' *The Poetic Image* and A. M. D. Hughes' *Nascent Mind of Shelley*. Wilson Knight continued his Sh spearean studies with *The Crown of Life*, and valuable work Milton was done by T. S. Eliot in his British academy lect B. Rajan in *"Paradise Lost" and the Seventeenth Cent Reader* and A. J. A. Waldock in *"Paradise Lost" and Its Cri* The author's name was enough to testify to the importance Ernest de Selincourt's *Wordsworthian and Other Studies*. R ert Liddell's *A Treatise on the Novel* aroused much con versy among critics of fiction. W. P. Witcutt's *Blake, A Psyc logical Study*, pointed the way to a new interpretation of poet.

Important works of literary scholarship published inclu the final volumes of Gordon N. Ray's *Thackeray's Letters Private Papers* and Newman Ivy Peck's *Shelley*, both fr the U.S., and F. E. Hutchinson's *Henry Vaughan*. Geo Woodcock's *Godwin* was widely praised, as was Gerald Bulle *George Eliot*. Malcolm Elwin's *The First Romantics* was c sidered by many critics unjust to Wordsworth. Two much mired biographical studies of later writers were F. Britta *Arthur Quiller-Couch* and Percy Lubbock's *Portrait of Ed Wharton*.

**Biography and War Books.**—The leading historical bi raphy of the year was Carola Oman's *Nelson;* other works this genre were Maurice Ashley's *John Wildman* and H. C. F croft's *A Character of the Trimmer*. *The Diary of Henry Ho house* edited by A. Aspinall interested students of early 1 century affairs; while Sir Arthur Salter's *Personality in Polit* was a valuable study of figures in modern politics.

Two memorable autobiographies were *But To What Purpos* by the veteran novelist and naturalist E. L. Grant Watson a *Autobiography* by Neville Cardus, containing reminiscences cricket, the *Manchester Guardian* and music. In a different ve was a quietly attractive autobiography *An Innocent Grows U* the life story of a country draper, Norman Hancock.

War books continued to be published in considerable nu bers. Few possessed literary merit. Among those that did we H. R. Trevor-Roper's *The Last Days of Hitler;* the journa and poems of Keith Douglas, a promising young poet killed

Tunisia, entitled *Alamein to Zem Zem;* Basil Davidson's *Parti-an Picture;* Christie Lawrence's *Irregular Adventure;* and Geoffrey Cox's account of the exploits of the 2nd New Zealand division, *The Road to Trieste.* Among the year's travel books, James Pope-Hennessy's *America Is An Atmosphere* and Arthur Calder-Marshall's account of Yugoslavia under Tito, *The Watershed,* must be mentioned.

Two books not easily classifiable must not be forgotten: *A Free House,* the collected art criticism of Walter Richard Sickert edited by Sir Osbert Sitwell, who also contributed a characteristically graceful memoir of the painter, and Sacheverell Sitwell's evocation of a number of subjects of ancient and modern art, *The Hunters and the Hunted.*

(*See* also American Literature; Book Publishing.)

(W. E. An.)

## Entomology.

The chief emphasis in entomology during 1947 was still on insecticides. The impetus of war research for new and more effective means of controlling noxious insects continued unabated, and many new and promising insecticides continued to appear. There had been so many of these that complete experimental testing and proving could not be accomplished by all available resources of manufacturers, federal government, state, county, city and privately-trained entomologists, toxicologists, parasitologists and all others charged with insect control relating to agriculture, forestry and public health. Although many believed that DDT would solve all entomological problems, it was soon discovered that many insects, as well as mites, were neither killed nor injured by this chemical. In fact, mites and certain scale insects and aphids even appeared to increase following application of DDT wettable and dry powders. In the case of sprays prepared from DDT, it appeared that the oil solvents afforded the only control factor for some species of aphids and scale insects.

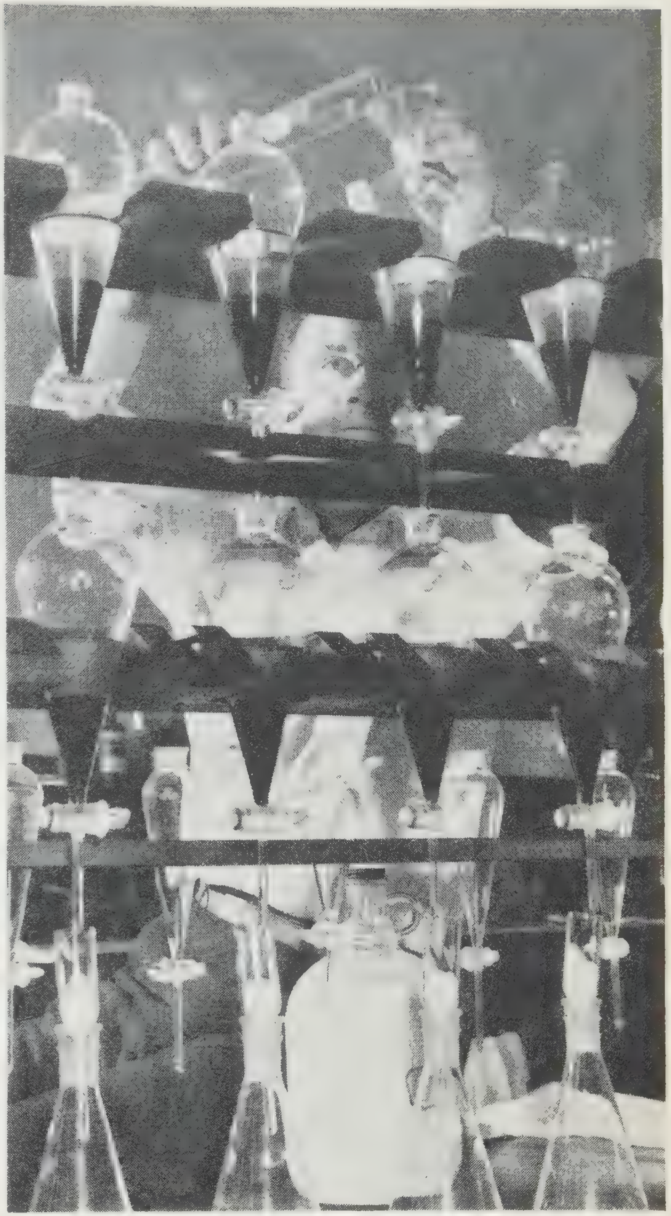
**Supply and Research.**—During 1947 the dominant insecticide, DDT, was available in sufficient quantities to supply all needs. There was accordingly a noticeable diminution in the use of arsenate of lead, calcium arsenate, cryolite and other normally basic poisons. Nicotine products were not wholly adequate, and there were shortages in some other commodities. In the main, insect control was not greatly hampered by lack of suitable and efficient insecticides.

The manufacture of DDT had developed so rapidly that by 1947 the 16 important manufacturers were capable of supplying 100,000,000 lb. a year. It was generally believed that this large amount could not be absorbed in the domestic market and that export demand was not sufficient to utilize it. Manufacture, therefore, was likely to be curtailed. Newer and more effective insecticides might also cause a rapid decline in production. According to the U.S. department of agriculture, bureau of entomology and plant quarantine, more than 1,000 separate publications on DDT had appeared since 1943.

The effects of DDT dusts on alfalfa-pollinating bees was an important research problem in a number of western states. Many beekeepers believed that the application of DDT dusts had killed excessive numbers of honeybees, whereas others claimed that there had been no serious damage and that the effectiveness of the dusts in controlling lygus bugs (thereby prolonging the blooming season of alfalfa) had greatly increased the honey flow.

Calcium arsenate to the amount of 36,400,000 lb. was made available for the control of insects during 1947. This amount was less than normally used in past years.

**Other New Insecticides.**—Benzene hexachloride (BHC): 4 lb. of 50% BHC to 100 gal. of water for cattle lice, hog mange, hog lice, chicken lice, stable flies, houseflies; $\frac{1}{2}$ lb. of 50% BHC to 1 gal. water for spraying horses and mules.



CHEMIST analyzing milk from cows fed on crops sprayed with insecticides which were being tested by U.S. department of agriculture entomologists in 1947

Marlate methoxychlor: $\frac{1}{40}$ as toxic to animals as DDT; for insects on fruits and vegetables.

Piperonyl butoxide: for household and field use (flies, cockroaches, Mexican bean beetle, aphids, leaf hoppers, fruit flies [adults]). In fly sprays with aerosols. Residual effectiveness—several months. Spray or dusts with pyrethrins.

3422–0,0-diethylo-p-nitrophenol thiophosphate: another German insecticide developed before or during World War II, first manufactured in the U.S. and offered for experimental purposes by the American Cyanamid company as 3422. It is a yellow liquid; boiling point 375° C., at 760 mm.; refractive index at 25° C. of 1.5360; specific gravity 1.26; soluble in water only to the extent of 20 p.p.m.; completely miscible with esters, alcohols, ketones, ethers, aromatic and alkylated aromatic hydrocarbons; practically insoluble in such petroleum hydrocarbons as petroleum ether, kerosene and refined spray oils. Combatable with wettable sulphurs and "neutral coppers." Used to control (as dusts or sprays 0.05% to 0.1% to 0.25%) bean aphis, confused flour beetle, Mexican bean beetle, greenhouse red spider, German cockroach. Hazardous to warm-blooded animals (by oral administration).

Soil fumigants: DD for wireworms and other soil insects; ethylene dibromide for wireworms and other soil insects; ethylene dichloride for peach tree borer, larvae of Japanese beetle; propylene dichloride for peach tree borer; hexachlorocyclohexane for soil insects; DDT for larvae of Japanese beetle, wireworms, larvae of pear thrips; chlordane for wireworms and other soil insects and ants.

**Spread and Control of Insects.**—The Pacific mite, *Tetranychus pacificus* (McGregor), was more abundant on apples in the Yakima section of Washington than ever before. This increase was attributed, in part at least, to the general use of DDT for codling-moth control, although a mild winter may have benefitted overwintering populations of the mite.

The carrot weevil, *Listronotus oregonensis* (Lec.), a western insect, appeared to be a much more serious pest in Georgia, where it caused serious damage to parsnips during the fall.

The plum curculio, *Conotrachelus nenuphar* (Herbst), was unusually abundant in the peach belts in a number of the U.S. southern states during May.

DDT provided excellent control over codling moths on apples, pears and walnuts. In many instances, however, there was a marked build-up of aphids, scale insects and mites. The control of the gypsy and browntail moths with very small quantities of DDT had been so phenomenal and so inexpensive that it was found cheaper to apply the dust than to make an inspection to determine the exact status of the insects in suspected infestations.

The control of the fir tussock moth, *Hemerocampa pseudotsuga* (McDunnough), in the Douglas fir forests of Idaho by aeroplane was very successful. Approximately 413,000 ac. were treated at a cost of $1.29 per acre.

The pecan nut casebearer, *Acrobasis caryae* (Grote), extremely injurious in Texas during 1946, was given various treatments of arsenate-nicotine sulphate-summer oil and DDT in an effort to secure effective control. About 200,000 trees were sprayed.

The corn ear worm, *Heliothis armigera* (Hbn.), was rapidly becoming the most destructive insect throughout the United States. It had become a pest of major importance on corn, sorghum, tomatoes, cotton, peanuts, soybeans, vetch, alfalfa, beans and other crops.

Spread of the European apple sawfly, *Hoplocampa testudinea* (Klug), from Long Island to Rockland county, N.Y., was reported in June 1947.

It was estimated in 1947 that the ox warble fly or common cattle grub, *Hypoderma lineata* (De Vill.), had caused an estimated $100,000,000 annual loss in the U.S.

Dr. E. T. Cotton, entomologist of the U.S. department of agriculture, bureau of entomology and plant quarantine reported to the United Nations Food and Agriculture organization in London that at least 5% of the cereal food produced in the world had been ruined each year in storage by insects.

Because of heavy losses of bees in Europe inflicted by the so-called Isle of Wight disease, the U.S. bureau of entomology and plant quarantine renewed quarantine restrictions to prevent the entry into the United States of queen and worker bees which might possibly carry the mite, *Acarapis woodi* (Renine), which inhabit the trachaea and thoracic muscles of the bees, causing death. The disease was first noted on the Isle of Wight, Eng., in 1904.

S. E. McGregor and C. T. Vorhies of Arizona reported that spraying of large cotton areas by plane with dust containing 10% DDT in pyrophyllite, at the ratio of 15 lb. per ac., 5% DDT in sulphur at 20 lb. per ac., or spray containing 1½ to 3 lb. of DDT dissolved in xylene per acre, was not damaging to commercial beekeeping.

Mosquito abatement districts were organized extensivel California and many other parts of the United States. The use of DDT, applied mostly as an aerosol from the exhau an automobile or truck, seemed likely to cause some se complications to wildlife and to insect control in general; such methods might kill not only injurious but beneficial in and other small forms of land and aquatic life.

A new federal insecticide, fungicide and rodenticide act passed during 1947, and an open hearing on the act was he Washington, D.C., on Aug. 25, 1947.

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(E. O.

**Entomology and Plant Quarantine, Bureau of:** *see* ricultural Research Administration.

**Enzymes:** *see* Biochemistry.

## Epidemics.

The great pandemic of diphtheria began to cede in 1947. This vast outbreak, which b in Germany in the mid–'30s spread to all Europe with the i sion of the German armies. The increase was also reflecte most parts of the temperate zones. England, because of gre increased immunization against diphtheria, was spared enti and Canada also escaped. A definite but relatively slight crease in cases and deaths occurred in the United States in and 1946 but had also declined by early 1947.

After an absence of nearly half a century, cholera reappe in Egypt in 1947, being first noted in El Kurein in Shar province in late September. The disease spread rapidly, within two months had caused more than 10,000 deaths. year's end, the disease seemed to be under control in Egypt, had spread to Syria.

Infantile paralysis (*q.v.*) was highly prevalent throug much of Europe. The intensity of the outbreak in England Wales was far greater than any previously reported. Berlin experienced a severe epidemic. The disease had reached a ord high in the United States in 1946, but was of normal pro tions during 1947, although the incidence was higher in than in any previous season. Poliomyelitis approached epide proportions in Illinois late in the year but appeared atypica to age incidence, frequency of encephalitis and infrequenc permanent paralysis.

The outbreak of influenza A which had been predicted for winter season, 1946–47, appeared in the late winter and sp of 1947. It was quickly found that immunization by avail virus vaccines bestowed relatively little protection. Further vestigation demonstrated that the prevailing virus, although lated to the previously recognized strains of influenza A, antigenically not identical and that cross protection was not forded. The later strain was incorporated into virus vaccine

Virulent smallpox was introduced into New York city f Mexico after a complete absence of all forms of the malady seven years. Only 12 cases resulted. In the course of less t a month, approximately 7,000,000 persons of all ages v vaccinated. No deaths resulted from postvaccinal encepha or tetanus; however, five eczematous infants and children had not themselves been vaccinated but who were familial tacts of vaccinated persons developed inoculation vaccinia died. Numerous nonfatal instances of this same accident v observed. (*See* also Bacteriology; Entomology; Federal curity Agency; Public Health Services; Vener Diseases.)

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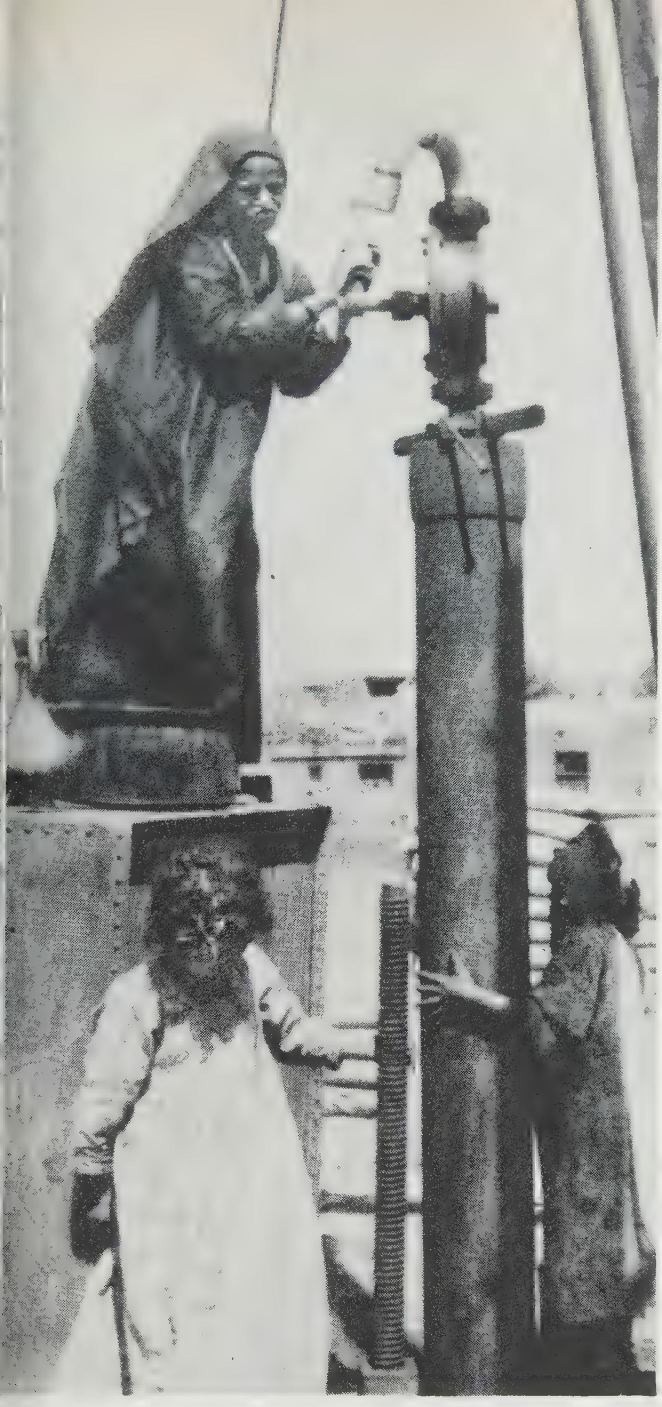

EGYPTIANS FILTERING WATER from a contaminated canal near Cairo during widespread epidemic of cholera in 1947. Deaths totalled more than 6,000 for he months of September and October

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**Episcopal Church:** *see* PROTESTANT EPISCOPAL CHURCH.

**Eritrea:** *see* ITALIAN COLONIAL EMPIRE.

## Estonia.

One of the Baltic states of northeastern Europe, north of Latvia, south of Finland, 16th republic of he U.S.S.R. Area, 18,357 sq.mi.; pop. (est. 1939) 1,122,000. Chief towns: Tallinn (capital, 146,400); Tartu (60,100); Narva (24,200); Nomme (19,700); Pärnu (21,500). Language, Estonian, a Finno-Ugrian tongue. Religion, Christian (Lutheran 8%, Greek Orthodox 19%). Chairman of the council of ministers: A. Veimer.

**History.**—Estonian independence was less than 20 years old when the U.S.S.R. demanded and obtained a privileged strategic position therein (Sept. 29, 1939). By June 1940, soviet forces had occupied the land, and in July a plebiscite approved annexation to the U.S.S.R. as the 16th constituent republic. From 1941 to 1944 the Germans held the country as a conquered province, but in the fall of 1944, the Russians reconquered Estonia and re-established the regime of 1940–41.

Through the whole period from 1939 to 1947 some Estonian diplomats remained at their posts abroad, and both Britain and the U.S. continued to recognize them, and to ignore the actual control established by the Russians. The United Nations closed its eyes and ears to the problem. In May 1947 the British took the first step in breaking the anomalous situation: they announced recognition *de facto* of the soviet administration. Great Britain still withheld recognition *de jure,* and the U.S. sat tight. The independently functioning International Postal union at its meeting in Paris in May maintained that the three Baltic countries were under Russian domination and therefore rejected the U.S.S.R. request for separate memberships for them.

Small refugee groups continued to escape out of Estonia across to Sweden and occasionally from there on to the United States where they received an illegal hospitality. Part of those who had arrived in 1946 were granted permanent visas, but the others had to wait for immigration quota vacancies. One group of 23 landed at Savannah, Ga., in September, just ahead of the hurricane. They had traversed the Atlantic in a 43-ft. sailboat. Another party of eight, including two babies, landed at Miami, Fla., on Oct. 1. They had a 40-ft. yacht in which they had come 5,000 mi. from Gothenburg, Sweden. Still others were reported on the way, sometimes stopping in England or Spain en route. About 1,400 Baltic refugees were still in Sweden.

Meantime, the soviet authorities were deporting large numbers of Estonians (and also Latvians and Lithuanians) into a vast Russian interior, and turning over their properties to Russians. Particularly were the political and intelligentsia elements transported. Thus, the Russians hoped to destroy the national spirit and create a more loyal communist society. Collectivization hardly affected Estonia during the war years. The small peasant proprietorships established by the land reforms of the 1920s had already broken up the great estates. But in 1947 conditions were at last felt to be favourable enough for more far-reaching measures, and the first collective farms were organized in Estonia. (F. D. S.)

## Etching.

In spite of unsettled political and social conditions existing throughout the civilized world in 1947, the second postwar year, those in the field of the graphic arts in general and of etching in particular much more nearly approached normal activity than at any time after the beginning of World War II.

After its beginnings and its first great period of achievement in Germany and the Low Countries in the 16th century, etching as a medium of creative art expression was centred in Italy in the 18th, in France in the 19th and in England and the United States in the 20th century. With the advent in the last named country of so many artists from other lands after World War II, and with the greater opportunities and better economic conditions existing there, it was natural that the U.S. should be the centre of productivity in 1947.

Because of the exacting and highly technical nature of the medium, etching was slower to be influenced by so-called modern art than were either painting or sculpture. In 1947 there was a marked increase in the number of etchers working in this idiom in the U.S., with the greatest activity among the followers of Stanley W. Hayter in the east, Mauricio Lasansky in the west and Ernest Freed in the south. Interesting experiments were carried on by these artists in the combination of etching with other intaglio and relief forms of printmaking, in both monochrome and colour.

A number of new print societies were founded in the U.S. in 1947, and the long established ones maintained their usual exhibitions and other activities. Chief among the latter were the Society of American Etchers, Gravers, Lithographers, and Woodcutters (formerly the Society of American Etchers, now enlarged to include workers in the relief and planographic media) whose annual exhibition of 658 exhibits was the largest and most comprehensive print showing ever held in the U.S.; the Chicago Society of Etchers, the Print Makers Society of California, the Northwest Printmakers, the California Society of Etchers and the Prairie Print Makers. In all their exhibitions there was a general trend toward strictly traditional and purely abstract subject matter, with less emphasis than in immediately preceding years on social consciousness and war. Much was done by these societies toward developing a general interest in, and appreciation of, prints on the part of the public by travelling exhibitions, public demonstrations of print making and lectures. In addition, many of the most important museums throughout the country held frequent print exhibitions, both general and specialized, and the Library of Congress conducted its Fifth National Exhibition of Prints, one of the two most important of the year.

Among American etchers who published work in 1947 were Isabel Bishop, Hugh Botts, Paul Cadmus, Federico Castellon, John E. Costigan, Stephen Csoka, Ralph Fabri, Ernest Freed, Isac Friedlander, Sue Fuller, Douglas W. Gorsline, Joseph H. Heil, Arthur W. Heintzelman, Eugene Higgins, Irwin D. Hoffman, E. T. Hurley, Max Jaediker, Gene Kloss, Armin Landeck, Mauricio Lasansky, Luigi Lucioni, Roi Partridge, Martin Petersen, Louis C. Rosenberg, Carl M. Schultheiss, William Sharp and George H. Wright.

Least affected by the modern movement, the great traditions of the English school of etching were ably carried on in 1947 by W. D. Brokman Davis, R. Stanley G. Dent, H. Andrew Freeth, Anthony Gross, Martin Hardie, Jean Harper, Lawrence Josset, Sydney Lee, Gwen May, Malcolm Osborne, Russell Reeve, W. P. Robins, D. I. Smart, Robert Spence, C. H. Spencer, Sara Sproule, Robin Tanner, C. W. Taylor, Eric Taylor, E. Heber Thompson, Murray M. Tod and Leslie M. Ward. Principal exhil societies in which etchers took a prominent part were Royal academy and the Royal Society of Painter-Etchers Engravers.

The year 1947 marked a great renewal of activity a French etchers and etching societies. In spite of the turb postwar conditions prevailing there, the indomitable Galli spirit found free expression in the etched line on the part host of artists. Although no figure arose to challenge the st of the 19th century masters and such as Théophile Alexa Steinlen and Jean Louis Forain who bridged the gap betwe and the 20th century, many etchers produced work of standing quality. Throughout history the French tempera has been sympathetic to the graphic media and some of greatest artists of France have made etching completely own. Among the older recognized leaders who continue work in 1947 were Yves Alix, Maurice Asselin, Adolphe B- frère, Jacques Beurdeley, Robert Bonfils, Jacques Boull,

"FATHERLESS," by Stephen Csoka, one of the three prize-winning etc of the second annual national print competition conducted by the Asso American Artists during the summer of 1947

an Frelaut, Demetrius Galanis, Pierre-Louis Moreau, Pablo-uiz Picasso, Alexandre Urbain, Henri Vergé-Sarrat, Jacques illon and Henri de Waroquier, while of the more recent group gnificant contributions were made by Alain Bastien, Jean ersier, Richard Brunck de Freundeck, Robert and Mme. Cami, ichel Ciry, Eugene Corneau, René Cottet, Pierre Dubreuil, aoul Dufy, Marcel Gromaire, Andre Jacquemin and Pierre-ves Tremois.

A small but active group of etchers upheld the traditions of e art under the aegis of the Society of Canadian Painter-tchers and Engravers. Among them were David J. L. Ander-n, Robert W. Annand, George di Carlo, Nicholas Hornyansky, Mackinnon-Pearson, W. K. Peacock, Harry D. Wallace and . J. Wood.

Outside of the countries named above little of importance was oduced in etching in 1947, although a few artists employed the edium in Sweden, Italy and the South American republics.

(J. T. Ar.)

## thical Culture Movement.

A religious and educational movement emphasizing the ntrality of ethics in human relations, started in New York ty in 1876 by Felix Adler and established ten years later in ondon by Stanton Coit. In 1947 societies were active in New ork city, Westchester, N.Y., Brooklyn, N.Y., Philadelphia, Pa., . Louis, Mo., Chicago, Ill., and Washington, D.C., and groups ere meeting regularly in Los Angeles, Calif., and New Jersey. here were four societies meeting in London and one in Birming-am, England.

The Ethical Culture societies conduct Sunday and weekday ervices and a variety of educational and community activities. niversity Settlement, in New York city, the first neighbour-ood house in the United States, was an enterprise of the move-ent, as were Hudson Guild and Madison House in New York ty and similar undertakings in other cities. The movement as also responsible for significant efforts in child labour re-orm, visiting nurse associations, legal aid societies, housing, ace relations, child study and progressive education. Leaders the various societies perform functions analogous to minis-ers in other religions, officiating at naming ceremonies, mar-ages and funerals.

The English and U.S. societies devoted themselves to train-g of youth for democratic citizenship, spearheaded in the U.S. y a six-weeks' Encampment for Citizenship. This encampment, eld for the second successive year at the Fieldston school of e Ethical Culture schools in New York city, brought together oung people of diverse religious, national, economic and edu-ational backgrounds from all parts of the country, and was evoted to intensive study and discussion of key problems and echniques of democratic living. During the year, the societies xpanded their programs in adult education. The movement o-operated with others in opposition to the teaching of religion the public schools and to released time for religious educa-ion. It also was instrumental in clarifying and liberalizing rocedures for the adoption of children. A week of institutes ealing with problems of segregation highlighted its continuing fforts in the field of intergroup and interracial relations.

Exposition of the movement's principles was to be found in elix Adler's *An Ethical Philosophy of Life,* David Saville uzzey's *Ethical Religion* and Horace J. Bridges' *Some Aspects f Ethical Religion. The Standard,* edited by Gideon Chagy, as published each month at 2 West 64th St., New York 23, .Y. The American Ethical union, in whose presidency Robert . Kohn was succeeded by James G. White in 1947, had offices t the same address. The offices of the English Ethical union, f which Sir Richard Gregory, F.R.S., is president, and H. J. Blackham executive secretary (1947), were at 4A Inverness Terrace, London W2.

(J. Nn.)

## Ethiopia.

A kingdom of northeast Africa. Area: *c.* 350,000 sq.mi.; pop. (est. Dec. 31, 1939): 7,000,000; cap. Addis Ababa; religion: Christian (Alexandrine) and Mohammedan; languages: Amharic, also Arabic, Gueze, Tigre, Tigriña, Galla, Somali, etc.; ruler: Emperor Haile Selassie I.

**History.**—There was considerable economic progress in 1947. A merchant marine was inaugurated with "The Adulis," named after the ancient Ethiopian port. Ethiopian air lines (passenger, freight and mail) extended internally to all 12 provinces, externally to Asmara, Erit.; Djibouti, Fr.Somlnd.; Aden, Aden; Khartoum, A.-E.Sud.; Jidda, Saud.Arab.; Cairo, Egy.; Nairobi, Kenya. An aviation school, a motorboat service on Lake Tana and more long-distance motorbus services were inaugurated. New roads and bridges over the Takazze and Gogeb rivers were built, and restoration of the historic Gondar castles was undertaken. Work began on Sir Patrick Abercrombie's plan for Addis Ababa, and at the same time main sewerage was inaugurated, and the water mains extended.

The state bank opened eight additional branches in Addis Ababa, the provinces and Djibouti, Fr.Somlnd. The new currency reached a cumulative issue of Ethiopian $53,384,200 in January. (Exchange rate: 2.424 Eth.$=$1.00 U.S.; 10 Eth.$=£1).

The annual exhibition revealed advances in agriculture and industry. Silk manufacture and several new exports were undertaken, while prize cattle, sheep and poultry were imported from the U.S. to improve Ethiopian breeds. Trade with Great Britain during the first eight months of 1947 reached the following figures: imports, £654,508; exports, £66,128.

Revenue during 1946–47 was approximately £5,000,000. Not counting expenditure by government departments, post office, bank, army, etc., on education and foreign scholarships for their employees, or church-maintained schools (with 50,000 pupils), the board of education budget was £8,107,639 for government schools, with 35,763 boys, 4,180 girls and 13,078 teachers. Examination began for London university matriculation in Ethiopian schools, also preparatory training in law, public health, midwifery and nursing. Education was free, only 3% of scholars contributing toward tuition and board. Prefabricated schoolhouses were mass-produced in Addis Ababa for provincial villages.

Ethiopia was represented at all United Nations conferences and on subsidiary bodies. An U.N.R.R.A. mission worked in Ethiopia from Jan. 1946 to June 1947 and contributed £130,000 in educational and agricultural equipment. Ethiopia declined a U.N. field survey to facilitate reconstruction, in favour of more recently liberated countries.

Ethiopia proposed an Anglo-Ethiopian treaty of friendship and commerce, its terms to include the withdrawal of the British military administration from the reserved area and Ogaden.

The emperor formally lodged Ethiopia's claim to the former Italian colonies, Eritrea and Somalia. Two hundred thousand Eritreans and a large body of Somalis residing in Ethiopia petitioned the U.N. Council of Foreign Ministers for reunion of these provinces to Ethiopia.

The empress presented her crown to the Church of the Holy Sepulchre in Jerusalem as a thank offering for Ethiopia's liberation.

(E. S. Pt.)

## European Recovery Program.

On June 5, 1947, in an address at the commencement exercises of Harvard university, Secretary of State George C. Marshall advanced the idea of a program of European self-help supported by U.S. assistance. His proposal of a comprehensive economic program proved to be a new starting-point in a large-scale effort of European reconstruction and in long-range U.S. policy towards postwar Europe.

After a further statement by Marshall on June 12 that both Great Britain and the U.S.S.R. were within the scope of the suggested program, the British and French governments announced their desire to co-operate, and separately invited the soviet government to consult with them. The soviet government accepted the invitation on June 22; its reply complained, however, of knowing nothing of the extent or terms of prospective U.S. aid.

The three-power conference of foreign ministers (Ernest Bevin of Britain, Georges Bidault of France and V. M. Molotov of the U.S.S.R.) held five sessions in Paris between June 27 and July 2. Molotov objected strongly to drafting a joint European program. Such a program, he asserted, would infringe upon the sovereignty of smaller states. Bidault's attempt to meet these objections was rejected by Molotov, who accused England and France of splitting Europe.

Upon soviet withdrawal from the still embryonic program Bevin and Bidault addressed an invitation to 22 European states, apart from Spain and the U.S.S.R., to consult on the formulation of a plan for European reconstruction. Almost until the conference assembled in Paris on July 12 there was uncertainty concerning the participation of the small states lying in the soviet sphere. On July 8 the Czechoslovak government formally accepted the invitation, then withdrew two days later. Poland, Finland, Hungary, Rumania, Yugoslavia, Bulgaria and Albania also declined. Fourteen countries accepted: Austria, Belgium, Denmark, Eire, Greece, Iceland, Italy, Luxembourg, The Netherlands, Norway, Portugal, Sweden, Switzerland and Turkey.

The conference, which met in Paris from July 12 to 15 with Bevin as chairman, appointed a 16-member Committee of Co-operation (later known as the Committee of European Economic Co-operation, or C.E.E.C.). In collating the various reports gathered during July and August, the Executive committee was dismayed to find that the total dollar deficit for 4 yrs. was estimated at $28,000,000,000, and that annual deficits in dollar exchange were expected to continue even after 1951. At a conference on Aug. 30, representatives of the U.S. department of state impressed upon the Executive committee the necessity for bridging the dollar deficit by the end of 1951, for promoting financial and monetary stability and freer trade, and for creating a continuing organ for supervision of the program.

These criticisms found their reflection in the final C.E.E.C. report of Sept. 22. As Europe's contribution to its reconstruction the two-volume report set forth elaborate goals of restored or increased production in all branches of the economy. It outlined steps necessary for financial and fiscal stability, and proposed means for promoting freer trade among the co-operating states. The report revised the estimate for the 4-yr. dollar deficit of the 16 countries, plus western Germany, to $19,330,000,000.

President Harry S. Truman on Oct. 23 summoned the U.S. congress to convene on Nov. 17 to consider the proposed plan. In a radio address of Oct. 24 he stressed the importance of providing both immediate and long-term aid, and asked $357,000,000 of interim aid for France, $285,000,000 for Italy, and additional provision for Austria's needs. On Nov. 8 the president's committee on foreign aid estimated the 4-yr. European dollar deficit at $17,000,000,000 to $23,000,000,000, and recommended year-to-year appropriations totalling between $12,000,000,000 and $17,000,000,000 to fill the gap.

In a statement to the senate foreign relations committee on Nov. 10, Sec. Marshall estimated that $7,500,000,000 w required for the period between April 1, 1948 and J 1949; an estimate of aid for China would be presente For interim aid, until March 31, 1948, he requested $ 000 for Austria, $328,000,000 for France, and $227,000, Italy, a total of $597,000,000. Truman supported these r in his message to congress on Nov. 17.

After lengthy discussions, a combined bill was pas Dec. 15, by a voice vote in the senate and by a vote of in the house of representatives, and signed on Dec. 17; authorized $597,000,000 in interim aid and omitted th ment to China which had been voted previously by the In the appropriations bill, passed by both houses on D the total was cut to $540,000,000, of which $18,000,0 allotted to China and the remainder to France, Ita Austria.

On Dec. 19 Pres. Truman transmitted to congress his message setting forth the long-range program of aid to pean reconstruction. Designed to meet the needs of 16 co and western Germany, the new program called for the tion of $17,000,000,000 for the period 1948–51, in ann stalments. The first instalment, covering the perioc April 1, 1948 to June 30, 1949, would require an approp of $6,800,000,000. (*See* also International Bank for I struction and Development.) (P. E.

**Evangelicals, National Association of:** *see* Na Association of Evangelicals.

**Evatt, Herbert Vere** (1894– ), Australian stat was born April 30, in East land, New South Wales, and was educated at state scho St. Andrew's college, where he obtained his degree as do laws; and at Sydney university, where he obtained his de doctor of letters. Dr. Evatt was admitted to the New Wales bar and in 1925 was elected to the state parliame held the seat until 1929, and in the following year was app a justice of the high court of Australia.

In 1940 Dr. Evatt took the unprecedented step of re from the high court bench to contest Barton seat in the parliament. When the Labour party took office in Oct. 1 was appointed attorney-general and minister for external

Dr. Evatt visited London and Washington during Wor II, represented Australia at the San Francisco conference at the United Nations general assemblies in London an York, 1946; at the Paris peace conference, 1946; and on t Eastern commission of which he was chairman of the committee. He led the Australian delegation at the Unit tions general assembly, 1947, where he was elected chair the special committee on Palestine.

**Events of the Year:** *see* Calendar of Events, 1947 1–16.

# Exchange Control and Exchange Rates.

The expectations that economic recovery and moneta bilization would make substantial progress in 1947 an international trade and payments restrictions would be were not fulfilled. The dollar shortage proved to be the problem; it was reflected in a huge surplus of about $9,00 000 in the U.S. balance of payments on current accou also in Great Britain's inability to maintain convertibi sterling after it was introduced on July 15.

For those who thought that important steps would be toward convertibility of currencies and freer multilateral in 1947, Great Britain's experience was a great disappointment.

In spite of political disturbances, economic difficulties and obstacles to international trade, however, official foreign-exchange rates of most countries remained remarkably stable. This was possible only because most countries maintained or tightened foreign-exchange and import restrictions.

**United States.**—The monetary position of the U.S. dollar remained extremely strong in spite of a continuous rise in prices which, although offset by inflationary conditions in a great many other countries, aggravated the dollar shortage. The great surplus in U.S. balance of payments was covered from the following sources: reduction of foreign-held dollar balances, sales of foreign-held dollar securities, import of gold, credits and grants given by the U.S. government and other credits and investments.

Dollar balances held by foreign countries fell from $6,467,00,000 on Aug. 31, 1946, and $6,006,500,000 at the end of 1946 to $5,437,300,000 on July 31, 1947. The greatest decline occurred in Canada's balances, from $931,800,000 at the end of 1946 to $563,700,000 on July 31, 1947. Several European countries, especially the Netherlands and France, sold substantial amounts of dollar securities in order to obtain dollar exchange.

Gold reserves of the United States increased from $20,529,00,000 at the end of 1946 to $22,747,000,000 on Dec. 20, 1947, or by $2,218,000,000. Since the United States paid $687,500,00 in gold as part of its subscription to the International Monetary fund the actual increase in gold sales to the treasury reached about $2,700,000,000—nearly double the value of gold produced in the same year.

But the main source from which the dollar deficit of many countries was met was U.S. aid, which in 1947 reached nearly $6,700,000,000. The total consisted of $2,850,000,000 disbursed from the United Kingdom loan, $1,000,000,000 of supplies for areas under military occupation, more than $860,000,000 disbursed from Export-Import loans, $430,000,000 of property transferred on credit terms, $390,000,000 of U.S. aid through the United Nations Relief and Rehabilitation administration (U.N.R.R.A.), $255,000,000 of special aid for Greece and Turkey, $190,000,000 of special grants and loans for the Philippines and nearly $500,000,000 from miscellaneous aid programs. In Dec. 1947 congress voted $597,000,000 as stop-gap aid to France, Italy, Austria and China; $522,000,000 of it to be allocated to the first 3 nations. (*See* EUROPEAN RECOVERY PROGRAM.)

The International Bank for Reconstruction and Development (*q.v.*) granted in 1947 loans totalling $497,000,000, to France, the Netherlands, Denmark and Luxembourg. At the end of October $252,000,000 remained as unused balance. Resources of neither the International bank nor the International Monetary fund, however, could be used or would be ample to overcome the great shortage of hard currency of many countries, especially in Europe.

**Canada.**—Canada, which appreciated the rate of its currency as of July 6, 1946, to bring it to parity with the United States dollar, and which emerged from World War II as an important lending country, also felt the dollar shortage, especially in the second half of 1947. The free rate of the Canadian dollar in New York was around 89 cents at the end of the year (or 11% less than parity).

In its current account with the United States prior to World War II, Canada customarily had deficits which were offset by freely convertible favourable balances with other countries, especially with the United Kingdom. In 1947 Canada's deficit in trade with the United States and other current items was estimated at about $1,200,000,000. Current account surplus with all other countries was estimated to be a little higher than the dollar deficit, but only a part of the former was paid in dollars, so that Canada was faced with the problem of paying its dollar deficit in spite of an over-all favourable balance of payments. It obtained around $550,000,000 in convertible exchange from countries other than the United States, a large part of it from the United Kingdom; but for the rest of the deficit Canada had to use its official and private reserves of U.S. dollars and gold to the amount of about $750,000,000. Canada's official dollar holdings declined to $480,000,000 on Nov. 13, 1947, at an annual rate of about $800,000,000. Out of relatively large credits granted to various countries, the amount of $500,000,000 remained for disbursement in 1948.

EXCHANGE WINDOW for the sale of U.S. dollars in Shanghai. Speculation on the inflationary Chinese dollar hit panic proportions early in 1947. Its value was officially set at 12,000 to 1 U.S. dollar on Feb. 16

Faced with this difficult problem, Canada on Nov. 17 introduced import restrictions to curtail imports from the United States by $200,000,000. Restrictions on tourist expenditures were also established.

A credit line of $300,000,000 was arranged with the Export-Import bank. In order to increase its supply of dollars, Canada decided to stimulate gold production by granting subsidies.

**Latin America.**—The foreign-exchange situation of a number of Latin-American countries had become more difficult in 1947. The actual gold reserve of these countries declined from about $2,800,000,000 in Sept. 1946 to less than $2,000,000,000 in the latter part of 1947. Argentina, Mexico, Colombia, Chile, Peru, Bolivia, Ecuador and also Brazil lost parts of their gold and a substantial part of their dollar holdings, which had been used to a large extent for purchases of various goods not available during World War II. Whereas these countries had a favourable balance of trade with Great Britain and the European continent, they had an import surplus with the United States expected to reach $1,800,000,000 in 1947. Only Cuba and Venezuela, whose gold reserves had increased, and possibly Argentina, Uruguay, Colombia and Panamá could expect to continue imports from the United States at 1947 rates for some time.

Cuba, Mexico, Panamá, Guatemala and the Dominican Republic alone did not introduce foreign-exchange controls, but Mexico was obliged to resort to import restrictions. Most countries continued to maintain exchange restrictions. Although the controls helped in maintaining stable exchange rates, the pressure of the balance of payments and the dollar shortage led to further extension of restrictions, a greater use of multiple rates of exchange and, in some cases, also to a decline in the exchange rates.

A system of multiple-exchange rates was newly established in Ecuador. In June 1947 the use of the official rate of 15.04 sucres per U.S. dollar was limited to essential imports; importers of semiessentials had to pay an additional exchange surcharge of 5 sucres per dollar. In addition a free market was made available for importers of luxury goods, also subject to the five-sucre surcharge.

In Bolivia a preferential rate of 55.50 bolivianos per U.S. dollar was established for tin exports over the quantities prescribed.

Brazil, which had not announced the initial par value of cruzeiros to the International Monetary fund, experienced a shortage of dollars which led to further import and exchange restrictions, and also to a black market of foreign exchange with rates up to 20% more than the official rates.

In Chile the free rate of pesos, which was 39.93 per U.S. dollar in Dec. 1946, went up to 53.09 in Aug. 1947. The uncontrolled selling rate for Costa Rica's colon went up from 6.01 per U.S. dollar in Dec. 1946 to 6.27 in Aug. 1947. Paraguay's free-market rate for guarani increased from 3.12 in Dec. 1946 to 3.43 in Aug. 1947. In Peru the free rate, constant at 6.80 soles until the middle of 1946, went up sharply and reached 14.90 in Aug. 1947.

Uruguay began to apply the rate of 1.90 pesos per U.S. dollar to all transactions in the free market after July 1947, whereas before that time there was also a lower rate of about 1.78. In September a new buying rate of 1.70 pesos was created for the purchase of textiles.

The Dominican Republic organized a central bank and in October started to convert dollars to the new Dominican gold pesos. Approximately U.S. $26,000,000 of the country's legal currency was in circulation at that time.

**The Sterling Area.**—*United Kingdom.*—The problem of convertibility of the pound was perhaps the most important single factor in the international-exchange market during 1947. According to the Anglo-U.S. financial agreement of Dec. 6, 1945, the United Kingdom undertook by July 15, 1947, to make sterling receipts from current transactions freely available for current transactions in any area without discrimination; any discrimination arising from the so-called sterling area dollar pool would be entirely removed and each member of the area would have its current sterling and dollar receipts at its free disposition for current transactions anywhere.

The British government made various preparatory steps throughout the first half of 1947 in order to make the introduction of convertibility easier and to soften its great impact on the British foreign-exchange position.

In payment agreements concluded during this period the British had been working toward a situation under which all countries would agree to accept sterling freely in current transactions, in order to make it freely transferable to all other currency areas. By July 15, 1947, a large number of countries, including Britain's important trading partners in Europe, Latin America and also Canada, had entered into agreements under which their monetary authorities agreed to accept sterling freely in their so-called "transferable accounts" in London in payment for current international transactions. Sterling in such accounts could be drawn upon freely to other currency areas including the United States. The system of transferable accounts applied by July 15, 1947, to the following countries: Argentina, the Belgian monetary area, British Canada and Newfoundland, Czechoslovakia, Egypt and Sudan, Ethiopia, Finland, Iran, Italy, the Netherlands monetary area, Norway, the Portuguese monetary area, Spain, Sweden and Uruguay. The operations of these accounts were free from the British exchange control but subject to conditions stipulated in agreements between the United Kingdom and the countries concerned.

The system of transferable accounts extended the area of convertible sterling which already existed in "American accounts," for which the unrestricted convertibility of balances on current accounts had been established. The American accounts (the United States registered accounts) applied to the United States, the Philippines and the majority of Latin-American co with the exception of Argentina, Brazil and Uruguay.

The convertibility of sterling was introduced on July 1 according to the agreement, but on Aug. 20 the United Ki government already had to suspend the automatic right it had granted to various foreign monetary authorities change sterling into dollars. The short experience demon that the technical position of the pound, chiefly as a re the British balance of payments, was not strong enough t the heavy demand on dollars coming from holders of sterling balances. To avoid further heavy losses of its g dollar holdings the British government had to suspend th vertibility of its currency.

Development of the British dollar position was reflected rapid use of the U.S. credit. In 1946 only $600,000,000 credit was drawn upon, but $2,350,000,000 was used fro 1 to Aug. 20, 1947. The remaining amount of $400,0 was temporarily frozen, to be released in December. On S Great Britain had about $2,400,000,000 of gold and dol serves and $450,000,000 remaining of the Canadian cre $1,250,000,000.

In spite of the suspension of convertibility Great B shortage of dollars continued. Gold had to be shipped United States, a substantial amount of dollars was bough the International Monetary fund and the Union of South granted Great Britain a gold loan of £80,000,000.

In 1946 the deficit in the United Kingdom current b of payments was $1,660,000,000; but it was $1,400,000, the first half of 1947, reaching probably $2,500,000,000 f whole year of 1947. This dollar deficit actually was greate the total trade deficit, because while a much greater sh British imports came from the hard-currency countries th fore World War II, exports were for several reason oriented in the same direction.

The United Kingdom had to use dollars for its paymen icit not only to the United States and Canada but also to countries. In the first half of 1947 it paid the United $705,000,000 on its own current account; and it paid $11 000 for food that had to be sent to Germany. The payme other countries included $220,000,000 to Canada, $255,0 to Central and South American countries, $270,000,0 sterling area countries and $55,000,000 to European cou Such payments were made mostly for supplies of good some of them were the result of the settlement of st balances (Egypt, India, Iraq) and others represented converted from sterling during the short period of converti

After Aug. 20 the United Kingdom began to revise its fo exchange policy. In addition to introducing severe impo strictions estimated to save several hundred million d yearly, and to intensifying its export drive, it re-negotiated ous payments agreements, including those with the sterling countries.

**The Sterling Bloc.**—At the end of 1947 the sterling blo sisted of the United Kingdom, the British dominions (excl Canada and Newfoundland), British dependent territorie protectorates, Iraq, Trans-Jordan, Iceland and the F Islands. In July Egypt had formally withdrawn, and pay from the United Kingdom to Egypt thereafter became su to normal exchange authorizations. It was agreed that o accumulated sterling balances amounting to about £400,00 £8,000,000 was to be released in the second half of 1947. I dition, £12,000,000 was made available as a nonrenewab lease to provide working balances. A further amount of 000,000–£15,000,000 was to be released as the counterpa confirmed credits opened in London to Egyptian firms to fi imports from Britain.

The sterling balances held by the Reserve Bank of India amounted as of July to £1,178,400,000. An interim agreement was signed in August according to which £35,000,000 was released from the accumulated balance to cover the period until the end of 1947, and in addition £30,000,000 was released to serve as a working balance.

In the same month an agreement was also reached with Iraq, whose sterling balances totalled about £60,000,000. Five million was released as a "once-for-all" payment and a further £2,000,000 provided as a working balance. The main releases were to be £15,000,000 over the 5-year period. There would be releases of £4,000,000–£5,000,000 also to be provided by July to meet outstanding credits opened by United Kingdom banks and a sum up to £4,200,000 to cover repayments of advances made to the Iraq government by oil companies. Negotiations were also conducted on the settlement of sterling balances with Argentina and Brazil.

The total of accumulated sterling balances had been reduced between July 1, 1946, and Aug. 31, 1947, by £230,000,000, of which India accounted for £135,000,000. The whole problem was still a major factor in the United Kingdom balance of payments. In June 1947 the total of sterling balances was £3,560,000,000; £1,700,000,000 was either under control or being brought under control by voluntary blocking agreements; £400,000,000 belonged to Australia, New Zealand and South Africa, with which no formal agreements were required; £760,000,000 belonged to the rest of the sterling area and £500,000,000 was sterling belonging to the rest of the world, including countries in Europe.

Within the sterling bloc (renamed the "scheduled territories") sterling acquired from or to be used for current transactions could be transferred freely. Sterling could also be transferred to the sterling area from other countries. The important feature of the bloc was the pooling of dollar and other hard currencies earned by members and the reallocation of these currencies.

After the suspension of convertibility, financial agreements were negotiated between the United Kingdom and South Africa, Eire and Iraq. Provision was made that the Union of South Africa would bear full responsibility for its own dollar expenditure. An immediate gold loan of £80,000,000 replaced the existing gold sales contract following which South Africa undertook to sell certain annual quotas of newly mined gold to Britain and in exchange for this had access to the sterling area dollar pool. (It used $50,000,000 in the first half-year of 1947.) South Africa would sever its link with the sterling area dollar pool.

In the agreement with Eire, that country agreed to reduce substantially its drawing of dollars from the dollar pool and would obtain £14,000,000 for the period Oct. 1, 1947, to June 30, 1948, plus Eire's dollar earnings. Iraq was given a hard-currency quota of £5,570,000 per annum, to include Iraq's own earnings of hard currencies.

Obviously, the dollar crisis was felt also in Australia, New Zealand and India. Practically all members of the sterling bloc took some measures to reduce their need of dollars, and at the same time some of them tried to aid Great Britain by increasing exports of goods to Britain which otherwise could be bought only for hard currencies. Under new circumstances it was to be expected that Great Britain would have to revise some of the agreements with the so-called transferable account countries.

Such an agreement was renegotiated with Belgium in Sept. 1947. Belgium agreed to hold sterling up to a new ceiling of £27,000,000, of which up to £12,000,000 would have a bilateral exchange guarantee attached. Contrary to expectations the new ceiling of £27,000,000 was reached in little more than a month, and thus Belgium was in a position to offer sterling for conversion with gold or dollars under the agreement. It was agreed further that sterling currency earned by Belgium could be used only in transactions with the United Kingdom and not as before with other countries of the sterling area also.

The transferable account established in 1947 permitted sterling currently earned by Belgium and certain other transferable-account countries to be transferred between the Belgian, on the one hand, and other transferable-account countries, and the American-account countries on the other hand, subject only to supervision by the exchange control authorities of the countries concerned. Developments in the summer of 1947, however, forced Great Britain to abandon its concept of the transferable account and to go back to what for all practical purposes were bilateral payments agreements. At the end of 1947 the transferable-account system was in a state of disintegration, and for the time being its place would probably be taken by bilateral payments agreements with mutual overdraft facilities and exchange guarantee to which the United Kingdom was obliged to consent.

**Continental Europe.**—No great progress toward monetary

*Foreign-Exchange Rates*

Note.—Includes only currencies regularly quoted in New York during 1947. Averages of certified noon buying rates for cable transfers in cents per unit of foreign currency. The rates listed are mostly official rates; they were managed and supported by a strict and often tightening exchange control. Therefore, they did not always reflect the true exchange rates; neither were these properly reflected in the black-market rates.

The following members of the International Monetary fund had not yet announced the initial par value of their currencies: Brazil, China, Dominican Republic, Greece, Italy, Poland, Uruguay and Yugoslavia.

| Country | Unit quoted and type of exchange | Annual average rate 1938 | Annual average rate 1945 | Annual average rate 1946 | Monthly average rates, 1947 March | Monthly average rates, 1947 June | Monthly average rates, 1947 Oct. |
|---|---|---|---|---|---|---|---|
| Argentina | Peso | | | | | | |
| | Official | 32.60 | 29.77 | 29.77 | 29.77 | 29.77 | 29.77 |
| | Special export | — | 25.12 | 25.12 | 25.12 | 25.12 | 25.12 |
| Australia | Pound | 389.55 | 321.17* | 321.34 | 320.91 | 320.90 | 321.19 |
| Austria | Schilling | 18.916 | — | — | — | 10.14 | 10.14 |
| Belgium | Franc | 3.38 | 2.29* | 2.28 | 2.28 | 2.28 | 2.28 |
| Brazil | Cruzeiro† | | | | | | |
| | Official | 5.84 | 6.06 | 6.06* | 5.44 | 5.44 | 5.44 |
| | Free | — | 5.18 | 5.28 | | | |
| Bulgaria | Lev | 1.2424 | — | — | — | .352 | .352 |
| British India | Rupee | 36.59 | 30.12 | 30.15 | 30.16 | 30.16 | 30.17 |
| Canada | Dollar | | | | | | |
| | Official | — | 90.91 | 95.20 | 100.00 | 100.00 | 100.00 |
| | Free | 99.42 | 90.49 | 93.29 | 94.21 | 91.59 | 89.98 |
| Chile | Peso | | | | | | |
| | Official | 4.0 | 3.28 | 3.27 | 3.28 | 3.28 | 3.28 |
| | Special export | — | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| Colombia | Peso | 55.95 | 57.01 | 57.02 | 56.98 | 56.98 | 56.98 |
| Czechoslovakia | Koruna | 3.47 | — | 2.01* | 2.006 | 2.006 | 2.006 |
| Denmark | Krone | 21.83 | — | 20.88* | 20.86 | 20.86 | 20.86 |
| Finland | Markka | 2.1567 | — | — | — | .74 | .74 |
| France | Franc | 2.88 | 1.97* | .84 | 0.84 | 0.84 | 0.84 |
| Hungary | Florin‡ | 19.727 | — | — | — | 8.58 | 8.58 |
| Italy | Lira | 5.26 | — | .44* | 0.40 | 0.10 | 0.28 |
| Mexico | Peso | 22.12 | 20.58 | 20.58 | 20.57 | 20.57 | 20.57 |
| Netherlands | Guilder | 55.01 | 37.93* | 37.81 | 37.78 | 37.76 | 37.76 |
| New Zealand | Pound | 392.35 | 323.46 | 322.63 | 322.2 | 322.18 | 322.48 |
| Norway | Krone | 24.57 | — | 20.18* | 20.16 | 20.16 | 20.15 |
| Portugal | Escudo | 4.43 | — | 4.05* | 4.04 | 4.02 | 4.02 |
| South Africa | Pound | 484.16 | 399.05 | 400.50 | 400.75 | 400.75 | 400.75 |
| Spain | Peseta | 5.60 | — | 9.13* | 9.13 | 9.13 | 9.13 |
| Sweden | Krona | 25.197 | — | 25.86* | 27.82 | 27.82 | 27.82 |
| Switzerland | Franc | 22.87 | — | 23.36* | 23.36 | 23.36 | 23.36 |
| Turkey | Lira | 80.11 | — | — | — | 35.75 | 35.75 |
| United Kingdom | Pound | 488.94 | 403.02* | 403.28 | 402.73 | 402.72 | 403.10 |
| Uruguay | Peso | | | | | | |
| | Controlled | 64.37 | 65.83 | 65.83 | 65.83 | 65.83 | 65.83 |
| | Noncontrolled | — | 55.16 | 56.28 | 56.26 | 56.26 | 56.20 |

*Average of daily rates for that part of the year during which quotations were certified.
†Prior to Nov. 1, 1942, the official designation of the Brazilian currency unit was the milreis.
‡Prior to 1946 the official designation of the Hungarian currency was pengö.

reconstruction was made in Europe during 1947. Open inflation continued in Greece, France, Rumania and Italy. Official exchange rates of some other countries were considered as overvalued in spite of the fact that the degree of their overvaluation was somewhat reduced by the continued price rise in the United States.

Exchange control was maintained in all European countries with the exception of Switzerland, which retained restriction only on purchases of dollars from sources other than from export and services.

Trade between European countries was carried mostly through bilateral payments agreements providing usually for overdrafts and thus making possible a certain expansion of trade. At the end of the year, however, the overdraft limits were reached on most of these agreements, so that a restriction in the volume of intra-European trade had become a distinct possibility.

Practically all European countries except Switzerland also felt the shortage of dollars. In 1947 the Marshall-plan countries alone had an estimated trade deficit with the United States of $4,000,000,000. During 1947 the monetary gold reserve of France, Belgium, the Netherlands and Sweden declined substantially. In the second part of the year all countries, again except Switzerland, tightened import restrictions for goods to be paid in hard currency. Sweden, which granted huge foreign loans in the first postwar period, found itself in increasing balance-of-payments difficulties resulting from its trade deficit with the hard-currency countries. Similarly, Belgium began to feel its trade deficit with hard-currency countries in spite of a favourable balance of trade with other countries.

An attempt was made to arrest reduction of intra-European trade caused by payment difficulties, by organizing a multilateral monetary compensation. Belgium, France, the Netherlands and Italy joined this system providing for an automatic offset of balances-on-payments agreements which would lead to a reduction of balances. Great Britain, Sweden, Norway and Denmark also joined as occasional members so that a multilateral offset could be arranged with them from case to case.

The Bank for International Settlements (*q.v.*) in Basle, Switzerland, was entrusted with administering the new organization. Although this multilateral offsetting of balances could bring some encouragement to intra-European trade, it could not remedy the basic problem that Belgium, Sweden and Switzerland had been the chief creditors while France, Great Britain, Denmark and the Netherlands were on the debit side.

Several countries took various measures to check inflation and to bring their exchange rate more in line with the level of prices and the balance-of-payments situation. Italy moved on Nov. 28, 1947, toward establishing a freer exchange market. In March 1946 Italy had introduced the so-called 50% system permitting exporters to retain or sell one-half of their hard-currency earnings on condition that it was utilized within a short period for the purchase of licensed imports. These percentages of foreign exchange were sold on a free market so that the exporters had to calculate with an average rate obtained from the official rate for 50% of the surrendered proceeds and the other 50% sold on the free market. In Dec. 1946 the official rate was 225 lire to the dollar, free export rate 568, average rate 397. At the same time the black-market rate was 683. In Aug. 1947 the official rate was increased to 350, and the free-export rate was quoted at 733, so that the average rate was 542. According to the new provision the foreign-exchange office would buy the 50% at the average free rate of the previous month. When the new system was announced, a provisional official rate of 589 lire, based on free-rate quotations of the preceding five days, was maintained until the total November average could be computed. For December the official rate was fixed at 603, while the free-export rate was only 567 and the black-market rate 578. The step taken by Italy could be considered as preparation for the final stabilization of the lira.

On Dec. 10 a new monetary measure was proclaimed in Austria, according to which the amount of money in circulation was reduced by two-thirds; correspondingly, the volume of deposits was also deflated. It was expected that the money in circulation would be reduced from about 6,000,000,000 schillings to 3,000,000,000 schillings.

Rumania took drastic anti-inflationary measures. On Aug. 16 the currency was converted at a rate of 20,000 of the old leu equal to 1 new leu. The dollar rate was fixed at 150 leu (the old free-market rate was 4,200,000 leu). Holders of notes were allowed to exchange only limited amounts. The rest, as well as the deposits, was frozen so that it amounted to the sequestration by the state of the cash holdings of the entire population. A shortage of money developed in relation to available goods.

Bulgaria also carried out a drastic monetary reform in March. The old bank notes were exchanged against new ones at the rate of 1 to 1, but all sums of more than 2,000 leva were temporarily blocked. The total monetary circulation of 71,000,000,000 leva was reduced to 24,000,000,000 leva.

In Poland, the official rate remained at 400 zlotys to the pound, but a new rate of exchange of 1,600 zlotys to the pound was establis applying to such transactions as assistance from relatives abroad, heritance, allowances, etc.

Inflation had not yet been checked in Greece where, in order to o come the handicap of high prices for Greek exports resulting from overvaluation of the drachma, exporters after the middle of Octo received in exchange for the foreign-exchange proceeds of their ex drachmas calculated at the official rate of 20,000 to the pound foreign-exchange certificates equal to the amount of the foreign excha surrendered by them. These certificates had a free market and had to bought by Greek importers, who had not only to pay drachmas at official rate for the foreign exchange but also hand in an equal amo of foreign-exchange certificates.

The Soviet Union carried out a monetary reform following a pat established in many countries in similar circumstances in the 19th tury. The rubles in circulation had to be exchanged at the ratio of rubles in old money to one ruble in new money; this measure redu radically the excess money supply in the Soviet Union.

No efficient measures were taken throughout 1947 to check infla in France in spite of the fact that prices were rising, that the effec the French franc being overvalued was evident and that the black m ket in foreign exchange became common in France. Only toward the of the year did the French government attempt to take measures balance the budget and prepare for a possible monetary reform in Fra

Germany made no progress in monetary reconstruction, but the n ber of trade and payments agreements arranged between the var occupation zones and European countries greatly increased.

**The Near East.**—While the process of readjustment to peacetime co tions was in progress, the decline of prices which started in 1946 some near east countries did not continue and prices became m stabilized. There was also a great need for dollars in the whole a especially in view of the desire to proceed with economic developm and import capital goods.

In July 1947 Egypt had withdrawn from the sterling area; the change rate of the Egyptian pound, however, remained unchanged was still practically pegged to the pound sterling. The sterling bala represented by far the greatest part of Egypt's monetary reserve.

In Iran, whose foreign-exchange position remained strong, the rate in rials to the dollar did not fluctuate greatly, remaining aro 51.5 as compared with the official rate of 32.5. The free rate represe an average premium of around 59%. Most transactions were carried at the free rate.

**India.**—The Reserve Bank of India act was amended so that the po sterling would not be the sole determinant of the external value of rupee. According to this act the rupee could be linked to currencies members of the International Monetary fund so that it should be sidered as an independent currency in spite of the fact that India mained a member of the sterling area. There was no immediate e on the rate of rupees as expressed in sterling. In March exchange trol was formally established. In December a financial settlement arranged between India and Pakistan, dividing cash balances and ster assets of the former empire, estimated at a value of £1,200,000,000.

**Burma.**—In April a central treasury office was established, qualifie issue notes and to take up functions previously served by the Res Bank of India. Burma's currency thereafter was no longer linked that of India.

**China.**—Chaotic monetary conditions continued in 1947. In Febru the official rate for yuan per U.S. dollar was increased from 3,35 12,000. To ensure imports of essential commodities the official rate retained for use of importers of cotton, wheat, rice, flour, coal and c All other authorized transactions were conducted at the open mar buying and selling rates being fixed by the Exchange Equalization bo The free-market rate rose steadily, reaching 49,000 in June and 90, in November. By that time official transactions were made on basis of 73,000 yuan per U.S. dollar. No stabilization of China's rency was yet in sight. At the end of December the free-market reached 150,000; the official open-market rate, periodically adjusted, about 40% less.

**The Philippines.**—The new republic was one of the few countries w did not feel the dollar shortage, especially because of U.S. contribut for war losses; these payments were expected to reach $2,000,000, within 5 years.

**Japan.**—The conversion rate of yen to U.S. dollar was fixed at in March 1947.

**Exchange Stabilization Funds.**—Activity of the still-existing excha stabilization funds was limited in 1947 because the basic method stabilization technique could not be restored. It was also expected the International Monetary fund would reduce the importance of tional exchange stabilization funds. The existing funds acted merely agents holding part or all of the external monetary reserves of the c tries concerned and possibly carrying out special gold and fore exchange transactions in a generally controlled market.

The United Kingdom's exchange equalization account continued hold the bulk of Britain's monetary reserve, which was around £5 000,000 toward the end of 1947. The nature and extent of the operat of the account were kept secret.

The French and the Dutch stabilization funds were reported to h continued buying and selling foreign exchange, but nothing partic was known of their operations.

During 1947 the United States stabilization fund continued the u transactions on a moderate scale. After payment of $1,800,000,00 the subscription to the International Monetary fund, the total asset the U.S. stabilization fund amounted to only $298,900,000 as of June 1947, compared with $2,091,400,000 on June 30, 1946. Between these dates the foreign exchange holdings increased from $3,930,000 to $1 600,000; the main increase occurred in item "all other" from $3,9 000 to $100,970,000. This increase resulted from a purchase of Braz cruzeiros amounting to $80,000,000, according to the agreement Brazil in which the fund agreed to purchase cruzeiros up to $100,000. The rest of the increase in foreign-exchange holdings of the fund sisted of Indian rupees. Between June 30, 1946, and June 30, 1947, old holdings of the fund went up from $71,000,000 to $151,000,000, bile the dollar holdings declined from $196,000,000 to $25,800,000.

On May 13, 1947, a new $50,000,000 stabilization agreement was conluded between Mexico and the United States. Under terms of this agreeent the United States stabilization fund undertook for a period of four ears commencing July 1, 1947, to purchase Mexican pesos to an amount qual to $50,000,000 for the purpose of stabilizing the U.S. dollar and e Mexican peso rate of exchange. (*See* also Gold; International rade; Tariffs.)

Bibliography.—*Federal Reserve Bulletin; Foreign Commerce Weekly; conomist; Financial Times; Neue Zuricher Zeitung.* (A. Bh.)

**xchange Rates:** *see* Exchange Control and Exchange ates.

**xhibitions, Livestock:** *see* Shows, Animal.

**xistentialism:** *see* Philosophy.

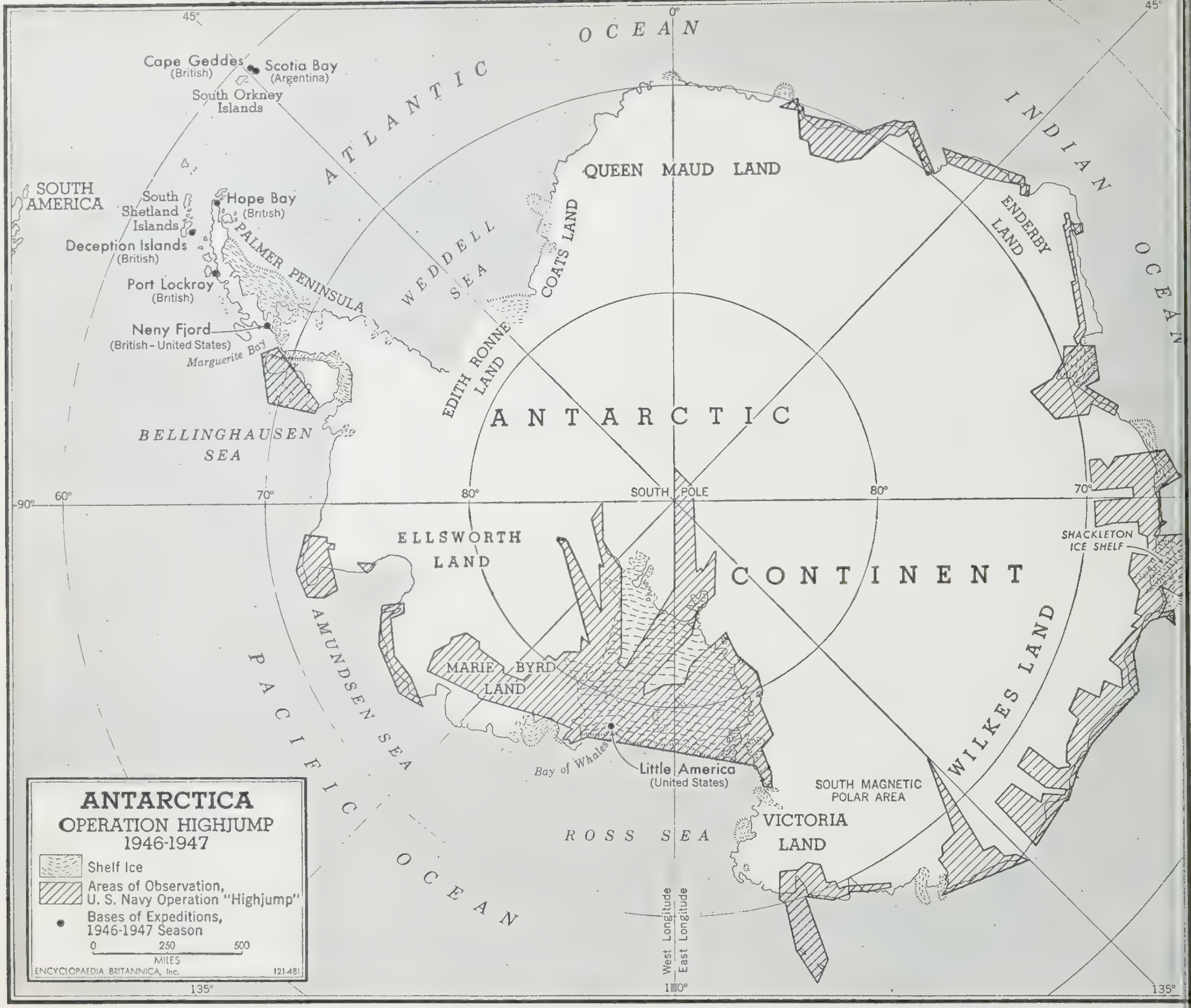
**xpenditure, Government:** *see* Budget, National.

**xploration and Discovery.** The major exploratory accomplishments of 1947 ere made by expeditions in the antarctic.

**Operation "Highjump."**—This expedition of the U.S. navy hich, from Dec. 1946 to March 1947, operated in three groups long the entire circumference of the antarctic continent, was eported by its leader, Rear Admiral Richard E. Byrd, to have iscovered, relocated or confirmed 5,400 mi. of coast line, discovered ten new mountain ranges, including many large glaciers and individual peaks from 15,000 to 20,000 ft. high, and photomapped a vast area of which more than 340,000 sq.mi. had never before been seen.

Dr. Paul A. Siple, scientific aide to Admiral Byrd and senior U.S. army representative, had predicted, from his studies of ice movements in the Ross sea region during former expeditions to the antarctic, that a significant deformation in the outline of the Bay of Whales would occur in 1947 and might make the use of any large establishment there extremely hazardous. The Bay of Whales, destination of the central group under Rear Admiral Richard H. Cruzen, is a mere break in the face of the Ross shelf ice. It was created, Dr. Siple determined, by the shearing action of a submerged island overridden by the slowly moving Ross shelf ice about 20 mi. southeast of Little America. The northward streaming sheet of ice becomes fissured as it strikes the island, and a void or bight is formed in its lee. The eastern edge of the divided ice sheet, in curving around the obstruction, takes a westerly direction. As a result, although moving at the same rate, the sides of this bay are actually advancing at right angles to each other. In 1911 the shelf ice sides of the bay were 10 mi. apart; in 1929 they had narrowed the bay to 5 mi.; and upon arrival of the expedition early in 1947, the distance between the entrance capes was only 800 ft. The entrance was closing at the rate of 4.4 ft. per day.

IOUNTAINS believed to be part of the Andes range, as photographed in the ntarctic from a U.S. plane in 1947. Glaciers are shown flowing through a ountain pass to the ice shelf below



To permit most expeditious use of the Bay of Whales by the ships of the central group, the U.S. coast guard cutter "Northwind" entered and broke out 15,000,000 tons of ice, or about 2 sq.mi. of bay ice, 5 to 20 ft. thick. An air strip was quickly established on the snow surface at Little America, and six R4D planes, launched from the deck of the carrier "Philippine Sea," flew in from its position outside the pack ice 800 mi. to the north. These planes, equipped with a combination of wheel and ski landing gear and using Jato (jet-assisted take-off) rocket propulsion tubes, were the largest planes ever to take off successfully from a carrier and subsequently from the improvised snow surface air strip. Their use permitted exploration of more than 800,000 sq.mi. of the continent, the discovery of three new major mountain ranges and, by means of air-borne magnetometers, the location of islands entirely hidden beneath the shelf ice.

The eastern group under command of Captain George J. Dufek, operating off the coast in the Amundsen sea, discovered and mapped extensive high mountain ranges and in 105° W. longitude reported a bay 20,000 sq.mi. in extent.

The western group under Captain Charles A. Bond found evidence that the actual position of the south magnetic pole was some 150 mi. northwest of its previously determined location. This group photomapped the coast line of Wilkes Land, and near the Shackelton shelf ice in 101° E. longitude made the spectacular discovery of a colourful area of snow and ice free land which was named the Bunger oasis. Described first as a series of blue and green fresh-water lakes of possible volca origin, analysis of the water revealed them to be arms of sea which at favourable seasons were kept free from ice reradiated solar heat from the blackened rock of the regi In 70° E. longitude, more ice free areas were found, includ a bay 50 mi. deep which was stated to be potentially one of continent's finest harbours.

Toward the end of March 1947, Operation "Highjump" turned to the United States where reports on the expeditio scientific projects were to be compiled.

**Other Activities in the Antarctic.**—By the end of D 1947, a second U.S. navy expedition had returned to the a arctic, was operating off the Shackelton shelf ice in the regi of the Bunger oasis and was transmitting daily radiophoto f simile weather maps for a record distance of 10,580 mi. Un the leadership of Commander Gerald L. Ketchum, the expe tion consisted of the ice breakers "Edisto" and "Burton Islar and was entirely ship based.

The general plan was to penetrate the ice pack and atten what had been hitherto impossible; namely, to skirt the co of the antarctic continent, keeping it in view from the region 110° E. longitude to the Ross sea, and thence eastward to Palmer peninsula. A stop was planned at the Bay of Whales investigate conditions there, and the ships were going to atten to reach the Ronne expedition base at Marguerite bay March 1, 1948.

Pertinent scientific information would be collected in the egions visited in order to amplify observations made on Opera- on "Highjump." The primary objective of the expedition, how- ver, was to establish ground control survey stations along the oast line in order to permit accurate interpretation of the vast umber of aerial photographs taken on Operation "Highjump." he "Highjump" photographers, forced to fly over hundreds of iles of frozen sea and drifting floes before they saw land and onfronted with other extremely difficult navigational problems, ere often forced to leave gaps in an otherwise continuous overage of the areas they were attempting to survey.

The Ronne Antarctic Research expedition, a small but highly ompetent U.S. group under Commander Finn Ronne (Rónn- h), arrived on March 12, 1947, at Marguerite bay where the pedition ship was allowed to freeze in, and the base established on Stonington Island in buildings erected by Commander onne when he was leader of the east base of the U.S. antarctic ervice in 1940–41. Meanwhile, an 11-man base of the British alkland Islands Dependencies survey was also established at eny fjord on Stonington Island. Major K. S. Pierce-Butler nd Commander Ronne immediately decided on a plan of co- peration and joint scientific work for the British and U.S. oups. Jointly operated outlying weather stations were established, and there was joint representation on the Weddell coast nd other ground control parties of each group. On Sept. 15, ree British fliers crashed off the Palmer peninsula in sudden ul weather. After nine days of intensive search by ground and ir, they were rescued by a Ronne expedition plane.

Starting in late October, Commander Ronne made a series of ighly successful trimetrogon photomapping flights in which, ith the help of ground survey points established by his trail arties and by skilful plane landings, he delineated in its en- rety all of the Palmer peninsula and the adjoining regions rom 65° S. to 80° S. latitude and between 40° W. and 73° W. ngitude. The facility with which the Ronne expedition com- leted its mapping schedule in a region hitherto regarded as one f the least accessible in the antarctic clearly indicates that ccurate co-ordination with ground control is essential for map- ing surveys even with the best of modern aerial photo equip- ent.

By the end of 1947, the Ronne expedition had mapped an rea more than 460,000 sq.mi. in extent, had discovered and elineated the last remaining unknown coast line and had found vidence that the antarctic is a single continent undivided by ny depression running between the Weddell and Ross seas. bout 230,000 sq.mi. of the area surveyed consisted of newly iscovered land. This new territory, extending south and west rom the Weddell sea, was named Edith Ronne Land in honour f Commander Ronne's wife, who was also a valued member f the expedition and said to be the first woman to set foot on he antarctic continent.

British exploratory activities in the antarctic during the year 947 were largely confined to the Falkland Island dependencies ases at Port Lockroy, Deception Island, Hope bay, Cape eddes and Neny fjord. Long-range studies embracing the eteorology, geology, biology and other aspects of this sector ere conducted from these observatories. Periodic relief and upply of them is often mistaken for new expeditions.

Early in 1947, an Australian survey flight was made to Mac- uarie Island where an observatory for research in cosmic rays, eteorology, terrestrial magnetism and radio-physics was set up. similar station was later established on Heard Island in the erguelen region, and a third was planned for the antarctic ontinent in the vicinity of the south magnetic pole. The Union f South Africa also established a civil aviation and weather tation on Prince Edward Island, 1,500 mi. southeast of Capetown. Co-operative use of the network of stations so established was expected to facilitate long-range weather forecasting in the southern hemisphere.

Russia, Japan, the Netherlands, Great Britain and the Union of South Africa conducted whaling expeditions in the antarctic during 1947 and reported larger than average catches. British and Japanese news dispatches showed an increased interest in securing and freezing whale meat for direct human consumption, publishing recipes for its preparation and citing its high protein and vitamin value. (*See* also Marine Biology.)

(D. Cn.; P. A. Se.)

**Explosions:** *see* Disasters.
**Export Controls:** *see* International Trade.

## Export-Import Bank of Washington.

Created in 1934, the bank operates as an independent agency of the United States government under the Export-Import Bank Act of 1945, as amended. The bank has broad powers to do a general banking business and to make practically any type of loan in so far as the exercise of these powers is necessary to carry out its fundamental purpose of financing and facilitating the foreign trade of the United States. However, the policies of the bank restrict its operations to loans which offer reasonable assurance of repayment, which are for specific purposes, and which do not compete with private capital.

Following the termination at the middle of 1946 of its program of emergency reconstruction loans, the more normal operations of the bank in financing U.S. foreign trade came again to constitute its principal activities. The bank finances specific export and import transactions on application of United States exporters and importers where the nature of the risk involved is such that private credit cannot be obtained. It makes loans to assist in financing the export of United States materials and equipment required for development projects in foreign countries. It also arranges, in favour of foreign purchasers, credits which are available on equal terms to all qualified U.S. exporters for financing the sale of export staples such as raw cotton.

The total amount of loans authorized by the bank from the time of its establishment in 1934 increased from approximately $3,500,000,000 at the end of 1946 to $4,100,000,000 at the end of 1947. Disbursements during 1947 were approximately $864,000,000 and repayments were approximately $87,000,000. As a consequence, the outstanding loans of the bank increased from $1,242,000,000 at the end of 1946 to $2,019,000,000 at the end of 1947.

(A. My.)

**Exports:** *see* Agriculture; International Trade; Tariffs. *See* also under various countries.

## Eye, Diseases of.

The threshold of response of the human eye to electric currents was investigated to determine the effect of adaption to the dark and to light upon it and to determine better electrosensitive structures. Exposure of the dark adapted eye to light caused an immediate definite increase in threshold but this fell in a few minutes as the dazzling effect of the light was lost. Sudden withdrawal of illumination from a light-adapted eye was followed by a rapid fall of electric threshold and then a slow rise as dark adaption occurred. This slow rise in threshold during dark adaptation indicated that the photochemical system at the back of the eye in the nerve is the point of excitation. A light intensity of about 0.004 foot-candle, which is so low that it only stimulates the rods, reduces the electric threshold of the eye.

When a person is at complete sensory and mental rest, a rhythmic series of discharges is observed in the electroencephalogram. A light stimulus suppresses this rhythmic discharge after a latent period, and it was thought that this latent period —the blockage interval—includes the time taken by the nervous impulses initiated in the retina to reach the cerebral cortex. If the time elapsing between the incidence of light on the retina and the initiation of a discharge in the optic nerve were known, the time required for conduction through the optic pathways could be determined by subtraction from this blockage interval. The electroretinogram would probably provide this information, since the positive b-wave in this record was shown to be closely linked with the discharge in the optic nerve; the latent period of the b-wave—the time elapsing between the incidence of light on the retina and the beginning of the upward sweep of this wave—is thus a measure of the time consumed by the retinal events (photo-chemical reaction, etc.) leading to the optic nerve discharge—the retinal latency. Blockage interval minus retinal latency gives the conduction time in the optic pathways.

In a normal person the average blockage interval was 169 msec. (0.169 sec.) with a foveal light stimulus, a figure agreeing well with other values when allowance was made for the different conditions and strength of light stimuli. The average retinal latency, with a foveal stimulus, was 45 msec. The average conduction time in the normal person was thus 169 msec.−45 msec.=124 msec. The conduction time in an individual suffering from partial destruction of the optic nerve may be three times as variable as in the normal individual.

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**Facsimile:** *see* Radio; Telegraphy.

**Falk Foundation, The Maurice and Laura:** *see* Societies and Associations.

**Falkland Islands:** *see* British Empire.

## Famines.

Food shortages caused by crop failures, droughts, floods, insect and plant disease were relatively few in 1947. Hunger and deaths in limited areas were held at a minimum by world-wide food distribution agencies, including U.N.R.R.A., the various occupation armies and the Red Cross, and by special government actions. Former famines were largely the result of difficulties of transportation and supply because of the lack of railroads and other transportation facilities. The quick emergency transport provided by the aeroplane now enabled supplies to be moved promptly in an emergency. More important was the realization by governments of their responsibility in anticipating and forestalling shortages. Much of this new attitude grew out of the world-wide activities of U.N.R.R.A. as well as the work of the Combined Food board, the International Emergency Food council and the rapidly expanding plans of the Food and Agriculture organization of the United Nations.

The actual number of deaths in 1947 from malnutrition was variously estimated at from 1,000,000 to 10,000,000. Mortality in India, China, southeastern Asia and Europe was believed to have doubled over the prewar average. Poverty rather than actual scarcity was often the primary factor. Many areas were supplied by U.N.R.R.A. in which a part of the needy population was unable to get an adequate share of the supplies.

World food production as a whole was recovering slowly, but with marked declines in some areas normally deficient in local production. The most severe shortage was in the rice cro the far east, where exportable supplies were below 1946. S diets were abnormally low even for this area, imports wer sential to prevent widespread starvation. Steady increase population added to the difficulty of maintaining even normal supplies. The emergency measures adopted by United States government in December and the prospect more might be done under the Marshall plan were believe many to be the principal safeguard for Europe, but the poli disturbances and the near revolutionary situations in India China made it probable that large numbers of people w find themselves without adequate supplies. (J. C. Ms

**Far Eastern Commission:** *see* Japan; Reparations.

**Farm Co-operatives:** *see* Farm Credit Administratio

## Farm Credit Administration.

Farmers and ranche the United States Puerto Rico and their business co-operatives obtained l totalling $1,625,615,000 in 1947 from the institutions and a ciations operating under the supervision of the Farm C administration. This compares with $1,320,077,000 in 1 These loans were used to finance farm and ranch operation improve and purchase farm land, and to finance farm co-op tives through which farmers market their products and ol farm supplies and farm business services.

In the year, the amount of credit needed in farm opera increased, largely because of higher costs, changes in type farming, the construction of needed buildings and the buyin farm equipment. In general, farming was readjusting to postwar period.

The Farm Credit administration operates through 12 dis offices, and local co-operative credit associations. Farmers tain production or operating credit from local production c associations and long-term farm mortgage credit through national farm loan associations. Farmers' business co-opera deal directly with the bank for co-operatives of the distri which the co-operative is located or, if a co-operative of l regional scope, with the Central Bank for Cooperatives.

The production credit associations operating in all agr tural counties in the United States and in Puerto Rico prov credit in 1947 for 251,000 farmers, totalling $757,611,000 c pared with $614,613,000 in 1946. Membership in the m than 500 local associations was 408,000 on Dec. 31, 1947, c pared with 383,000 on the same date in 1946. The credit tended by the production credit associations was used to seed, feed, fertilizers, material for repairs and the many o items needed in farm operations, including labour.

Long-term or farm mortgage credit was obtained thr about 1,000 national farm loan association offices operated operatively by farmers in the United States, and in Puerto directly from the Baltimore Federal Land bank. Farm Mort loans amounting to $149,370,000 were closed in the year. total included 30,609 federal land bank loans for $138,764 and 11,379 land bank commissioner loans for $10,606,000. authority to make commissioner loans, authorized in the e 1930s when emergency farm mortgage credit was needed pired on July 1, 1947. In the year, 49% of the land l loans and of the commissioner loans closed in the first months of the year were for purchasing farm land.

Farmers' co-operatives—marketing, purchasing and bus service associations—obtained $590,197,000 from the 13 b for co-operatives in the year compared with $458,151,000 previous year, reflecting a high level of business activity. financing included advances under the Commodity Credit poration program.

The 12 federal intermediate credit banks extended credit to production credit associations, privately capitalized credit institutions, including commercial banks, and to banks for co-operatives and farmers' co-operative associations in the total amount of $1,253,123,000 in 1947, which was 22.6% more than in the previous year.

During the year, the system made notable progress toward member-ownership, with the federal land banks becoming completely borrower-owned through repayment of the last of the capital and paid-in surplus subscribed by the government in the depression days of the early 1930s. Further progress toward member-ownership was made by the production credit associations and 31 of these associations were borrower-owned. Capital stock owned by members of all production credit associations went from 45.3% of the total on Dec. 31, 1946, to 57.2% at the close of 1947. Farmers' co-operatives owned $13,017,000 in stock in the 13 banks for co-operatives on Dec. 31, 1947, compared with $8,472,000 a year earlier.

At the end of 1947, borrowers—farmers and farmer co-operatives—had a net investment in capital stock in production credit associations, national farm loan associations, federal land banks and banks for co-operatives of $116,460,000. (I. W. D.)

**Farm Debt:** *see* AGRICULTURE.

## Farmers Home Administration.

The first farm-purchase loan under a new farm mortgage insurance program of this agency of the U.S. department of agriculture was made in Americus, Ga., in a public ceremony Oct. 3, 1947. A 49-year-old farmer who had never owned land of his own borrowed from a local bank 90% of the purchase price of a 150-ac. farm, and the Farmers Home administration insured the loan. He would have a maximum of 0 years to complete his payments, and his annual charge (interest and insurance) on the unpaid balance would be 3½%.

This event marked the opening to private lenders of the government's farm ownership program created by the Bankhead-ones Farm Tenant act of 1937. Both direct loans from federal funds and mortgage insurance covering private loans are available to tenants, sharecroppers, farm labourers, and to qualified war veterans, for the purchase, enlargement or development of family-type farms. Veterans have preference over other applicants for real estate credit or insurance.

In the ten years after direct lending was begun under the farm tenant act, more than 47,000 families thus had become farm owners. Of them 16% had paid their loans in full from their income, 30 years or more ahead of payment schedules.

The Farmers Home administration began operations Nov. 1, 946, as the successor of the Farm Security administration and of the emergency crop and feed loan division of the Farm Credit administration. In addition to making and insuring farm real estate loans, the agency extends operating credit for livestock, equipment, feed, seed, fertilizer and other essentials, and in the 7 western states lends for water facilities on family-type farms and ranches. It lends only to families who are not able to borrow elsewhere on reasonable terms, and furnishes individual, on-farm guidance to the borrowers in sound management and methods.

Demand for these services continued heavy in 1947, both from veterans getting established in agriculture and from other farm families. By Nov. 1, 3,260 direct farm ownership loans amounting to $25,522,664, and 158,432 operating loans amounting to $79,859,764 were made. In the water facilities program, 674 families and 10 associations borrowed $956,130. About 40% of all the money loaned during the ten months went to veterans.

The cumulative record of assistance to returned servicemen by this agency and by the Farm Security administration shows that by Nov. 1, 1947, more than 58,000 veterans had borrowed $75,800,000 for farm operating needs, while 5,293 had borrowed about $41,000,000 to buy, enlarge or develop farms. (D. B. L.)

**Farm Income:** *see* AGRICULTURE; INCOME AND PRODUCT, U.S.

**Farm Population:** *see* AGRICULTURE; CENSUS DATA, 1947.

**Farm Security Administration:** *see* FARMERS HOME ADMINISTRATION.

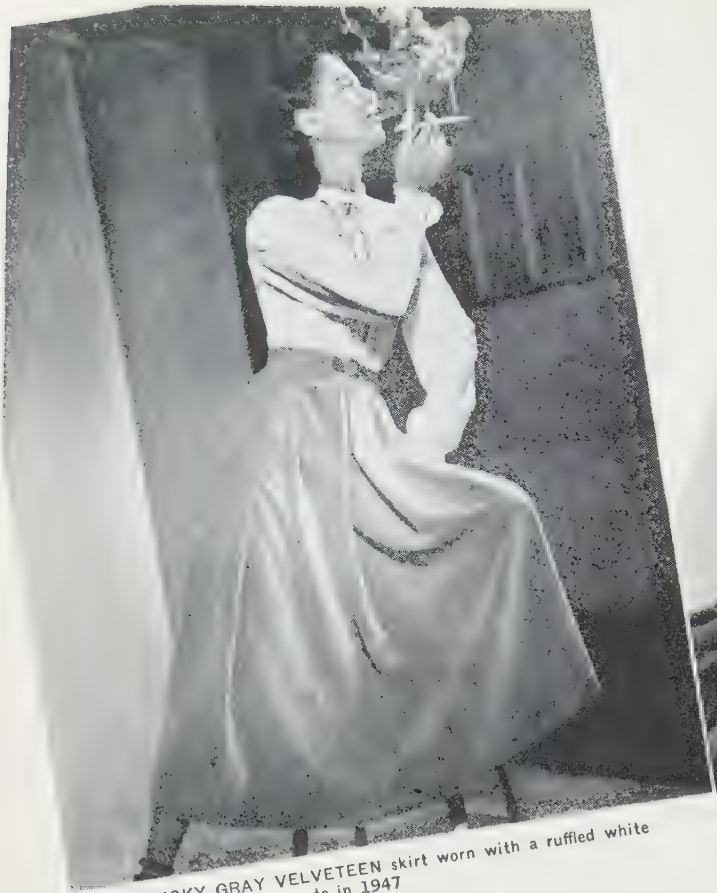
## Fascism.

In 1947 a slight revival of fascist forces was noted in Italy. While *Il Fronto del' Uòmo Qualunque* (The Front of the Common Man) movement under the leadership of Guglielmo Giannini which had rallied fascist sentiment in 1946 disintegrated, new men and movements came to the fore, like Emilio Patrissi, who published a paper *L'Ora d'Italia,* and the *Movimento Socialle Italiano,* a movement which stressed above all the proletarian and socialist revolutionary features inherent in fascism and published a paper called *La Rivolta Ideale.* The fascist groups in Italy were, however, so far too loosely organized and disunited without any central leadership to present a serious problem. They fed, like the communists, on the general dissatisfaction prevailing in Italy. On Oct. 28 Giannini resigned the presidency of the *Uòmo Qualunque* because his flirtations with communism had brought him into conflict with the majority of his group led by Enzo Selvaggi. The 25th anniversary of the march on Rome that put fascism into power passed without any major demonstrations. Even less organized, though undoubtedly persistent, was the surviving fascist sentiment in Germany, which remembered the "glorious days" of the Hitler regime when Germany aspired to world domination.

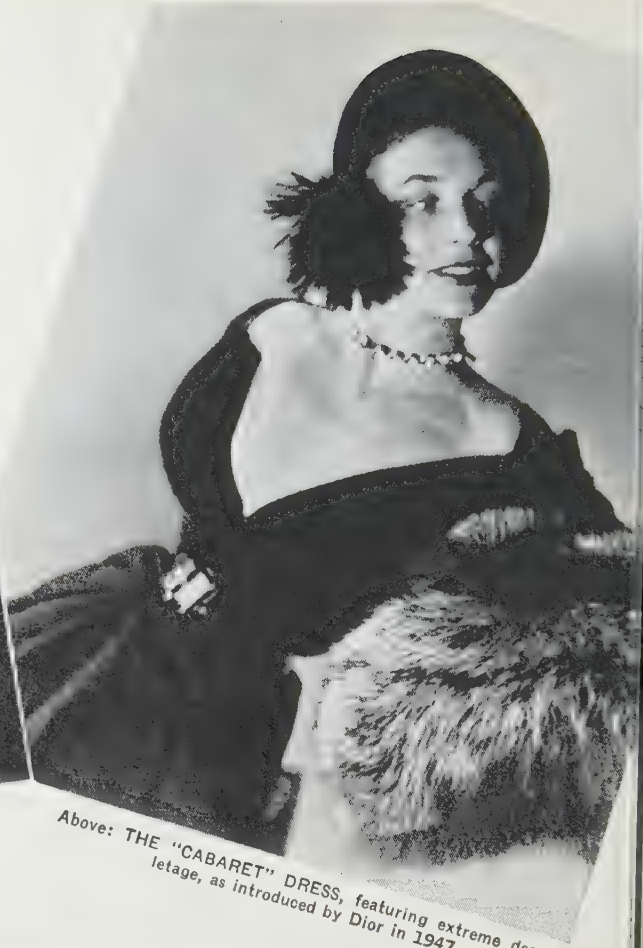
An outspoken fascist regime was in power in Spain under Gen. Francisco Franco. The United Nations maintained its strictly negative attitude to this regime, the representatives of which did not participate in any of the international activities and functions nor were they invited to participation in the Marshall plan. On July 6 the Spanish government held a referendum in which the men and women of Spain voted on Gen. Franco's regime. As in all other totalitarian systems, the vote resulted in an almost unanimous approval of the regime.

There was also some revival of fascist activities under Sir Oswald Mosley in Britain. The anti-Semitism which his followers propagated fed especially on the assassination of British soldiers by Zionist terrorists in Palestine. On Sept. 18 the London Trades council asked the British home secretary for legislation making all fascist organizations and activity illegal and for Mosley's arrest. The home secretary replied that expression of opinion in Britain was free but that it must not amount to sedition. The preaching of racial and religious hatreds could be sedition, and in that case appropriate action would be taken. He believed that the existing powers were sufficient. The profascist organizations were most carefully watched. Should future developments show any defect in the law, the government would consider amendments.

The regime of President Juan Perón showed many elements of totalitarian regimes. President Perón on July 6 pledged his co-operation with other peace loving nations to aid the world toward a secure peace and asked for "the eradication of capitalistic and totalitarian extremism, whether of the right or of the left." He pleaded for a world in which "crude exploitation, destruction, hatred and social injustice shall be forever banished." This speech was broadcast throughout the world in many languages and was made a compulsory discussion subject

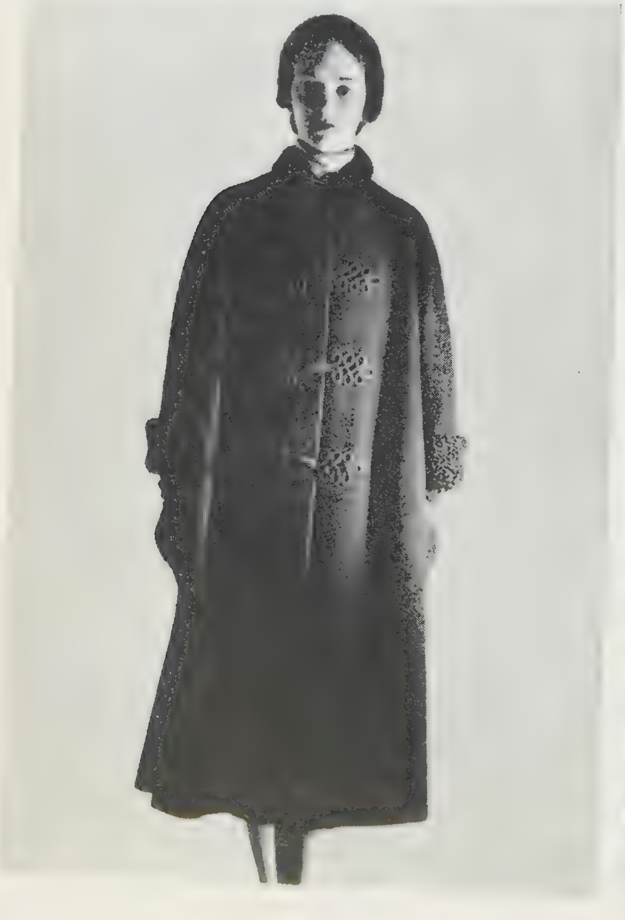


Above: SMOKY GRAY VELVETEEN skirt worn with a ruffled white blouse, a popular fashion note in 1947

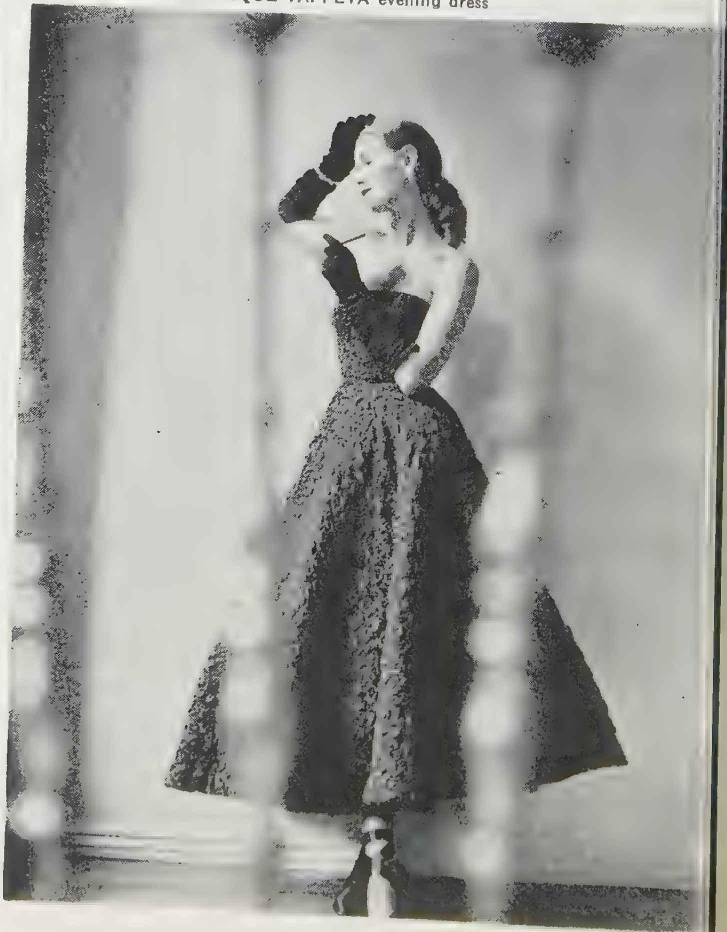


Above: THE "CABARET" DRESS, featuring extreme decolletage, as introduced by Dior in 1947

Below: THE NEW LENGTH domino coat widely shown in 1947



Below: STRAPLESS CLOQUE TAFFETA evening dress



in Argentine schools. President Perón was especially popular with the workers for his Declaration of the Rights of the Worker and his many measures of social security and for raising wages. Colonialism for Argentina was being ended by the buying out of the foreign owners of public utilities. In this process of furthering economic democracy, political democracy suffered in Argentina. Outward manifestations resembled those of other totalitarian countries. The rhythmic shouts of "Tito!" in Yugoslavia were matched by "Perón!" in Argentina, and huge portraits of the president became as much used as similar portraits in the eastern European states. Attempts were also made to subject the universities to governmental control, but greater freedom of protest and counteraction remained than in totalitarian countries. (*See* also ANTI-SEMITISM; ARGENTINA; COMMUNISM; DEMOCRACY; GERMANY; ITALY; RUMANIA; SPAIN.)

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## Fashion and Dress.

In 1947 fashion made headlines. Never, since the short-skirted era of the '20s, had there been so much discussion of women's dress. In the spring openings in Paris, a new couturier, Christian Dior, opened his dressmaking house and his designs sent an electric shock into the fashion picture. They crystallized and dramatized a trend that had started before World War II, but was interrupted by the exigencies of wartime conservation. Instead of the square-shouldered, flat-hipped, straight-skirted line that had been in fashion for a decade, the new silhouette called for natural, sloping shoulders, tiny waists, rounded hips, often padded to increase the natural curve. Day skirts were longer; evening skirts shorter. Suit skirts hit new lows—averaging about 12 in. from the floor. Many of the new evening dresses were cut ankle length or shorter. In U.S. summer sports fashions the silhouette was interpreted in full-skirted cotton dresses, made in various pale shades. But the new fashion did not become a general fashion until the autumn. In September the "New Look," as it was dubbed by the press, became front-page news. Autumn suits had fitted jackets, shoulders unpadded or lightly padded. Some of the jackets had peplums padded with buckram to emphasize the little waist and the rounded hip. Some skirts were cut straight, but the newest had fullness, created by unpressed pleats, sunburst bias pleats or by a circular cut, which sent the skirt spinning when in motion. The style was hotly debated. Advocates of the "New Look" compared the new suits with the Currier and Ives skating girls; opponents thought the shoulders droopy and mourned the disappearance of legs. But the "New Look" won out. Femininity had crept into fashion. Every natural curve in the woman's figure was accented. The shorter evening dress was built on the same lines. But whereas in past years, the informal dinner dress was almost invariably black, now black had a rival. Coloured slipper satins were widely used—pale blue, cat's-eye green, burgundy, cocoa, steel gray. Instead of black taffeta there was a wave of brown taffeta. Meanwhile, debutantes continued to wear full-length dresses for dancing—huge-skirted ball gowns in the romantic tradition, often strapless, and worn with long court gloves pulled well above the elbow and glittering rhinestone tiaras. In Europe fabric industries began to revive. French and Italian silks, and Swiss silks and embroidered organdies, again flowed to the United States. England, in a drive to step up exports for foreign exchange, contributed fine woollens.

Hats took many turns, but in general continued to be small, complementary to the silhouette. In the autumn these hats began to tip impudently over one ear; pill boxes and berets in bright red velvet, cocked well to one side, became a popular fashion. The desire for a tiny waist begot a new kind of undergarment—girdles specially shaped to accent the womanly curves, waist bands and boned bodice-brassieres to flatten the midriff and cinch in the waist.

The flat-heeled, ballet-type shoe did not disappear; but the season saw more high-heeled slippers, with closed toes and ankle straps built up and up to decorate the leg, now revealed by shorter evening dresses. Cultured pearls were sold in great numbers and once again women wore long chains of pearl beads, a revival of a fashion of the '20s. Dog collars and necklaces made of huge solitaire rhinestones were worn with evening dresses.

From the French Riviera came news of shocking bathing suits, reduced to the bare minima—a tiny brassiere and a diaper drape tied on either hip. But in America, bathing girls went back to an old beach fashion—the one-piece maillot made in white or in brilliant colours and dazzling California prints.

In the year of 1947, when a large part of the world was strictly rationed or wearing old clothes mended for the last time, it is curious to note that fashion did a loop-the-loop and decided to escape from reality. A *fin de siècle* elegance, extraordinary luxury and a determined romanticism characterized the year's creations, even those that came from the designers in Europe. (*See* also FURS.) (C. SN.)

**FBI:** *see* FEDERAL BUREAU OF INVESTIGATION.
**FCA:** *see* FARM CREDIT ADMINISTRATION.
**FDIC:** *see* FEDERAL DEPOSIT INSURANCE CORPORATION.

## Federal Bureau of Investigation.

During the 1947 fiscal year ending June 30, there was a sharp increase in FBI activities aimed at protecting the internal security of the United States and safeguarding the rights and civil liberties of its citizens. The Atomic Energy act of 1946 placed upon the FBI responsibility for determining the character, associations and loyalty of employees of the Atomic Energy commission and of other persons having access to restricted atomic energy data.

Significantly increased activity in several major criminal categories was apparent during 1947. FBI investigations resulted in 11,812 convictions representing 96.8% of all cases brought to trial. In FBI cases, sentences totalling 27,210 years, 8 months, were meted out. Fines, savings, recoveries and claims adjusted in favour of the government amounted to $63,638,153.

Results of investigations in several of the specific categories during the fiscal year were as follows:

**Bank Robbery.**—There were 105 convictions for bank robberies, burglaries and larcenies in violation of the Federal Bank Robbery act resulting in sentences totalling 1,081 years, 5 months. Fines and recoveries amounted to $131,407 and 33 fugitives were located. During the year 96 bank robberies, 79 bank burglaries and 26 bank larcenies within FBI jurisdiction were reported.

**Crime on the High Seas.**—Investigating crimes committed on the high seas within the admiralty and maritime jurisdiction of the United States and outside the jurisdiction of a particular state, the FBI secured 440 convictions. Sentences totalled 320 years, 6 months; fines, savings and recoveries aggregated $10,344. Eighteen fugitives were located.

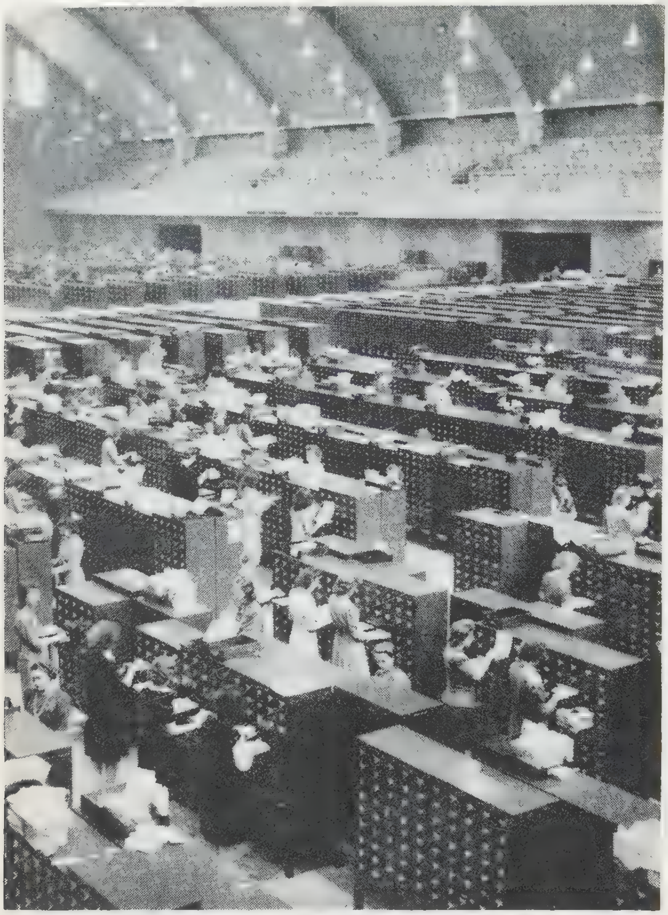
**Extortion.**—Sentences totalling 242 years, 2 months, were given and fines amounting to $1,200 were assessed for violations of the Federal Extortion statute. Twenty-one fugitives were apprehended.

**Federal Reserve Act.**—More than $4,250,000 was involved in the 398 cases of possible embezzlement reported by banks covered by the act. There were 114 convictions resulting in sentences totalling 369 years, 11 months. Fines of $86,301 were levied; savings and recoveries amounted to $553,525.

**Fraud against the Government.**—Cases in this category included primarily frauds perpetrated in connection with the war effort and those arising from the disposal of war surpluses. The number of investigations of the latter type had steadily increased since passage of the Surplus Property act in 1944. Prosecutions during the 1947 fiscal year resulted in 333 convictions with sentences of 370 years, 8 months. Fines, savings and recoveries amounted to $2,862,611, and 9 fugitives were located.

**Kidnapping.**—All 26 kidnappings reported during the year were solved. In the previous fiscal year there had been only 13 recorded. Cases brought to conclusion during the 1947 fiscal year resulted in 40 convictions with sentences of 386 years and 2 life terms.

**Motor Vehicle Theft.**—Recoveries of stolen motor vehicles transported interstate in connection with National Motor Vehicle Theft act investiga-



IDENTIFICATION division of the Federal Bureau of Investigation, where more than 104,000,000 fingerprints were on file in June 1947

tions far exceeded those for any prior year. There were 12,324 stolen vehicles valued at $11,336,642 recovered. Sentences totalling 12,991 years, 3 months, and fines amounting to $29,735 were assessed as a result of 4,668 convictions in this category. During the prior year only 3,614 had been convicted. There were 698 fugitives located in the 1947 fiscal period.

**Renegotiation Act Claims.**—Renegotiation act civil cases arose from suits by contractors for amounts refunded by them under protest as excessive profits when their war contracts were renegotiated by a War Contracts Price Adjustment board. Such claims investigated by the FBI during the 1947 fiscal year resulted in adjustments in favour of the government amounting to $38,876,100.

**Selective Service.**—During the 1947 fiscal year, convictions totalled 1,216, with sentences aggregating 1,861 years, 4 months. Fines amounted to $108,878, and 1,065 fugitives were located.

**Theft from Interstate Shipments.**—The high level of investigations and convictions experienced in the previous fiscal year was exceeded in 1947; 1,210 convictions resulted in sentences of 2,532 years, 6 months, and a total of $672,153 in fines, savings and recoveries. There were 108 fugitives located.

**Theft of Government Property.**—Prosecutions for violations of the several federal statutes covering theft, embezzlement or illegal possession of government property resulted in 1,263 convictions and sentences of 2,280 years, 3 months. Fines totalled $145,178 and recoveries $396,067; 72 fugitives were located.

**Treason.**—One conviction for treason was recorded. In July 1947 the defendant was sentenced to life imprisonment and a $10,000 fine was assessed.

**White Slavery.**—The 209 convictions constituted a marked increase over the 169 recorded in the preceding fiscal period. Sentences imposed totalled 614 years, 6 months, and fines aggregated $33,400. Ninety-five fugitives were located.

**FBI Laboratory.**—Scientific examinations in the FBI laboratory totalled 73,753. Specimens of evidence examined numbered 63,336, of which 46,293 were submitted in connection with FBI cases and 1,893 were received from other federal agencies. Nonfederal agencies, principally local and state police who received this service free of charge, submitted 15,150 specimens.

**Identification Division.**—On June 30, 1947, there were 104,696,999 fingerprint cards in the files of the Identification division, 3,329,937 of which were received during the 1947 fiscal period. Of the prints in file, 16,786,862 represented the arrest records of criminals and suspects.

**Police Training.**—At the request of local authorities, the FBI conducted and participated in 1,785 general police-training schools attended by approximately 89,250 officers. Specialized training was afforded to 8,850 other officers attending 157 strategically located schools. Twelve statewide administrative schools were attended by approximately 1,500 police executives and officials. During the year 449 law enforcement conferences sponsored by the FBI were attended by more than 31,000 officers. also CHILD WELFARE; CRIME; JUVENILE DELINQUENCY; KIDNAPP POLICE; SECRET SERVICE, U.S.) (J. E. H

## Federal Communications Commission.

Radio velopm in 1947 had particular international as well as domestic nificance.

Of major importance were agreements reached by 78 nati represented at the International Telecommunications conferer held in the United States. In the first assembly of its kind a the beginning of World War II, these sessions rewrote Madrid Convention of 1932 and the Cairo Regulations of 19 The results were expected to ensure more economical and u form use of frequencies, with due recognition of electronic other developments.

The demand for domestic radio facilities continued unaba Besides broadcast and other familiar services, radio was be used to supplement, even replace, telephone and telegraph w lines. The public could converse to and from moving land, and air vehicles. Radar and other wartime devices, adapted peacetime use, were proving invaluable to marine and aviat navigation. It had even become necessary to provide frequ cies for medical diathermy and industrial heating equipme whose emissions would otherwise interfere with communicat services.

Licences and other authorizations outstanding with the F eral Communications commission approximated 575,000. T figure included 120,000 radio stations in 40 categories, incl ing 4,000 broadcast, 40,000 nonbroadcast and 80,000 amat stations. In addition, there were 340,000 commercial ra operators, 85,000 amateur operators and 35,000 special aircr authorizations.

In the broadcast field, the number of licensed standard (a plitude modulation or AM) stations approximated 1,500, w about one-third that number additionally under constructi The situation in AM caused the commission to make an e nomic study of standard broadcasting, which was releas Nov. 4.

Frequency modulation registered its greatest advance, w more than a thousand FM stations licensed or authorized, which number more than 300 were on the air. Service to mo than 500 communities throughout 47 states was in prospe There was a spurt in FM receiver production, and devices we available to enable AM sets to receive FM broadcast.

Authorized television outlets exceeded 70, with service pr jected for 40 cities in 25 states. The commission, after exte sive public hearings, concluded that further experimentati was necessary before colour television could be commercialize More than 60 stations were engaged in this and other televisi experimentation.

Facsimile operation was still experimental pending agreeme by broadcasters and manufacturers on standards of equipme and processes.

The nonbroadcast services grew in types of services as we as in number of stations. Most of these were devoted to t protection of life and property. The largest group comprise the amateurs. Next in numerical order came aeronautical, wi 16,000 stations, followed by 11,000 ship and other marine st tions; 3,500 police stations; 3,000 experimental stations; 2,0 public utility stations; 650 forestry stations; 340 provision stations; 130 special emergency stations; more than 100 st tions each for the railroad and geological services; also statior for fire departments, relay press, motion picture, state gua and various other purposes.

Authorizations for some of these services covered the use many mobile units. For example, 25,000 radio-equipped vehicle were testing two-way radiotelephone service. Short-distance communication for industries and citizens was contemplated.

Radio was also being utilized to connect isolated places with the telephone system. In some rural areas telephone messages were "hitch-hiked" over local electric power lines. Coaxial cable and microwave relay were supplementing wire systems between certain large cities, besides holding promise for FM and television network operation.

Radiotelephone contact was available with 63 countries, and 90 foreign points had direct radiotelegraph service. (*See* also RADIO.) (P. A. W.)

## Federal Council of the Churches of Christ in America.

In 1947 two new areas of service were entered by the council, marked by the creation of the department of the church and economic life and the department of pastoral services. A national study conference on the role of the church in economic affairs was held in Pittsburgh, Pa., in February, attended by 300 delegated representatives drawn from the ranks of management, labour and agriculture as well as from the clergy. The department of pastoral services inaugurated a two years' survey and study of the ministry of the church to older people.

Overseas reconstruction and relief constituted a major interest, carried on through Church World Service, Inc. Food, clothing and other supplies were raised by the co-operating churches and distributed in Europe and Asia by the churches to the value of approximately $1,000,000 per month.

In the educational field, strong emphasis was placed on work in behalf of world order. A statement on "Soviet-American Relations" received wide attention. The Commission on a Just and Durable Peace, headed by John Foster Dulles (*q.v.*), was merged into a permanent department of international justice and goodwill.

The problems of the rural community received attention in a National Convocation of the Rural Church held in Rochester, N.Y., in November. Local conferences on problems of family life were held widely. Interracial "clinics" were a feature of the council's social work program, designed to bring about co-operation between white and Negro groups in community life.

At least one religious program was broadcast over a national network throughout the year. The department of evangelism gave leadership to a series of Christian missions in college and university centres.

An office was maintained in Washington, D.C., for the purposes of providing the churches with fortnightly information about governmental and legislative matters of interest to religious workers.

A new office was opened in Atlanta, Ga., concentrating its efforts on assisting southern communities to form councils of churches for co-operative service.

Co-operating with the Federal council were 600 local and state councils of churches in all parts of the country. The council was also closely, though unofficially, linked with the World Council of Churches, in process of formation. The Federal council was host to several distinguished church leaders from other lands, including Pastor Martin Niemoeller and Bishop Otto Dibelius of Germany.

In Washington, D.C., a building was acquired, through the work of the General Commission on Chaplains, as a memorial to the Protestant chaplains in the army and navy who lost their lives in World War II and also as a permanent office for the activities of the churches in behalf of the chaplains.

The council in 1947 was made up of 25 national denominations—22 from the Protestant, 3 from the Eastern Orthodox family. Their combined membership was 28,000,000.

*Information Service* was published weekly and the *Federal Council Bulletin* monthly.

Headquarters were at 297 Fourth avenue, New York city, N.Y. The officers during the year were: president, Charles P. Taft; vice-president, Bishop John S. Stamm; treasurer, Harper Sibley; general secretary, Rev. Samuel McCrea Cavert. (S. McC. C.)

## Federal Deposit Insurance Corporation.

During the calendar year 1947, as during the two preceding years, no bank depositor in the United States experienced a loss as the result of banking difficulties. No insured bank had been placed in receivership from May 1944. During the calendar year five banks received an advance from the Federal Deposit Insurance corporation which facilitated the merger of each bank with an insured solvent bank.

During the year the corporation began retiring its original capital stock under provisions of public law 363 from the surplus of the corporation in excess of $1,000,000,000. On Sept. 9, 1947, the original subscription of the federal reserve banks, amounting to $139,000,000, was retired in full. By the end of the year nearly $50,000,000 of the $150,000,000 of stock held by the U.S. treasury had been repaid.

The contingent liabilities of the corporation as an insurer of deposits continued to increase during the year 1947 as total deposits in the 13,600 insured banks increased moderately. Both demand and time deposits of individuals and businesses expanded although at a less rapid rate than in the previous year. There was a further decline in deposits of the U.S. government, which by the end of the year had been reduced to approximately their prewar total.

During 1947 the corporation granted charters to 207 new federal credit unions, cancelled 159 charters and examined the majority of the 3,900 credit unions in operation.

The chairman of the board of directors of the Federal Deposit Insurance corporation was Maple T. Harl, and Preston Delano, comptroller of the currency, was vice-chairman. On April 9, 1947, H. E. Cook became a member of the board, succeeding Phillips Lee Goldsborough, who died on Oct. 22, 1946. (*See* also BANKING.) (M. T. H.)

**Federal Home Loan Bank:** *see* HOUSING.
**Federal Housing Administration:** *see* HOUSING.
**Federal Income Tax:** *see* TAXATION.
**Federal Land Banks:** *see* FARM CREDIT ADMINISTRATION.

## Federal Mediation and Conciliation Service.

The Labor Management Relations act, 1947, created an independent agency known as the Federal Mediation and Conciliation service, and transferred to the new agency all mediation and conciliation functions previously delegated to the secretary of labour or the U.S. conciliation service.

The act stresses the desirability of labour and management and the states and communities in which they operate assuming increased responsibility in the maintenance of industrial peace.

For the first time, in the industrial field outside the application of the Railway Labor act, federal legislation had defined the jurisdiction and the scope of operations of a conciliation and mediation service.

The new agency was to offer its services in any labour dispute in industries affecting commerce, either upon its own motion or upon the request of one or more of the parties to a dispute, provided: (1) it would not enter into any dispute affecting an establishment engaged wholly in intrastate commerce; (2) the service is directed to avoid attempting to mediate disputes which would have only a minor effect on interstate commerce if state or other conciliation services are available to the parties.

The service, under the act, is directed to make its facilities available in the settlement of grievance disputes only as a last resort and in exceptional cases. The service was to continue, however, to assist the parties to agree on voluntary procedures to settle grievance and other disputes.

The act also provides that the voluntary methods of resolving disputes, without resort to strikes, lockouts, or other coercion, to be suggested by the service should include agreed upon submission of the employer's last offer to a secret ballot of employees in the bargaining unit affected.

Although the parties to labour disputes are not obliged by law to accept suggestions of the service, for the first time in federal legislation, the act requires them to participate fully and promptly in such meetings as may be called by the service for the purpose of aiding in the settlement of disputes.

The service was to continue to suggest the names of arbitrators in labour disputes at the request of the parties. The service was also to continue to maintain a staff of qualified technicians who would be available to commissioners of the service for rendition of technical advice in the settlement of disputes.

The service was to handle its work through seven regional offices located in Boston, New York, Cleveland, Atlanta, Kansas City, Chicago and San Francisco. Assignments of commissioners to dispute cases were to be made by the regional directors, who would co-ordinate their operations with state and other local mediation agencies. (C. S. C.)

## Federal Power Commission.

Natural gas expansion was the outstanding public utility development of 1947. New interstate facilities proposed aggregated $666,700,000 as compared with $480,000,000 in fiscal 1946 and $164,100,000 in 1945. During the fiscal year ending June 30, 1947, the Federal Power commission issued 132 certificates authorizing new facilities valued at $271,500,000. This included the new Michigan-Wisconsin pipe line (total cost estimated at $130,000,000) to transport natural gas from Texas 1,500 mi. to certain Wisconsin and Michigan markets. Natural gas extension as far east as Philadelphia, Pa., was assured by purchase of the "Big Inch" and "Little Big Inch" pipe lines, built and operated during World War II for oil and gasoline transportation by the Texas Eastern Transmission corporation for $143,127,000, and their conversion to gas transportation. Hearings on the application of Trans-Continental Natural Gas company to construct a 1,300-mi. pipe line from south Texas via Atlanta, Ga., Washington, D.C., and Baltimore, Md., to the eastern seaboard, to supply natural gas to New York city were in progress. Tennessee Gas Transmission company, which during the war built and operated the 1,265-mi. pipe line from the Gulf coast of Texas to West Virginia, planned to build an extension via Albany, N.Y., to Boston, Mass., to supply natural gas to New England. Largest of all the projects completed in 1947 was the "Biggest Inch" pipe line, originating in the west Texas Permian basin, laid 1,300 mi. to California, constructed jointly by El Paso Natural Gas company and the Southern California Gas company and Southern Counties Gas company. Interstate Natural Gas completed a new line to Denver, Colo., while Panhandle Eastern Pipe Line company, Natural Gas Company of America, Cities Service Gas company, Northern Natural Gas company and Mississippi River Fuel corporation were greatly enlarging their facilities to increase the gas supplies of Detroit, Chicago, Kansas City, Minneapolis, St. Louis and other areas in Illinois, Indiana, Michigan, Iowa, Kansas and Missouri. Southern systems planned large expansions with new pipe li extending as far as Tennessee, Georgia and Florida. In months the commission authorized gas projects to serve cities and many smaller communities in 20 states.

Demand far exceeded supply in many areas, causing shorta that required severe restrictions and allocations of avail supply.

Power production reached an all-time high, rising to a t of more than 300,000,000,000 kw.hr. Utility production of e tric energy for public use in the 12 months ending Nov. the FPC reported, was 253,060,099,000 kw.hr., an increase 14.8% over the 1946 period; and industrial output was 50,6 858,000 kw.hr., making a total production of 303,671,957, kw.hr. Generating capacity was taxed to the utmost, rese capacity in many areas fell to 5%, power supply was "tight" some areas but few curtailments were reported and the in try as a whole met successfully the highest peak loads e imposed. Public utility generating capacity at the end of year reached approximately 52,000,000 kw. On Nov. 30 FPC reported that installed capacity of generating plants utility service totalled 51,823,922 kw., and industrial gene ing capacity, including railroad and railway plants, was 12,8 465 kw., making the nation's total generating capacity 64,6 387 kw.

To aid in augmenting power supply where shortages w threatened, the commission announced that it would autho emergency interconnections between electric systems where s plus power could be supplied or interchanged without subject participating utilities to commission jurisdiction; and such in connections were authorized in a number of areas, includ New England, Texas and the Pacific northwest.

Spurred by the growth in power requirements, the commiss received 111 new applications for licences authorizing wa power developments on streams under jurisdiction of congr or upon federally owned land. During the year 105 applicati were granted, making a total of 662 outstanding federal licen covering plants with installed capacity of 5,634,000 horsepo having a total cost of about $900,000,000. From the time c gress first assigned the commission responsibility for determ ing the power possibilities of river basins, 749 investigations been made involving rivers in 44 states, indicating that m than 80,000,000 kw. of additional generating capacity were tentially available at water-power sites which were capable economic development when power market conditions wo warrant. (J. W. Je.

**Federal Public Housing Authority:** *see* Housing.

## Federal Reserve System.

Monetary expansion and flationary pressures cont ued to be the primary problems confronting the federal rese system during 1947.

Late in the year the board of governors recommended congress that consideration be given to legislation which wo require all commercial banks, member and nonmember, to h as a temporary measure some percentage of their demand a time deposits, in a special reserve in the form of treasury b certificates and notes, or cash, cash items, interbank balanc or balances with federal reserve banks. It was proposed t the special reserve requirement be limited by law to a maxim of 25% on demand and 10% on time deposits. The propo was presented as an alternative to higher interest rates in stricting further bank credit expansion.

Major factors influencing the reserve position of mem banks during 1947 included the gold inflow, retirement of f eral reserve holdings of government securities from the treas surplus, and federal reserve purchases of government securities in order to maintain an orderly market. During most of the year excess reserves of all member banks ranged between $600,000,000 and $1,100,000,000 with a sharp increase to $1,590,000,000 on Dec. 30, resulting from large federal reserve support purchases in the last week of the year. The gold stock increased during 1947 by $2,230,000,000, permitting a lower level of total reserve bank credit during 1947 than in 1946. Money in circulation showed a slight decline. Retirement of federal reserve holdings of short-term securities by the treasury from a cash surplus had the effect of lowering member bank reserve balances, but this was offset by open market purchases of government securities by the federal reserve system as banks made adjustments in their reserve position.

The decline in government bond prices which began early in the fall was met during November and December by large support purchases of government bonds by both the federal reserve and the treasury. Treasury purchases for investment accounts in the two months amounted to $917,000,000 and federal reserve purchases of bonds maturing over 5 years amounted to $1,845,000,000 between Nov. 12 and Dec. 30. The effect of federal reserve support purchases on reserves was partially offset by retirement of federal reserve holdings of bills and certificates by the treasury and by net market sales of bills from the federal reserve portfolio. On Dec. 24 there was a sudden reduction in support prices at which federal reserve purchases of government bonds were made from premium prices to prices slightly above par for medium- and longer-term fully taxable treasury bonds.

Vigorous purchases in the market were made by the reserve system at the new support prices.

Important actions took place during the year in connection with federal reserve holdings of treasury bills. Effective May 1, the treasury adopted the procedure of accepting exchange as well as cash tenders in payment for new bills. The purpose of the changed procedure was to facilitate weekly refunding operations in bills, the reserve banks having held about $15,000,000,000 out of a total of $17,000,000,000 outstanding of treasury bills.

In July the federal open market committee of the reserve system directed the reserve banks to terminate the policy, which had been in effect from 1942, of buying all treasury bills offered to them at a fixed rate of $\frac{3}{8}$ of 1% per annum and to terminate the repurchase option privilege on treasury bills. This action was designed to restore the bill as a market instrument and give added flexibility to the treasury's debt management program.

The board of governors of the federal reserve system levied an interest charge on the federal reserve banks against the amount of federal reserve notes outstanding less the amount of gold certificates held as collateral security. The purpose of this interest charge was to pay into the treasury about 90% of the net earnings of the reserve banks, after providing for necessary expenses and statutory dividends. Payments to the treasury during 1947 were $75,000,000.

Instalment credit controls exercised by the federal reserve system ceased to be operative after Nov. 1, 1947, in accordance with a resolution of congress approved on Aug. 8, 1947. Instalment credit control had been in effect, under executive order of the president, from late in 1941. Later in the year, however, congress gave consideration to legislation again authorizing the board to regulate consumer instalment credit. The president had listed such legislation in his anti-inflation program. (*See* also BANKING; CONSUMER CREDIT.) (J. K. L.)

**Federal Savings and Loan Insurance Corporation:** *see* HOUSING.

**Federal Security Agency.** Significant developments during the year 1947 in the work of the Federal Security agency were expansion of its activities due to congressional approval of Reorganization plan No. 2 of 1946, progress made in the development of new programs established by congress, and significant legislative amendments affecting existing programs.

Reorganization plan No. 2 of 1946, which went into effect on July 16, 1946, abolished the three-member Social Security board, and transferred its functions and responsibilities to the Federal Security administrator. Administration of the social security program was delegated to a newly created officer, the commissioner for social security.

Under the plan, the children's bureau, exclusive of its industrial division, was transferred to the agency from the department of labour. The inclusion of this bureau's programs—research in problems of child life, maternal and child-health services, services for crippled children and child-welfare services—in the agency did much to simplify the co-ordination of these functions with the related health, welfare and educational activities of the other bureaus of the agency. It greatly facilitated steps being taken in the interest of improving federal-state relations.

Another transfer provided under the plan was that of the division of vital statistics from the bureau of the census. As the state statistics units were partially financed by the agency, the change simplified the administrative process in that the state vital statistics units thereafter dealt with one agency of the federal government. More important from a technical point of view is the progress which was made in correlating vital statistics with the public health services' morbidity statistics.

Progress was made in developing the new programs which were provided for in the closing days of the 2nd session, 79th congress. The Hospital Survey and Construction act of Aug. 13, 1946, provided the basis for securing basic information on U.S. requirements for additional hospital facilities, through grants of federal funds to the states for surveys of their needs and resources. With a growing body of information regarding need for facilities, it was anticipated that construction programs would soon be under way to expand the facilities badly needed for the care of the sick and injured.

Congress also recognized the need for greater federal support to research in mental health by passage of the National Mental Health act of July 3, 1946. Funds were provided for expanding mental health activities in the states. Congress also immediately provided funds for the preparation of plans and the acquisition of a site for the construction of research laboratories and a clinical research hospital.

The 1946 amendments to the Social Security act, approved Aug. 10, 1946, provided benefits to survivors of deceased World War II veterans and reconversion benefits to wartime seamen. They also enabled the states to provide unemployment compensation to maritime workers, and authorized increased grants to states for programs administered by the children's bureau and the bureau of public assistance. Increases in public welfare and other grants tended to offset increased living costs.

The states made strenuous efforts to improve their public school systems and in some cases made favourable adjustment in the wages of teachers. There were, however, many sections of the United States where schools remained closed because of the unavailability of teachers. In addition, all too frequently school facilities were either inadequate, obsolete or entirely lacking. The enrolment of veterans at schools and colleges continued to rise, with the result that the country's educational facilities were strained to the limit. Although congress provided for increased grants to states for vocational education, there remained much to be done to equalize educational opportunity for children throughout the nation.

The very substantial increases which congress provided for the various grant programs were expected to do much to offset cost of living increases to assistance beneficiaries, assist the states in improving child health and welfare, and increase the rehabilitation of injured persons into economic productivity. (*See* also PUBLIC HEALTH SERVICES.)

(O. R. E.)

## Federal Trade Commission.

The broad objective of the Federal Trade commission in enforcing the laws committed to its jurisdiction by congress is protection of both the public and industry against monopolistic, unfair and other harmful business practices.

The commission administers the Federal Trade Commission act, portions of the Clayton Antitrust act, the Wool Products Labeling act and the Webb-Pomerene act, and makes general investigations of economic conditions at the request of the president, the congress or upon its own motion. On July 5, 1947, it also began administering those sections of a new statute, the Lanham Trade-Mark act, which authorize it to apply to the commissioner of patents for cancellation of the registration of trade-marks which are deceptive, immoral or scandalous, or which have been obtained fraudulently or are in violation of other stated provisions of the act.

The commission in 1947 issued 48 complaints alleging violation of laws it administers and entered 55 orders to cease and desist from proved violations. These adversary proceedings were directed to preventing price-fixing agreements and restraint-of-trade combinations, illegal discriminations in price and otherwise, misbranding of wool products, and other unfair methods of competition and deceptive acts or practices in interstate commerce; and to safeguarding consumers by prohibiting false advertisements of food, drugs, cosmetics and curative devices, particularly those which might be injurious.

Where circumstances permit, industry members are given opportunity to eliminate certain unfair competitive methods or deceptive practices through voluntary stipulations to cease and desist or through establishment of trade practice rules. Under this co-operative procedure, the commission accepted 97 stipulations and promulgated trade practice rules for the household fabric dye, vertical turbine pump, doll and stuffed toy, and watch industries. Trade practice conference proceedings progressed for the establishment of rules for the following industries: cosmetic and toilet preparations, wholesale confectionery, rayon and silk converting, hand knitting yarn, office machine marketing, baby chick, watchcase, and rendering (inedible tallow and greases).

Commission reports to congress covered investigations of the trend of corporate mergers and acquisitions, the degree of concentration in the copper industry and international copper cartels, growth and concentration in the flour-milling industry, the sulphur industry and international cartels, and economic effects of grain exchange actions affecting futures trading during the first six months of 1946.

The commission completed reports presenting aggregate estimates of the financial condition and operating results of all U.S. manufacturing corporations for the first and second quarters of 1947. Prepared with the co-operation of the Securities and Exchange commission, the reports were based upon a sample of 5,468 corporations in 22 major industry groups and disclosed the relationship between investments, sales, costs and profits. Another report contained cost and profit data for manufacturing corporations during the war years, 1941–45.

There were 52 export trade associations, organized under the Webb-Pomerene law, registered with the commission. A
investigations, the commission recommended that two asso
tions engaged in the export of sulphur and screws, respectiv
readjust their business to conform to law. Pending inqui
involved associations exporting plywood, electrical appara
condensed milk products, and pipe fittings and valves.

Pointing to the postwar increase in corporate mergers,
commission recommended that congress amend the Clayton
"to prevent acquisition of physical assets as well as corpo
stock where the effect may be substantially to lessen comp
tion in interstate commerce." It also recommended an ame
ment to give Clayton act orders to cease and desist the sa
status as to finality and enforcement penalties as similar or
under the Federal Trade Commission act. (R. E. F.

## Federal Works Agency.

The Federal Works agen
which contains three consti
ent units, the Public Buildings administration, the Public Ro
administration and the Bureau of Community Facilities, is
sponsible for the operation of a great many programs of pu
construction.

Public law 697, 79th congress, approved in Aug. 1946,
thorizes the Federal Works administrator to provide nonhous
surplus war structures and facilities to public and private n
profit educational institutions requiring them in order to fur
training or education to veterans under the G.I. Bill of Rig
The facilities to be provided may include classrooms, labo
tories, administrative buildings, infirmaries, libraries, and st
age and other facilities and equipment. This program, known
the Veterans' Educational Facilities program, is administered
the Bureau of Community Facilities. Of the $100,000,000
thorized to carry out the provisions of the act, $75,000,000
made available in the Third Deficiency Appropriation act, 19
plus unexpended balances from Lanham act funds.

As of Oct. 31, 1947, applications had been approved invo
ing outlays of more than $76,000,000. In addition, the bure
had transferred to the colleges surplus equipment having
estimated fair value of $46,000,000. An additional appropr
tion of $3,000,000 was made to be used exclusively for the d
assembling and transportation of structures to sites of colle
that agreed to re-erect the buildings at their own expense. T
federal funds provided were limited to $3 per square foot and
allocations could be made after Sept. 30, 1947. As of Oct.
1947, projects had been approved involving $2,825,000.

The Advance Planning program had been carried on un
title V of the War Mobilization and Reconversion act of 194
and administered by the Bureau of Community Facilities. Co
gress had appropriated $65,000,000 to be advanced to state a
local governments for the plan preparation of their public wor
exclusive of housing. The advances are repaid without inte
est when construction begins on the public works so planne
As of June 30, 1947, applications in the amount of more th
$61,000,000 had been approved for projects with an estimat
total cost of $2,300,000,000. After that date there had be
no authority for the making of new advances and the bure
was concentrating on speeding up the completion of plans.

Public law 233, 80th congress, approved July 25, 1947, pr
vides for the Disaster Surplus Property program. The a
authorizes the Federal Works administrator, upon declarati
by the president, to loan or transfer, with or without compens
tion, surplus war personal property to state and local gover
ments to alleviate damage and suffering caused by flood
other catastrophe.

During the first few months this legislation was invoked
provide assistance for Texas City, Tex.; following the floods
the Missouri and Mississippi valleys; for Vermont and Ne

Hampshire; in the hurricane areas of Louisiana, Mississippi and Florida; and following the extensive forest fire devastation in Maine.

Other programs administered during the year by the Bureau of Community Facilities include the Lanham act program of war public works and war public services in war-congested areas, which was in final liquidation except for a small program of financial aid to schools still overburdened with war-incurred enrolments; and public works and repair programs in the Virgin Islands and the Hawaiian Islands.

The Public Buildings administration constructs, maintains, operates and protects buildings used by the federal government, except military establishments, and leases, controls and assigns office space in federally-owned and federally-leased buildings. It also acquires sites for federal buildings and disposes of surplus government real estate. As authorized by public law 413, approved June 14, 1946, working drawings and specifications were completed for certain government buildings to be erected on government sites, including 16 postal buildings and a border station at the Bridgewater boundary in Maine. During fiscal 1947 the office of the supervising architect also prepared designs and working drawings and in some instances construction contracts for a replacement program survey at St. Elizabeth's hospital and for the design of four buildings at Howard university, in Washington, D.C.; a radio monitoring station at Laurel, Md., for the Federal Communications commission; four new hangars and an extension to the heating plant at the Washington National airport and working drawings and material lists for repairs of certain U.S. embassies.

As the result of extensive research and with the collaboration of many PBA technical specialists, six basic manuals were issued setting forth detailed statements of PBA standards and methods. The work program of the office of the supervising engineer included 78 projects listed and a total of 64 contracts awarded for alterations and remodelling government-owned and government-leased buildings. Project contracts were also awarded to provide increased students facilities at institutions enrolling veterans under the G.I. Bill of Rights. In its regular construction program this office carried on during the year the extension of the U.S. mint at Denver, Colo., construction of the Memorial Laboratory of Infectious Diseases, at Bethesda, Md., and construction of Federal Office Building No. 4 and temporary vault at Suitland, Md.

The Public Roads administration reported the volume of federal-aid road construction undertaken and completed in fiscal year 1947 was only moderate in comparison with that of prewar years, but that substantial progress had been made in advancing projects toward the construction stage and in the letting of contracts. Notable work was done in planning express highways through cities and in planning and constructing secondary roads. Of signal importance in the longer view was the continued co-operation between the state and the federal government in the selection of routes to comprise the 40,000-mi. national system of interstate highways.

During the year 7,929 mi. of highway of all classes of federal-aid construction were completed as compared with 2,964 mi. in 1946 and 12,936 mi. in 1941. Programs approved during the year amounted to $932,362,226 for 24,720 mi. of highway, of which $628,005,700 was for 7,982 mi. of improvement of the federal-aid system and $269,492,299 was for 15,620 mi. of secondary road. Total payments to the states during the fiscal year for work done amounted to $193,634,155.

All construction contracts awarded, involving state or federal funds, totalled $817,742,000 for 47,163 mi. of this construction. As at the end of the previous year, a large volume of construction plans was completed and remained on the shelf ready for use when conditions would permit.

As in the previous fiscal year progress was not at the rate contemplated in the federal legislation.

At request of the president the Federal Works administrator spearheaded a conference attended by delegates from the 48 states and 37 foreign countries to consider an action program to reduce losses by fire. It was called the president's conference on fire prevention and subsequent conferences at state levels were called by the governors of Kentucky, Massachusetts, Minnesota, New Hampshire, Ohio and Texas.

Notable decreases in traffic deaths and injuries followed the president's first highway safety conference according to reports at a second conference held in Washington, D.C., during the year. The Federal Works administrator also called this conference. It was reported that the 1946 fatality rate of 9.8 deaths per 100,000,000 mi. was the lowest in automotive history. (*See* also HOUSING.) (P. B. F.)

**Federated Malay States:** *see* MALAYAN UNION AND SINGAPORE.

**Federation of Labor, American:** *see* AMERICAN FEDERATION OF LABOR.

## Feldspar.

Sales in the United States of crude feldspar of domestic origin advanced sharply from 417,820 short tons in 1945 to 569,386 tons in 1946. This quantity increase of 28% was accompanied by a rise of 36% in value. Sales of ground spar increased in much the same proportion—from 381,728 tons to 470,199 tons. Imports were relatively small, 14,924 tons in 1945 and 16,365 tons in 1946. The pottery industry used 38% of the total and the glass industry 62%.

**Canada.**—The production of feldspar in Canada rose from 30,246 short tons in 1945 to 36,369 tons in 1946. About half of the output is exported, mostly to the United States, only to be replaced by a similar amount of imports. (G. A. Ro.)

## Fencing.

The U.S. national fencing championships of 1947 at New York city attracted a record entry in both team and individual events. The Salle Santelli of New York won the first three team events—sabre (Tibor Nyilas, George Worth, Dean Cetrulo and Miguel de Capriles), épée (José de Capriles, Norman Lewis, Ralph Goldstein) and three-weapon (José de Capriles, Dean Cetrulo, Tibor Nyilas). The New York

FOIL MATCH between Abraham Balk (left) and Robert Kaplan, of New York university. Balk won the National Collegiate Athletic association's foil and épée championships held in Chicago in 1947

Athletic club retained the foil team title with Warren Dow, Dernell Every, Sylvio Giolito and Rudolph Ozol. The Fencers club retained the women's team titles with Helena Dow, Maria Cerra, Ruth Maxwell and Henrietta Brackley.

In the individual championships two former champions regained the titles they once held. Dean Cetrulo of the Salle Santelli won the men's foil title which he last held in 1941. Warren Dow of the New York Athletic club (1942 and 1943 champion) was second and José de Capriles, defending champion, was third. Helena M. Dow defeated the almost perpetual titleholder, Helene Mayer. Miss Mayer took second, and third place went to the 1944 champion, Madeline Dalton of the Salle Santelli. James Strauch of the Salle Montague of New York won the épée event with Albert Wolfe, defending champion, second and Carlos Agostoni of Mexico third. James Flynn of the New York Athletic club emerged with his first national sabre title. Dean Cetrulo was second and the defending champion, Tibor Nyilas, third.

The year 1947 saw the first international tournament held in the United States since the British-American match for the Thompson trophy in 1934. Four teams from the United States and a team each from Mexico and Cuba competed in three weapons for the Wilkinson Sword trophy. The winning team consisted of the then United States national champions, José de Capriles, Albert Wolfe and Tibor Nyilas.

In the Pacific coast championships at San Francisco, Edward Carfagno retained his foil title and regained the sabre championship he lost in 1946. A newcomer, Bruce McBirney, won the épée championship. Helene Mayer retained the women's foil championship.

The midwest championships were held in Chicago. The Michigan division swept the men's events with Byron Kreiger successfully defending the foil crown, Gregory Flynn winning the épée event and Howard Hayden the sabre. Mary Grenander won the women's championship.

The first intercollegiate championships of the National Collegiate Athletic association were held in Chicago; Abraham Balk of New York university won the foil and épée championships and Oscar Parsons of Temple university won the sabre championship. (W. A. Dw.)

## Fertilizers.

Estimates indicated that about 16,500,000 tons of commercial fertilizer were used on more than 3,000,000 of the 6,000,000 U.S. farms—a new high record of consumption. With one exception, consumption had increased every year since the 1932 depression low of 4,385,000 tons. In 1937 it rose to 8,179,000 tons but dropped the following year to 7,467,000 tons. In 1943 consumption exceeded 10,000,000 tons for the first time, and in 1946 it approximated 15,000,000 tons.

Unfortunately, decreases in production of other countries totalling 3,201,000 tons almost matched the U.S. increases. The drop in Germany alone was about 1,500,000 tons. The International Food committee of the United Nations Food and Agriculture organization earmarked 61,000 tons of nitrogen from the U.S. commercial supply to send to about 20 nonoccupied countries. Army shipments to occupied countries were not disclosed, but the yearly army production program called for about 250,000 tons. Representatives of U.S. fertilizer manufacturers stated that commitments had been made to ship abroad 28% of the total U.S. supply of fertilizer nitrogen including ordnance production.

**Safety Problems of Ammonium Nitrate.**—In 1947 the industry suffered a serious setback insofar as ammonium nitrate, one of its agronomically superior nitrogen carriers, was concerned. This compound contains a total of 32½% of nitrate and ammonia nitrogen, the former being quickly and the latter m slowly available to crops. Produced chiefly in 12 governm built or financed nitrogen-fixation plants in U.S. and Can constructed primarily for war purposes, it is readily explos by fire. This product was being loaded onto the French s "Grandcamp" on April 16 when fire produced an explos which caused the Texas City, Tex., disaster. This tragedy addition to a minor ship explosion at Brest, France, during summer of 1947, led to increased safety measures for hand the compound.

**Government Competition.**—Bombing and postwar mantlement caused a temporary worldwide nitrogen short aggravated by an unprecedented (and probably impermane demand and lack of customary peacetime imports. Press brought upon the United States to help make up the short resulted in re-expanding U.S. government production.

In 1946 and 1947 intensive efforts were made to force ac tional legislation that would increase government competit with the private fertilizer industry. The Farmers union and American Farm bureau sponsored a bill in the U.S. senate un the name of National Soil Fertility Act of 1947 to make av able to the Tennessee Valley authority millions of dollars construction of a large plant at Mobile, Ala., and "other pla on a nation-wide scale." A house bill presented in Nov. 1 would appropriate $100,000,000 to place the entire fertili industry under federal government control, to be exercised the secretary of agriculture.

Aside from the pending bills, two conditions created unus problems. The first arose from the continued use of unrevok wartime power under which the government had put into eff "procedures designed to assure export" of nitrogen carriers accordance with its commitments to particular countries. T second arose from the Marshall plan and the report of Paris Conference on European Economic Co-operation (Eu pean recovery program) which contemplated that Europe fertilizer production, particularly in the western zones of G many, would be inadequate until 1950–51. Conditions in Russian zone were not known, although about two-thirds the nitrogen and potash-producing capacity of Germany w allocated to the soviets.

**Research Progress.**—During 1947 excellent progress w made in the inauguration, co-ordination and prosecution of ag cultural, chemical, physiological and technological resear Direct relations were found between fertilization and the in dence of plant diseases in certain crops. Ammonia solutio from tanks were used commercially for the first time to fertil cotton and pastures in the Mississippi delta area, and sat factory equipment was developed to apply both anhydrous a aqueous ammonia.

A new slow-acting nitrogen carrier was developed by U department of agriculture soil scientists. Still in the expe mental stage in 1947, it is a combination of urea and formald hyde. Nitrogen is released gradually during the growing seas

Production of concentrated superphosphate (45% $P_2O_5$), fi made by a private manufacturer in 1907, was considerably e panded, and a continuous process for its manufacture was d vised by the Tennessee Valley authority. Great progress w made, especially with potatoes and tobacco, in determining t response to fertilization of soils having different nutrient leve

The necessity for using boron on a number of crops to obta higher productivity when grown on certain soils was firm established. The New Jersey Agricultural Experiment stati proved that fertilizers are best applied to orchards in ban instead of broadcast as had hitherto been the almost univers practice. The procedure reduced waste of phosphate and pota and also, to an extent, of nitrogen.

A committee of agronomists designated by the Plant Food Research committee of the National Fertilizer association worked out a formula to guide farmers in their expenditures for fertilizer. The general rule was that 10% of the prospective value of the crop might be spent for commercial plant food. (*See* also AGRICULTURE.) (C. J. BR.)

**FHA (Federal Housing Administration):** *see* HOUSING.
**FHLB (Federal Home Loan Bank):** *see* HOUSING.
**Fiction:** *see* AMERICAN LITERATURE; BOOK PUBLISHING; CANADIAN LITERATURE; ENGLISH LITERATURE; FRENCH LITERATURE; GERMAN LITERATURE; ITALIAN LITERATURE; LITERARY PRIZES; RUSSIAN LITERATURE; SPANISH-AMERICAN LITERATURE; SPANISH LITERATURE.

**Figl, Leopold** (1902– ), Austrian statesman, was born on Oct. 2, 1902, of a Lower-Austrian farmer's family, was educated in Vienna and took a science degree at the high school of agriculture. An active Catholic strongly opposed to the *Anschluss,* he was arrested by the nazis after the occupation of Austria in March 1938 and held as a prisoner until 1943. He was rearrested after the attempt on Hitler's life in July 1944 and was charged with high treason as an Austrian resistance leader. Liberated by the Allies, Figl joined the new Austrian People's party, a reformed version of the former Christian Social party, which headed the poll at the first postwar elections on Nov. 25, 1945. After the elections Figl was designated as chancellor by Dr. Karl Renner, the new federal president, and formed his government on Dec. 19, 1945. Though the constitutional situation would have allowed him to govern with a People's party majority, Figl decided on an all-party national coalition, as more fitting the circumstances of his country under Allied occupation.

A politician of Christian Democratic principles, Leopold Figl fought for an improvement in the economic conditions of postwar Austria and for his country's case at various international meetings and conferences, especially at the Four Powers conference in London in Feb. 1947. (B. ME.)

**Figs:** *see* FRUIT.
**Fiji:** *see* PACIFIC ISLANDS, BRITISH.
**Filberts:** *see* NUTS.
**Financial Review:** *see* BUSINESS REVIEW.
**Fine Arts:** *see* MUSIC; PAINTING; SCULPTURE; etc.

**Finland.** An independent republic of northern Europe. Area, 130,159 sq.mi. Pop. (est. 1947) 4,000,000. Capital, Helsinki; pop. (est. Jan. 1, 1945) 331,192. Other principal cities: Turku (Åbo) (78,492); Tampere (85,168). Language and nationality, 90% Finnish, about 10% Swedish. Religion, Lutheran Christian. President after March 1946: Juho K. Paasikivi; prime minister: Mauno Pekkala.

**History.**—Finnish politics have been vigorous (to put it euphemistically) for many years, and in 1947 politics appeared to be the only relief from the backbreaking hard work of reconstruction and reparations. Even politics were largely a reflection of economic conditions. The cost of living index had risen 100 points in 1946 and by mid-1947 was up an additional 30 points to 567 (based on 100 for 1938). Inevitably the successive wage demands and attempts to keep things in balance produced differences of opinions. The coalition government of Mauno Pekkala, composed of six members from the communist Peoples' Democratic union, five from the Social Democrats, five from the Agrarians and one from the Swedish Peoples' party, at length resigned on April 11. The Peoples' Democratic union wanted wage controls abandoned and price controls strengthened, and the communists maintained this general position through the year. However, no other government could be formed, and on May 21 Pekkala agreed to continue in office with the old government. It had a rather peculiar organization, with ministers and "affiliate" or "partial" ministers.

Demands for new elections in the summer were overlooked, the government thinking it wiser to wait for the regular elections in 1948, propaganda for which was under way by September. The communists particularly attacked the Social Democrats as capitalists under the skin, and the Social Democrats drew closer together in opposition. Each of these parties held about one-fourth of the parliamentary seats chosen in 1945. They worked together somewhat in the government, but each group hoped for a decisive mandate for itself. Public meetings occasionally led to disturbances and arrests. Speech was really free, and freer still after the ending of the wartime censorship in November. A British visitor was amazed to hear Finns talk to one another, condemning Russians even in the presence of soviet officials.

Industrial wages almost kept pace with skyrocketing prices, but salaries did not. The civil service workers several times threatened to strike and at last, at the end of November, tied up transportation and many other activities for 61 hr. Another difficult problem for the government was the conduct of trials for men found guilty of establishing "dumps" of arms and ammunition. The Russians obviously wanted stern justice, but many people were involved and the trials dragged on and on.

A disaster for which the beleaguered government would not be held responsible was the drought which lowered water levels in streams below anything seen in 100 years, and thus curtailed Finland's water-power supply and electricity. In hope for the future, work progressed nevertheless on the damming of the Oulujoki river and plans to build on it seven new power stations.

On Sept. 19 the third year of reparations payments ended, and it was a year in which most demands were actually surpassed, bringing Finland's total payments so nearly up to requirements that the U.S.S.R. agreed not to charge fines for the items slightly in default. Three-year totals amounted to $127,000,000, or 42% of the amount to be paid altogether. This achievement was complemented by an increase of 50% in free foreign trade, and by the raising of industrial production to 86% of prewar.

Finland's application for admission to the United Nations was denied, though at first approved unanimously in the Security council. The trouble was only that the U.S.S.R. would not permit Finland and Italy to be admitted unless the soviet Balkan satellites were admitted at the same time, and the other powers would not agree. Finland did become a member of the International Health organization, the Food and Agriculture organization, the International Monetary fund and the International bank.

Relations with the U.S.S.R. continued to be good, at least on the surface. The peace treaty, signed in February, was ratified by Finland and by Britain in April and by Russia on Aug. 29. It became effective Sept. 15, and the Control commission then began to close out its work. The slight boundary adjustments still required were worked out by a special commission. Finland formally rejected the invitation to the Paris conference on the Marshall plan, but obviously regretted the split between east and west. Finland had a trade agreement with Britain and conducted about one-quarter of its total "free" trade with Britain (though the U.S. led in Finnish imports). In November a trade delegation went to Moscow to arrange for widened commerce with the eastern neighbour.

By the end of 1947 nearly 80% of the Finns from Karelia (ceded to Russia in 1944) who were entitled to land compensation in Finland had been provided for.

**Education.**—The school census of 1943–44 showed: 13,754 teachers; 46,232 pupils in city folkschools; 114,517 in provincial and rural lower folkschools; 211,588 in the upper folkschools; 69,910 in continuation schools; 1,049 in Finnish-speaking preparatory schools; 706 in Swedish-speaking preparatory schools; 2,621 in folk high schools; 2,735 who took the student examen; 8,348 registered at the University of Helsinki (1945); 1,370 at the technological institute; 383 at Turku university; 158 at the normal school; 666 at the school of commerce.

**Defense.**—According to the peace treaty of Feb. 10, 1947, the maximum strength of land army was to be 34,400; navy 4,500 (10,000 tons); air force 3,000 (60 aircraft). There was compulsory military service (350–440 days) for all men between 17 and 60. The conscription age was 20.

**Finance.**—The monetary unit is the markka; 136=$1.00. Government income, 1947, was estimated at $767,000,000 and expenditures at $736,000,000. Total debt on July 31, 1947: $852,000,000. Finland obtained a credit of $10,000,000 for purchase of surplus materials from the U.S. and British armies in Germany.

**Trade and Communication.**—Railways totalled 3,063 mi. and highways 19,705 mi. Late in 1947 through freight traffic was resumed by rail with western Europe, and railway transit traffic was re-established through the Russian-leased Porkkala district.

The trades figures for 1946 showed imports of $178,000,000 and free exports of $169,000,000, plus $69,000,000 in reparation and restitution payments. In the second quarter of 1947 the rate of free export was better than double the rate in the same period in 1946 and totalled 11,500,000,000 markka.

**Agriculture.**—Crops of 1946 were valued at $175,000,000, and consisted chiefly of hay, oats, rye, barley and potatoes. The 1947 crops were reported as 50% of prewar.

**Manufactures.**—Home market industry climbed to a volume index of 123 in Sept. 1947 (100=1935); export industry had recovered to a volume index of 82. Metal and machinery industry increased output 10-fold after 1935, and textile industry about 5-fold. The shift in emphasis was caused by the Russian reparation requirements.

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**Fire Insurance:** *see* INSURANCE.

## Fires and Fire Losses.

Losses by fire, including lightning, in the United States during 1947 amounted to $692,635,000, according to estimates of the National Board of Fire Underwriters. This figure compared with $561,487,000 for 1946 and $455,329,000 for 1945. Fire losses in 1947 exceeded those of 1946 by $131,148,000.

Outstanding losses increased this total, although the exact amount could not be estimated until a full statement was available. For instance, in the explosions and fires of April 16–18 at Texas City, Tex., losses were first estimated at $125,000,000 but were soon revised downward to $50,000,000 and were expected to produce about 10,000 claims.

Losses occasioned by forest fires in Maine, especially at Bar Harbor, amounted to approximately $6,000,000. (*See* also DISASTERS.) (E. R. H.)

**Fish and Wildlife Service:** *see* FISHERIES; WILDLIFE CONSERVATION.

## Fisher, Geoffrey Francis

(1887– ), 99th archbishop of Canterbury, primate of all England, is the youngest son of the Rev. H. Fisher, rector of Higham-on-the-Hill, Nuneaton. He was educated at Marlborough, Exeter college, Oxford, and Wells Theological college. He was assistant master at Marlborough (1911), and was ordained deacon (1912) and priest (1913) at Salisbury. In 1914 he became headmaster of Repton school in Derbyshire. In 1917 he married Rosamond Chevallier, granddaughter of Dr. S. A. Pears, formerly headmaster of Repton. In 1932 he was consecrated bishop of Chester, and in 1939 was translated to London, where his administrative ability left a great impression, particularly in the City. On April 19, 1945, he was enthroned as archbishop of Canterbury, in succession to Dr. William Temple. He played a leading part in church assembly legislation, including the Diocesan Reorganization measure (1941) and the Church Commission measure (1946).

On Dec. 27, 1946, he appointed Bishop Stephen Neill (formerly bishop of Tinnevelly) as his assistant bishop, with headquarters at Geneva, Switz., for diplomatic relations with the tinental churches, and as vice-chairman of the Council on eign Relations. In an open letter to Bishop Neill (Sept. 1 announced that the new South India United Church woul entirely separate from the Church of England, although would not affect the status of Anglican clergy and membe it when in Great Britain. (A. J. MA

## Fisheries.

In a year characterized by critical food short throughout the world, the fisheries of mos tions nevertheless had returned to more nearly normal func ing in 1947 than at any time after the beginning of W War II. Fishing fleets for the most part were rebuilt, facilities were restored and production approached or in instances even exceeded prewar levels.

Although most European fleets were still short of the trawlers necessary for long-range operations at sea, the G Bank fishery, prosecuted by vessels from both eastern and ern Atlantic nations, was generally a productive one. Portugal, the good season on the Grand Bank meant an usually large quantity of salt fish for home consumption, celerating the trend toward a greater measure of self-sufficie Once a heavy importer of salt fish from other countries, Po gal in 1947 supplied a much greater proportion of its own n for this commodity than in previous years. Spain sent a la fleet to participate in the high seas fishery than before the Even France, which lost the greater part of its high seas during the war, had a successful season on the Grand Bank production of salt cod being considerably larger than expe

The Icelandic fleet in 1947 far exceeded in productive pacity that of prewar years; Denmark, with its principal fis products of cod and flounders, also exceeded prewar cat Great Britain, which in restoring its fleet had resorted lar to reconversion of various types of vessels to trawling, ra than to new construction, lagged slightly in productive capa (*see* below). Norway in 1947 had about the same numbe fishing boats as before the war, but faced a problem some similar to that of Great Britain; replacement of aging b became a pressing necessity.

In the Pacific, attention was focused upon the vast possi ties for development of new fisheries and fishing indust throughout the Central and Southwest Pacific, where Japa interests had conducted large operations before World War Precise information on the potential resources of these reg was scanty, but available facts indicated them to be of g value. Estimates placed the potential value of tuna alone $80,000,000 to $100,000,000 a year.

The year also saw translated into action a related prog authorized by the Philippine Rehabilitation act of 1946— of restoring and developing the Philippine fishing indus which had been almost totally destroyed by combat action through confiscation by Japanese occupation troops during war. In furtherance of this program, two research vessels gan oceanographic studies and exploratory fishing during 19 and a laboratory was established in the Philippines from wh experimental work on the pondfish industry and inshore fishe was conducted.

The potential contributions of the fisheries to the wor food supply were considered by the conference of the Food Agriculture organization of the United Nations held at Gene Switzerland, from Aug. 25 to Sept. 11. Among actions of conference was a recommendation that the F.A.O. initiate mation of regional councils for scientific exploration of the in parts of the world not actively served by similar bod Plans were made for the collection of more uniform and a quate statistics of fishery production by member nati tatistics released by this organization during 1947 indicated at world production immediately preceding World War II talled about 39,000,000,000 lb. annually. Previous estimates ad placed world production at 37,000,000,000 lb.

**United States.**—As an important postwar development, the nited States took active steps in determining the extent of the shery resources of remote Pacific areas and in extending U.S. shing activities into these regions. Public law 329 of the oth congress, approved Aug. 4, 1947, authorized and directed e secretary of the interior, through the fish and wildlife serve, to conduct necessary fishery explorations to insure the aximum development and utilization of high seas fishery reources of the territories and island possessions of the United tates in the tropical and subtropical Pacific ocean.

Rapid expansion of the U.S. fishing fleet continued during 947 with 1,275 vessels of 5 net tons or more added to the fleet. a typical prewar year, additions of only about one-fourth as any vessels were made. Not only was the fleet larger numerilly than ever before; with its larger, more powerful, and betr equipped vessels, its potential producing capacity had been reatly increased.

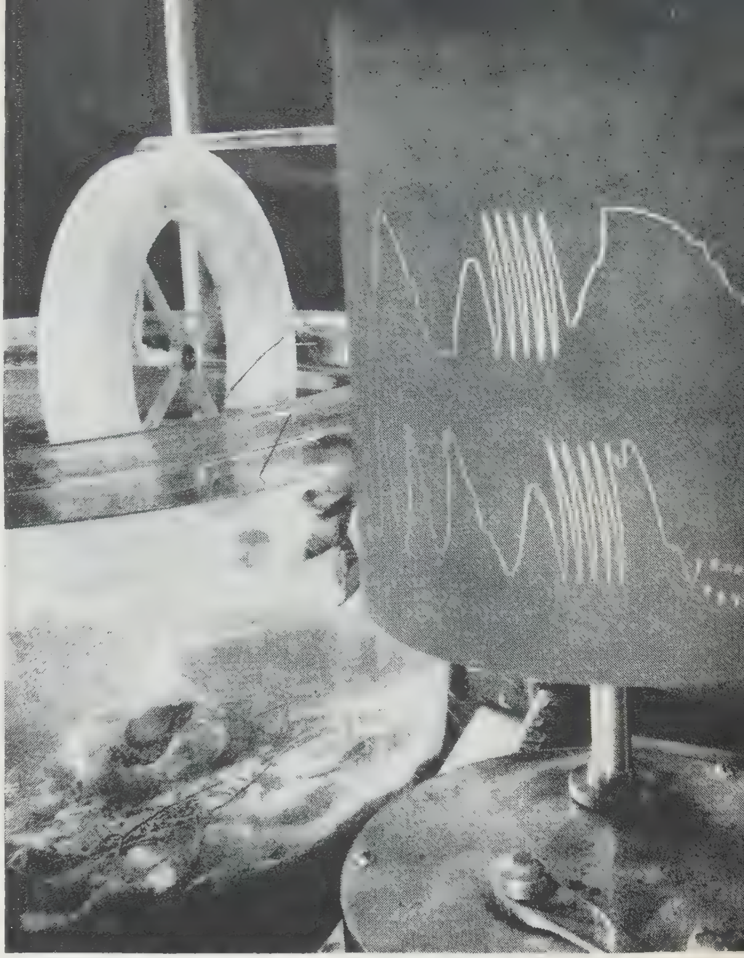
In spite of this expansion of physical equipment, landings by e United States fisheries in 1947 were approximately the same s in 1946 and about equivalent to the prewar average—4,400,00,000 lb. Because of prevailing high prices, however, this atch brought fishermen their largest income in history.

As in 1946, menhaden represented the largest U.S. catch, relacing the pilchard which for at least a decade previously had aintained first place. The yield of menhaden in 1947 exceeded ,000,000,000 lb., thus continuing the year-by-year increases uring which production had almost doubled during the years 942–47. The entire catch of menhaden, which in 1947 comrised about 20% of the total, was converted into meal and oil.

The rise of the menhaden fishery on the Atlantic coast was alanced by an even more spectacular decline of its west coast ounterpart, the pilchard or California sardine. From an averge production of nearly 1,000,000,000 lb. maintained during the ecade 1936–45, the yield of pilchards declined to 491,000,000 b. in 1946 and to less than 250,000,000 lb. in 1947—the smallst yield in at least 20 years. Pilchard fishing in 1947 was enerally poor along the entire California coast, the centre of his fishery, although until that year the southern California shery had maintained high production. In the San Francisco istrict, the pilchard fishery was a complete failure, with less han 150 tons of fish brought to port, in contrast to a 1941–45 verage production of more than 130,000 tons. At Monterey, rom an average of 210,000 tons, the catch dropped to less than 50,000 tons. San Pedro dropped from 214,000 tons in 1946 to 7,000 tons in 1947.

In sharp contrast to the pilchard fishery, tuna landings on the acific coast were the largest in history, surpassing even the ecord year of 1946. The 1947 pack amounted to approximately ,700,000 cases, or about 1,000,000 cases more than the 1946 ack. Reflecting the tendency of this fishery to expand into emote areas was the use of a large factory ship for operations Costa Rican waters, the tuna being frozen on the fishing rounds and delivered to a cannery in Astoria, Ore., for processng. During the year the industry completed arrangements for se of additional floating freezers and for exploration of the una resources of the South Pacific.

After a series of poor years, salmon runs increased slightly n the Pacific coast of the United States and in Alaska, resulting a pack of about 5,200,000 cases. This represented an increase f about 600,000 cases over the 1946 pack, but was still far elow the prewar average. Despite reduced volume, the salmon acks of 1947 and years immediately preceding had brought the industry the largest financial return in history. The 1947 pack was worth about $100,000,000.



CLOCKING a snail's pace by means of this treadmill and rotating drum recorder—a study being made in 1947 by the U.S. fish and wildlife service to learn more about the sea snails which were a hazard to the oyster industry

Alaska herring, which along with menhaden and pilchard had become the mainstay of the fish meal and fish oil industries, provided a slightly smaller catch than in 1946. Practically the entire catch—195,000,000 lb.—was utilized in the production of oil and meal; the remaining small quantities were used for salting and as bait.

Production of fresh fish by the New England fisheries was affected by the apparent surplus of fresh and frozen fish which prevailed during the first half of 1947 and led to voluntary curtailment of operations by the fleet. The catch of rosefish, which was the leading species taken on the Atlantic coast for the fresh and frozen trade in 1946, declined sharply during the early months of 1947, the year's total production amounting to about 130,000,000 lb., a drop of about 50,000,000 lb. from the preceding year. As a result of this decline, haddock resumed its normal rank as the leading food fish taken on the Atlantic coast.

Freezings of U.S. fishery products during 1947 amounted to 240,000,000 lb., according to statistics reported by the U.S. fish and wildlife service. This was a decline of 40,000,000 lb. from 1946. The slackening of activity was brought about by the heavy inventories of frozen fish that existed at the end of 1946, when 158,000,000 lb. were reported on hand—the largest holdings in history. New freezings were therefore curtailed until this backlog was reduced.

The 1947 pack of canned fish was the most valuable in the history of the fisheries, but in volume was about equivalent to the 1946 pack of 700,000,000 lb. Three-fourths of the 1947 pack was composed of five items: salmon, tuna, California pilchards or sardines, Maine sardines and mackerel. While salmon, tuna and mackerel were packed in larger quantity than in 1946, the production of Maine sardines fell off about 20%, and the pack of California sardines declined nearly 50%.

Demand for fish meal and oil, which for several years had been increasing far more rapidly than the supply, continued in 1947. The fortunes of this industry had become closely related to the success or failure of the fisheries for menhaden, pilchard and Alaska herring, the principal sources of raw material. In 1947, the phenomenal success of the menhaden fishery only approximately balanced the dismal failure of pilchard fishing, with the result that production of fish meal totalled about 190,000 tons, compared with a 1946 yield of 199,555 tons. The fish oil industry fared worse, for, in addition to the failure of the pilchard fishery, it was affected by the unusually low oil content of the menhaden caught in 1947, which even the heavy catches could not entirely compensate. During the first ten months of 1947, production of fish oil amounted to only 13,700,000 gal., and it was predicted that the total for the year would be less than half the average production during the period from 1935 to 1939.

The leading fishing ports in the United States in 1947, from the standpoint of total tonnage handled, were, in the order of their importance, San Pedro, Calif.; Lewes, Del.; and Boston, Mass. San Pedro, which had ranked as the most active port for four years, handled more than 430,000,000 lb., consisting chiefly of pilchards, tuna and mackerel. Lewes received about 250,000,000 lb. (exclusively menhaden), maintaining the same relative position it held in 1946. Boston, which in 1946 ranked fourth, moved into third place and resumed its normal position as leading New England port with landings of more than 200,000,000 lb. The reduction in landings of rosefish, concentrated at Gloucester, caused that port to drop below Boston in total landings. Reedville, Va., another menhaden port, held fourth place with landings of 172,000,000 lb. Gloucester, Mass., with landings of about 170,000,000 lb., held fifth place.

In the course of government-administered sealing operations on the Pribilof Islands in Bristol bay, a total of 61,447 fur-seal skins were taken in 1947. This represented a decrease of 3,276 skins from the 1946 take. The seal herd numbered 3,613,653 animals when the annual census was taken early in August, an increase of 6.72% over the 1946 census. When the federal government assumed active management of the fur seals in 1910, the herd contained only 132,279 animals.

A study of the migration routes and food habits of the Alaska fur-seal herd, comprising about 80% of all the fur seals in the world, was begun by the fish and wildlife service in May. The motorship "Black Douglas" followed the fur seals northward along the coasts of British Columbia and Alaska to their breeding grounds on the Pribilofs. After the breeding season, the vessel again followed the seals in their fall migration. As part of the study, nearly 20,000 seal pups were marked with metal tags for further investigation of their migrations.

Of special interest among natural phenomena affecting the fisheries in 1947 was the "red tide" which afflicted the west coast of Florida during the greater part of the year. Accompanied by a reddish discoloration of the water, this plague extended along about 150 mi. of coast and resulted in the destruction of millions of food and game fishes. Scientific investigations showed that it was caused by the presence of great numbers of a micro-organism belonging to the dinoflagellate group, *Gymnodinium* sp., which released toxic substances fatal to most forms of marine life. Scientists reported that the organism was closely related to forms that had caused other destructive red tides along the Pacific coast of North America, and in Peru, Australia, Japan, India and other parts of the world.

(R. L. Cn.)

**Canada.**—The most important development in Can fisheries during 1947 was the establishment of the Fis Prices Support board authorized by an act of Parliame 1944. It was empowered to deal with inland and coastal eries, with areas inside those divisions, and even with part kinds of fish, using a revolving fund of $25,000,000 for price support. It could make differential payments to fishe (that is, pay the difference between the actual market pric what the board believed to be an adequate price), and su fish prices indirectly by entering the market and purchasin at a contract price for export by the government. The purchase made during 1947 was $8,000,000 worth of canne salted fish as part of Canada's aid-to-Europe program.

The federal fisheries department also set up a Directora Marketing to control the quality of fish and fish products ing processing, transportation and retailing; to increase a per capita consumption of fish from 8.4 lb. to 13 lb., a initiate studies and submit recommendations concerning ernment marketing policies.

In the 1947 Geneva tariff concessions Canada got freer to 12 world markets for various kinds of fish and fish proc The concessions took effect on Jan. 1, 1948, and were exp to boost the annual fish export of $80,000,000 by an addit 25%.

(C. C

**Great Britain.**—The British fishing industry was the st est and most important of the European group during Returns of sea fisheries published by the English and Sco ministries showed total landings by British vessels in B ports of fish other than shellfish during the first nine mont 1947 as, approximately, 790,720 tons; the corresponding fi for 1946 and 1938 respectively were 718,720 tons and just u 840,000 tons.

World War II had brought a respite for the fish stoc most waters after the serious effects of overfishing felt in and it was hoped that the convention signed in London in 1946 might take effect in time to continue that respite in n fied form. Unfortunately the convention had not yet rece in 1947 the ratification by all the signatory governments n sary to bring it into force. As a result of this delay, the me of fishing nets and the size limits of fish remained at the war conventional dimensions, and the permanent commis provided for in the new convention had not come into b The duty of this commission would be "to consider whethe provisions of this convention should be extended or alte The convention did not apply to herring fisheries, in which question of overfishing had not yet arisen; they were of ap ently inexhaustible abundance.

The British fishing fleets had not yet returned in full stre from war service, and only a few of the German fishing ve had been mobilized: their gradual return, no doubt, accou in part for the fact that the landings in 1947 showed an incr over those of 1946; and again, the reduction of fishing stre had a bearing on the fact that these landings were nearly 56 tons less than those of 1938, when the effects of overfis were being severely felt in the rich home waters. (*See* MARINE BIOLOGY.)

(H. G. M

**Fishing:** *see* ANGLING.
**Flax:** *see* LINEN AND FLAX.

## Floods and Flood Control.

The U.S. Flood Contro approved July 31, 1 provided $298,322,825 for flood control work during the fi year ending June 30, 1948. The funds were classified as follo general flood control, $246,072,825; lower Mississippi ri $50,000,000; Sacramento river, $1,750,000; Mississippi r nergency fund, $500,000. Of the flood control general fund, 231,800,825 was specified for new construction; $4,500,000 for dvance planning; and $5,000,000 for preliminary examinations, rveys and contingencies. Exclusive of the lower Mississippi ver and the Sacramento river, flood control construction was ontinued or begun on 156 projects in 35 states. Of the $4,500,-00 voted for advance planning, congress specifically earmarked 2,350,000 for four projects: Oahe reservoir, S.D.; Red Rock eservoir, Ia.; Eufaula reservoir, Okla.; and Dyberry and rompton reservoir, Lackawaxen river basin, Pa.

At the end of June 1947, 52 dams and reservoirs and 153 ocal protection projects were in operation throughout the nited States. On Aug. 4, 1947, congress authorized construc- on of a flood control project on the Little Sioux river in Iowa, an estimated cost of $3,320,000. Exclusive of the Tennessee ver valley, the total number of projects authorized by con- ress numbered approximately 760, with a total estimated cost f $2,290,724,500. Ten additional projects having an estimated ost of $161,675,500 had been placed under the jurisdiction of e Mississippi river commission, an independent government gency operating within the office of the chief of engineers. In e ten-year period 1937–47, congress appropriated a total of 1,081,494,725 for national flood control purposes. Of this total, 1,005,272,825 had been spent for the construction and plan- ing of authorized projects and $76,221,900 for maintenance, rveys and miscellaneous activities. Under the corps of en- ineers' over-all plan for national flood control, the authorized rojects constituted a comprehensive, co-ordinated plan for ntrariver basin development.

Channel improvement of the Mississippi river proper was ontinued during 1947 at a number of places below Cairo, Ill. he approximately 1,500 mi. of main stem levees extending rom near Head of Passes, La., to Rock Island, Ill., were prac- cally completed. Co-ordinated with the main stem levees were ,000 mi. of tributary levees, also virtually completed in 1947. elow Cairo, work continued on riverbank protection. Revet- ent in place totalled approximately 100 mi. of riverbank; in ddition, many miles of permeable dikes were in place for bank tabilization and channel regulation. The substantially com- leted 2,500-mi. levee system contained approximately 1,200,-00,000 cu.yd. of earth.

A flood control dam on the St. Francis river, a tributary of he Mississippi, and two in the Yazoo river basin were com- leted and were placed in operation. Two more dams in the azoo basin continued under construction.

During the year, construction was initiated on almost all rojects outside the lower Mississippi valley for which funds ad been made available by congress. Included among these rojects were the Wolf Creek reservoir, Ky.; the Cincinnati, O., ocal protection project; the Lookout Point reservoir in the Villamette river basin, Ore., the Konopolis reservoir, Kan., the ocal protection project at Kansas City, Mo., and Kansas City, Kan., the Garrison reservoir, N.D., and the Fort Randall reser- oir, N.D. and S.D., all in the Missouri river basin; the Clark Hill reservoir on the Savannah river and the Allatoona reservoir n the Coosa river basin, both in Georgia; the Almond in the usquehanna river basin, N.Y.; the Blue Mountain reservoir, rk., the John Martin reservoir, Colo., and the Canton reser- oir, Okla., all in the Arkansas river basin.

Work was continued throughout 1947 on the separately au- horized project for the Sacramento river and its tributaries in California, a continuing project to provide flood protection for rban and rural property of great importance to the economy f western United States.

In addition to providing economical flood protection and allied enefits for centres of industry and population, agricultural lands, and lines of communication, many of the dams and reservoirs provided for multiple-purpose utilization, such as hydroelectric power, water conservation, irrigation, stream flow regulation for navigation purposes, pollution abatement, recreation and other worthy uses.

RISING WATERS of the Mississippi river and its tributaries brought severe crop and property damage to wide lowland areas in Missouri, Iowa and Illinois during June 1947. Farmlands near Hartford, Iowa, are shown under water

**U.S. Floods.**—Floods occurring during 1947 were among the worst of record in the United States. In June and July, floods in the Missouri and upper Mississippi river basins caused damages estimated at more than $1,000,000,000 and the loss of 40 lives. During these months an estimated 3,000,000 ac. were under water in the Missouri river basin and 1,000,000 ac. in the upper Mississippi basin. A number of areas were flooded several times. More than 50,000 families were forced from their homes; transportation, communication and normal community lives were disrupted over a period of several weeks. Direct damage was $156,000,000, and indirect damage—loss of soil, crops, impairment of future crops, damage to utilities and general business losses—was more than $800,000,000 according to an estimate of the department of agriculture. Earlier, in March and April, another flood swept the Missouri and many of its tributaries following ice jams and heavy rains in the lower basin. Damage was estimated at $17,500,000; it was estimated that an additional damage of $6,000,000 was prevented by the Fort Peck dam.

In Jan. 1947 floods in the southeast centred around Rome, Ga. The Coosa and Oostawaula rivers showed the highest crest since 1886, and damage was estimated at about $500,000. Floods occurred in the Great Lakes region in April, extending from northern Illinois to western New York and crossing the southern peninsula of Michigan. Damages were estimated at about $4,000,000 in Michigan and approximately the same amount in Pennsylvania and New York state. Rapid snow melting caused seasonal peaks in the Columbia and Willamette river basins in

May, with flood stages exceeded in several tributaries. Nominal damages were done to pastures and crop lands. A flash flood on East creek in Vermont in June caused approximately $7,500,000 damage, of which Rutland suffered about $5,000,000. Similar floods in the Little river basin in Arkansas and Oklahoma in August did only nominal damage. September floods in Florida, following heavy rains, did an estimated $30,000,000 damage.

Minor floods were experienced in all sections of the United States during 1947, with damages other than those in the Missouri and Mississippi basins estimated at $56,000,000. It was estimated that flood control projects installed by the corps of engineers had prevented an additional $69,000,000 of damages. Emergency flood fighting, rescue work and emergency repairs were conducted in all flood areas according to law. (G. Hb.)

**Great Britain.**—Following the lowest air temperatures recorded at Greenwich observatory since 1870, Britain was coated with an unusually heavy depth of snow during the first three months of 1947, particularly in February. Drifts of 20 ft. were commonplace. With the March thaw came the anticipated floods swollen by severe storms, the frozen ground expediting the rapid runoff; conditions suitable for floods of great intensity were created. Rivers in western, southern and mid-England burst their banks, extending the industrial stoppage precipitated by the cold weather and increasing the misery and discomfort caused by the earlier blizzards. As the thaw and storm crossed Britain from the west, Salisbury and Bath were the first to experience the abnormal conditions, followed by the Thames and Ouse basins, while traffic dislocation in the Midlands was described as the worst ever experienced.

The grimmest aspect of the devastating floods occurred in the Lea valley in north London where a large water supply filtration station of the metropolitan water board was inundated with highly polluted floodwaters. More than 500,000 people were without a piped supply of drinking water, and it had to be conveyed to them by means of road tankers. In East Anglia, dikes were breached so frequently that a large proportion of Fenland was soon under water, causing what was then erroneously believed to be irreparable damage to the rich agricultural belt. In certain upland areas of limited size, excellent control was achieved by reducing the waters held in store in water-supply reservoirs to accommodate the expected floods; in most cases, however, the actual flood yields were much greater than had been anticipated, the runoff in one week being more than that expected during a normal year. Over-all, the cost of this caprice of nature might be reasonably assessed in excess of £100,000,000; yet, contrary to expectations, no failures of waterworks' dams were recorded.

During 1947, no important flood works were in progress other than new steel-piled banks for the river Nene and other remedial measures, induced by the spring floods. Dutch engineers, with their specialized equipment, were employed in sealing the major breaches in the Fenland dikes. The need for a policy of control, however, was again recognized; many paper schemes, which, if implemented previously, would have saved much damage and destruction, were resurrected and modified, notable cases being Fenland and the £3,000,000 Irwell project at Salford, Lancashire. The latter would require a three-mile diversion tunnel across the large river loop to the Manchester ship canal.

One factor which was receiving more consideration than hitherto was that local drainage improvements by deepening and straightening of river courses in one part of a catchment, together with improved sewerage, accentuated flood conditions in lower parts of the river by moving the danger downstream. The intended legislation for improvements in river control should provide the replacement of flood displacement by multilateral control.

**Other Countries.**—Although many European countries perienced spring floods parallel to those in Britain, drought the most striking feature afterward; in September, the Danube reached its lowest level in 179 years, and the R was at its lowest since 1810. In late December serious fl occurred in eastern France and heavy damage was suffere the towns of Nancy, Epernay, Metz, Thionville, Verdun Rethel from the overflowing of the Moselle, Meuse and A rivers. In Nancy 2,000 houses, the homes of 16,000 people, wrecked. Agricultural losses also were severe.

In the Punjab, India, the early and intense fall of the soons inundated large areas of fertile land and lines of c munication, and increased the misery and death rate of mass passage of refugees between Pakistan and India. Pc cally, the boundary division between the new dominions es lished in 1947 took some account of flood and irrigation trol, but it was feared that any widening of the political would make flood control either difficult or impossible.

The re-diversion of the Yellow river, China, back to its northern course into the Gulf of Chihli by U.N.R.R.A., reca the breaching of the dikes in 1938 by the Chinese, to imp the Japanese advance, when the breach became uncontroll and drowned 400,000 people.

Experiments, originating in Australia and continued in gon, indicated that the artificial production of heavy rainfal feeding dry ice and other chemicals into clouds, and thus ting up a chain reaction, might lead to great new developm in both drought and flood control. (*See* also Dams; Fores Irrigation; Meteorology; Soil Erosion and Soil Conse tion; Tennessee Valley Authority.) (D. G. Ds.

**Florida.** The extreme southeastern state of the Un States, Florida is called the "Peninsula state" cause of its peculiar outline. Its coast line, not taking account the numerous bays and indentations, is greater than of any other state, extending 472 mi. along the Atlantic and mi. along the Gulf of Mexico. Area, 58,560 sq.mi., of w 4,298 sq.mi. are water surface; population (1940) 1,897,414 which 1,045,791 were urban and 851,623 were rural; 1,384 white and 513,049 Negroes. Only about 60,000 were for born. Capital, Tallahassee (16,240 in 1940). The larger c are Jacksonville (173,065), Miami (172,172) and Tampa (1 391). By the state census (1945) Florida had a populatio 2,249,649. Population figures for the three larger cities, Jacks ville, Miami and Tampa, were 206,442, 192,122 and 124,476 spectively.

**History.**—The state elective administrative officers in 1 whose terms were to expire in Jan. 1949, were as follows: lard Caldwell, governor; R. A. Gray, secretary of st J. Thomas Watson, attorney-general; C. M. Gay, comptrol J. Edwin Larson, state treasurer; Colin English, superintend of public instruction, and Nathan Mayo, commissioner of a culture.

**Education.**—The biennial report of the state superintendent of p instruction, 1944–46, showed enrolment in the public schools for 194 through grade 12 as follows: white 310,442; Negro 105,315; total 4 757. There were 1,706 elementary and 768 secondary public school the state, with instructional staffs not including supervisors total 14,234 teachers, of whom 10,736 taught in the schools for whites 3,498 in the schools for Negroes.

**Social Insurance and Assistance, Public Welfare and Related Program** Florida disbursed for state welfare through the State Welfare b $26,698,938.06 in 1946–47. From grants by the federal government, state received in 1946–47 for old-age pensions $12,143,138.72; for pendent children $2,184,867.09; and for pensions for the blind $6 403.79; total $14,972,409.60. Disbursements for old-age assistance $20,588,948.50; for dependent children $3,410,201.50; and for the $1,093,627.50. The unemployment benefit receipts were $13,821,43, with benefit disbursements of $5,207,161.80.

Florida has no state penitentiary, but maintains a prison farm Raiford, a second prison at Belle Glades, an Industrial School for at Marianna, and an Industrial School for Girls at Ocala. The appro

IND-SWEPT PALM TREES photographed in Miami during the violent hur-
cane which swept westward through southern Florida on Sept. 17–18, 1947

ons for these institutions for 1946–47 carried the sums of $828,168, 152,000, $306,850 and $110,600 respectively. The state also supports state hospital for the insane at Chattahochee and a hospital at Arcadia, e Florida Farm colony for the feeble minded at Gainesville, and the lorida School for the Deaf and Blind at St. Augustine. The appropria-ons for these institutions for 1946–47 carried the sums of $4,072,088.44 cluding the hospital at Arcadia, $312,750, and $506,938 respectively.

**Communications.**—The total highway mileage in the state in 1947 ex-usive of roads built for military purposes, was 48,561 mi., of which pproximately 22,208 mi. were paved or hard-surfaced. Disbursements for e year ending Dec. 30, 1947, for maintenance and construction, amounted $38,579,638.04. The state road department's tentative budget for 948 for construction was $56,275,971 plus $6,697,756.93 for main-enance and other departmental costs. Florida in 1947 had a little more an 5,000 mi. of railroads in operation exclusive of yard tracks.

**Banking and Finance.**—On June 30, 1947, there was a total balance in e state treasury of $83,043,538.38 with outstanding warrants of $8,739,-15.97. The state is constitutionally forbidden to incur a debt by borrow-g except to put down rebellion or repel invasion. The constitution also rohibits the legislature from levying an income tax, forbids any state d valorem tax on real estate, and exempts homesteads from taxation y local taxing units up to the value of $5,000.

On June 30, 1947, there were within the state 61 national banks with eposits amounting to $1,194,391,000 and 120 state banks and trust ompanies with deposits of $475,111,000, representing total deposits of 1,669,502,000, a loss in deposits of $156,693,000 in the fiscal year.

**Agriculture.**—In 1945 the U.S. census of agriculture showed that there ere 61,159 farms with a total acreage of 13,083,501 ac., of which ,840,264 ac. were in crops; 474,367 ac. were idle (fallow); 4,568,278 . were in pasture (4,527,462 ac. of woodland were also pastured); ,801,860 ac. were in farm woodland.

*Principal Agricultural Products of Florida, 1947 and 1946*

| Crop | 1947 | 1946 |
|---|---|---|
| orn, bu. | 7,946,000 | 6,910,000 |
| bacco, lb. | 25,190,000 | 22,251,000 |
| tatoes, bu. | 2,959,000 | 6,249,000 |
| gar cane, short tons | 1,073,000 | 1,156,000 |

The citrus production for the season 1946–47 and the estimates for 947–48 respectively were as follows: oranges (including tangerines) 8,400,000 and 53,800,000 boxes; grapefruit 29,000,000 and 31,000,000 oxes; limes 170,000 and 190,000 boxes.

On Jan. 1, 1947, the livestock resources of the state were as follows: 012,000 beef cattle and calves; 148,000 milk cows; 630,000 swine; 4,000 sheep; 27,000 horses; and 33,000 mules.

**Manufacturing.**—The more important manufactures of the state in 1947 ere lumber, wood pulp, naval stores (turpentine and rosin) and cigars.

The cigars manufactured in Florida are valued at around $21,000,000 nnually. Tampa and Jacksonville are the leading cities in this industry.

Florida's lumber production, mainly yellow pine and cypress, in 1946 was about 450,000,000 bd.ft. The total estimated value of primary wood products for Florida in 1947 was more than $125,000,000. Tung oil and the manufacture of paper and paper board were also important industries.

In 1939, according to the U.S. census figures (1940), the state had 2,083 manufacturing establishments, paying $37,823,204 to 52,728 workers and producing $241,238,534 worth of goods.

**Mineral Production.**—Florida has only limited resources in minerals, but has large and rich deposits of phosphates, lime and limestone and less extensive, though highly valuable, deposits of kaolin and fuller's earth. The estimated value of the state's mineral production in 1947 was more than $30,000,000. (A. N. P.)

## Flour.

Wheat flour production in the U.S. during the crop year ended June 30, 1947, totalled 300,000,000 sacks (100 lb. each), compared with 264,000,000 sacks for the 1945–46 crop year, an increase of 14%. During the 1946–47 crop year, only 8,600,000 sacks, or 2.9% were produced by mills with a daily capacity of 400 sacks or less. In general, the annual production of flour in the U.S. had increased steadily after 1935, when only 189,600,000 sacks were produced. According to production statistics prepared by the bureau of the census, industry division, foods section, flour milling reached an all-time high in Jan. 1947 when 64,575,000 bu. of wheat were ground to yield 27,906,000 sacks of flour, equivalent to an extraction rate of 72%. The monthly production for the first nine months of 1947 averaged 25,440,000 sacks, also an all-time production record.

**Flour Conservation Program.**—According to H. Fakler, vice-president of the Millers National federation, there was little official interest in a return to the 80% extraction type of flour in connection with the food conservation program. U.S. department of agriculture officials were aware of the general ineffectiveness of producing long-extraction flour as a means of providing more flour for export.

The flour-saving program proposed by Charles Luckman, chairman of the president's Citizens' Food committee, comprised the following 11 points:

1. To feature smaller sizes of loaves.
2. To use a higher proportion of noncritical foodstuffs to replace flour.
3. To use materials other than flour for "dusting" purposes.
4. To reduce the number of varieties of bakery products.
5. To serve smaller cuts of cakes and pies in food establishments.
6. To avoid all production losses.
7. To store and handle all raw materials so as to avoid foodstuff losses.
8. To plan production so as to eliminate loss of materials.
9. To avoid stale baked-goods losses in eating places.
10. To devise means of using leftover breads and rolls.
11. To publicize all efforts at food (flour) conservation.

Preliminary estimates for 1947 indicated a decline in consumption of flour, wheat and cereals in the U.S. of 10 lb. per person as compared with the 1935–39 average.

Grain exports, including flour and other wheat products, during the 1946–47 crop year amounted to a total of 15,396,000 tons, representing an increase of about 1,000% over the average annual shipments for the 1935–39 period. The U.S. department of agriculture reported that wheat and flour exports for 1946, totalling 10,600,000 tons—equivalent to 396,400,000 bu. of wheat—were the largest on record.

In preparing family food packages for shipment abroad by CARE (Co-operative for American Remittances to Europe, Inc.), the 7 lb. of flour included represented nearly $\frac{1}{3}$ of the total weight of 21.5 lb. of food in each package.

**Flour Milling.**—Milling sanitation had received increasing attention during the past few years, and considerable survey work had been undertaken by the larger milling companies to determine the extent of foreign material fragments in flour. In furtherance of the flour mill sanitation program the use of unlaundered secondhand textile bags was prohibited in Minnesota for flour and other products for human consumption, effective Aug. 1, 1947.

**Flour Prices.**—Directly related to rises in the cost of wheat

UNLOADING the first shipment of U.S. flour to arrive in Greece following the announcement of the Truman doctrine on March 12, 1947. Church dignitaries were on hand to bless the cargo at the port of Piraeus

to millers, the price of flour advanced steeply over 1946 in spite of excellent crops and ample grain supplies. While most of this rise was attributed to intense speculation in grains, especially in wheat, it should be noted that the U.S. department of agriculture supported wheat prices substantially by announcing on June 30, 1947, that a national average price of $1.83 per bushel would be guaranteed to farmers as compared with a rate of $1.49 in 1946. Although only grade No. 3 wheat or better was eligible for this price support, for loan or purchase, the price of flour quickly advanced and, in view of export demands, it was thought that it would probably remain at record levels until European commitments or requirements should be satisfied.

**Flour Technology.**—Flour moisture content and its relationship to the relative humidity at various temperatures was the subject of an investigation by L. Morey, H. Kilmer and R. W. Selman. This work resulted in the establishment of a linear relationship between flour moisture content and the absolute humidity of the atmosphere. The equilibrium water contents of a typical Kansas flour in contact with air of varying moisture contents was determined at 50° C., 75° C. and 95° C.

A new method of flour bleaching was developed by W. S. Hutchinson and R. I. Derby, who reported that the oxides of nitrogen produced by the electric arc (Alsop process), when passed through a column of sodium chlorite, react to produce chlorine dioxide. The mixture of gases thus produced exhibit bleaching power much greater than that normally obtained from the electric arc machines.

In the field of wheat flour enzyme technology, an investigation was completed on the proteolytic enzymes of milled fractions of wheat.

An investigation of the colloidal properties of suspensions of glutens from different kinds of flours, including wheat, barley, rye, corn and buckwheat, was reported by A. Boutoric and Simone Fabry.

The effects of ultra-violet radiations on the aging characteristics of wheat flour was the subject of another study completed by the above authors, who concluded that the effect of ultra-violet light in accelerating the aging of flour was due chiefly to the action of ozone.

(*See* also BREAD AND BAKERY PRODUCTS.)

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## Fluorspar.

The major world producers of fluorspar ar proximately in order of importance, U States, Germany, Newfoundland, Korea, Great Britain, M France and Spain. World production reached a peak of 1,200,000 tons in 1944 of which the United States supplied and Germany 16%; other producers were of the order of 5 less. Demand decreased sharply after the close of World II, with the reduction in steel output and the decrease o cialized war uses.

**United States.**—The major features of the fluorspar ind in the United States are indicated in the following tab thousands of short tons.

*Data of Fluorspar Industry in the U.S., 1940-46*

(In thousands of short tons)

| | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 |
|---|---|---|---|---|---|---|
| Shipments . . . . . | 233.6 | 320.7 | 360.3 | 406.0 | 413.8 | 324.0 |
| Imports . . . . . . | 11.9 | 7.5 | 2.2 | 43.8 | 87.2 | 103.1 |
| Consumption . . . | 218.5 | 303.6 | 360.8 | 388.9 | 410.2 | 356.1 |
| Iron and steel . . | 160.1 | 214.7 | 250.4 | 241.4 | 238.0 | 204.7 |
| Acid . . . . . . | 35.7 | 56.0 | 81.6 | 113.6 | 129.6 | 109.3 |

In spite of the fact that fluorspar production declined in 1946, shipments for the year were the largest for any p time year on record. The chief producing states are Ill Kentucky and Colorado. In the early years of the war im were negligibly small but increased to furnish nearly one-f of the supply in 1945. The 1946 imports dropped back t prewar level, with exports negligible. ( G. A. R

**Food and Agriculture Organization:** *see* FOOD SU OF THE WORLD.

**Food and Drug Administration:** *see* DRUG ADMINIS TION, U.S.; NARCOTICS AND NARCOTIC TRAFFIC.

## Food Research.

The bureau of human nutrition and h economics in the U.S. departmen agriculture reported valuable results in nutrition research. I rapid and accurate methods were developed for the micr logical determination of nutritionally essential amino a especially methionine, lysine, threonine, valine and histi Some food proteins are low in nutritive value because they little of the sulphur-containing amino acids, cystine and me nine. Through investigations into the chemical and nutr properties of these and other amino acids that contain sulp the bureau developed a spectrophotometric method w proved useful in determining the amount of cystine in a nur of proteins. Also, the investigators discovered that the cys and methionine content of eggs can be improved by ma certain changes in the protein of the hen's ration. Neverthe it proved ineffective to feed synthetic methionine to hens the purpose of raising the level of cystine or methionine in eggs. It appeared that, in order to be usable in the form of protein, the methionine had to be in combination with o linkages in the protein molecule.

In research to learn how well carotene in different vegeta is utilized by the body, the bureau experimented with kale carrots in test diets. Experimental animals on diets other adequate and depending on the cooked vegetable for vitami appeared to use only about 60% of the carotene in kale about 25% of the carotene in carrots. The explanation peared to lie, in part, in the inability of the rat to free carotene from the vegetable cells in the digestive tract. Ea studies had indicated that human beings utilize the caro from peas and spinach very well—better than pure caro ssolved in oil. They do not, however, utilize the carotene from rrots so effectively as that from peas or spinach. However, e richness of carrots in carotene makes it an outstanding urce of vitamin A, despite incomplete utilization.

Because of the interest developed in the study of vitamins, inerals and amino acids, nutritionists continued to give rela- vely little attention to the fuel value of foods. World War II lled for a revival of interest in this problem. A common in- rnational basis for calculating the physiological energy value wheat and other foods was needed. Accordingly, the bureau human nutrition and home economics reviewed and sum- arized the literature on the derivation of calorie values from ta on composition of foods, the heat of combustion of their ajor organic constituents and their digestibility by man. It ncluded that the conversion factors used in the U.S., the fac- rs 4.9.4 developed by W. O. Atwater in 1899, could appropri- ely be applied to the total number of grams of protein, fat d carbohydrate, respectively, when estimating the physiologi- l energy value of the U.S. diet as a whole. The bureau ex- ained the changes needed in the use of the Atwater system to ve a more precise calculation of the calorie value of individual ods. It developed new calorie values for wheat flours of three vels of extraction and tentative comparable figures urgently eded by the U.S. army for a few other cereals, for potatoes d for some additional groups of foods.

Professor Henry C. Sherman, formerly chief of the bureau human nutrition and home economics, and in 1947 at Co- mbia university, reported experiments at Columbia on the lationship of diet to senility.

In the Columbia experiments, Professor Sherman reported gns of senility in experimental animals agreed with the de- riptions published by E. V. McCollum, Nina Simmonds, and elen Parsons: "in our experiments as in theirs the onset of nility is deferred by nutritional improvement of the dietary. hus in a typical case cousins, which in the opinion of skilled oservers manifested senility in equal degree, had reached this ondition in one case at an age corresponding to about 65 in an; while in the other case, with better-balanced diet, the same egree of senility was not reached until an age corresponding to oout 75 or 80. The visible evidence of aging and the effects of ets upon their incidence are alike for males and females." Henry C. Sherman, *The Science of Nutrition,* Nutrition Foun- ation, Columbia Univ. Press, 1947.)

In work on the effect of heat on proteins, especially those in lseeds, the bureau examined the biological value of the protein an unheated cottonseed flour prepared in the Southern egional Research laboratory. This flour was a newly processed, olvent-extracted, gossypol-free product. Its protein had a much gher nutritive value than that in certain commercial cotton- eed flours. This cottonseed flour also contained an adequate mount of lysine, one of the amino acids essential for growth. ome reports had pronounced cottonseed protein deficient in sine. It was supposed that heat treatment might change the ructure of the protein molecule, so that lysine becomes less adily available for the body's use.

A comparative study by BHNHE indicated rolled oats was qual or superior to all other major food grains tested in both uantity and quality of protein. Rice was lowest in the quantity its protein but ranked with oats in protein quality. Rye, hole wheat, barley and corn followed in that order. Enrich- ent, restoration or fortification of certain foods with one or ore nutrients was no longer compulsory by federal order as it ad been between Jan. 1943 and Sept. 16, 1947. Yet the depart- ent of agriculture reported that the enrichment of grain prod- cts was continuing at much the same rate. In 20 states the nrichment of white flour was compulsory by state legislation. In addition, some states required the enrichment of corn and some other products. (*See* also FOOD SUPPLY OF THE WORLD; VITAMINS.)

(A. P. Cw.)

## Food Supply of the World.

No other year in modern times had seen so widespread concern over food as did 1947. The food shortage of the war years was followed by very slow recovery through 1945 and 1946. The crop year ending July 1947 saw little or no gain and the need for more food to prevent hungry people lapsing into chaos and political revolution became acute. The Food and Agriculture organization stated in December that "the world food situation is as critical this year as at any time since the close of World War II." While there were notable increases in production of several basic crops and better yields in some countries, the gains were insufficient to provide the exportable surpluses needed by the deficit countries. The needs of Europe became steadily larger through the year leading to food-saving campaigns in the United States and proposals for the return to rationing as in wartime. The steady advance of prices aroused the congress to consider inflation controls. The government called for another year of wartime-size production and increases over prewar levels to care for the increases in population. The crop-by-crop and country-by-country survey that follows reflects the food crisis in detail.

The world food situation at the beginning of 1947 showed little improvement over 1946. The International Emergency Food council stated that while the world as a whole was slightly better off, a number of individual countries found themselves in a worse food situation. In central and western Europe, excepting the United Kingdom, Switzerland and Portugal, some improvement in food supply was noted but in the lower Danube basin and in countries adjacent to the Soviet Union food conditions were worse. Competition for imports was keener than a year earlier. The most serious shortages were in the basic foods—rice, cereals, fats and oils, and to a lesser extent meats and sugar. Only about 3,000,000 tons of rice were available to meet demands for about 8,000,000 tons. Some gains in food supplies were noted in Asia and the far east, particularly China, Japan and southeastern Asia. In India the gain in relation to population growth was smaller, if any. Only half enough fats and oils were to be found and the meat supply of Europe was one-third less than prewar amounts. The hope of relief lay in the prospects for good crops in 1947, which must follow several years of high yields in the United States where the principal surpluses were to be found. In the United Kingdom food consumption was reported in March to be 5% to 10% less than a year earlier or during the war. At the same time it was emphasized that per capita consumption in the United States was higher, reaching 3,400 calories per day which was 5% above the prewar average.

In February former President Herbert Hoover headed an economic mission appointed by President Harry S. Truman and made a short survey of conditions in Europe and reported that the outlook was very serious and called for vigorous action by the United States, the chief source of surplus foods.

Effective measures to conserve human foods were reported to have resulted from the recommendations of the Conference on Urgent Food Problems held in Washington, D.C., in May 1946. These measures included the use of less wheat and other bread grains for livestock and the production of alcoholic beverages. In France, nonfood industries received no wheat. More controls were put into effect than during the war, particularly in Europe. The rate of milling wheat was raised to 85% to 96% extraction, and the waste of wheat and wheat products was made a criminal offense in some countries.

The President's Cabinet Committee on World Food Programs reported on July 1, 1947, that the United States would have to increase its exports of foods if the European situation was to be prevented from seriously deteriorating.

A special Cereals conference was held in Paris in July to consider measures to meet the grain shortage. Over thirty nations were called together by the F.A.O. and I.E.F.C. to survey the food grains situation. Numerous measures to save human food were recommended.

The Food and Agriculture organization held its third session at Geneva in August and appraised the world's food situation again. While improvement in some countries was noted for the year 1946–47, the total was not sufficient to offset the effects of long deprivation.

By Sept. 22, 1947, the situation was reported as less favourable for the coming winter than appeared evident in midsummer. The President's Cabinet committee reported that crops in Europe had rapidly declined during August and September so that steps should be taken to conserve grain supplies for export. In October the I.E.F.C. issued a statement supporting the estimate that world food production in 1947 would be below that of 1946 and that the deficit areas had the poorest crops.

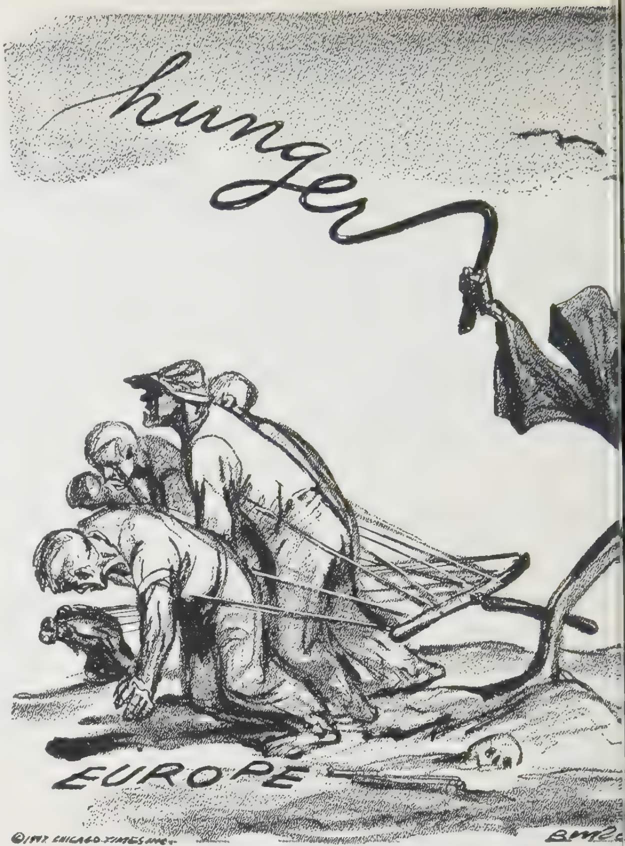
These warnings led the president to call for a special campaign to save food grains for export. A Citizens Food committee was set up, and a nation-wide campaign was made to save 100,000,000 bu. of grain for export to Europe. The plan called for meatless Tuesdays, poultryless and eggless Thursdays and a "save a slice of bread a day" slogan. The results of the campaign would not be determined until late in the winter when exports had been measured.

A summary of the world food situation was issued by the F.A.O. Dec. 4, 1947, which appraised it as critical as at any time after the end of hostilities. World production of bread grains and rice per capita was estimated at 13% below the prewar average of 1934–38. Droughts and other weather damage caused heavy crop losses and destroyed the prospect for improvement indicated early in the year. Europe was hardest hit; middle east grain production fell off; the far east reported some gain over 1946 but hardly enough to offset population increases. The United States enjoyed the greatest increase of any part of the world.

The I.E.F.C. was combined with the World Food Council of F.A.O. in December and the allocations of food stuffs was to be continued by the new body which took over the staff of I.E.F.C. A general world food conference was expected to be held early in 1948 as soon as the requirements under new congressional aid to Europe plans had been developed in detail.

**Bread Grains, Wheat and Rye.**—Wheat had become the most important food crop of the world during and after World War II because of its place in feeding the destitute Europeans. The normal prewar imports of Europe were more than doubled by the local crop decline. While rye takes the place of wheat as a bread grain in some regions, the world's trade in rye was comparatively small in 1947. More than 72% of the world's grain exports consisted of bread grains, wheat and rye and the remaining 28% was principally corn. Of the world's exports of grain the United States provided 53%, Canada 24%, Argentina 15% and Australia 5%.

Productions of wheat and rye in 1947 were estimated at a total of more than 7,425,000,000 bu., consisting of 5,975,000,000 bu. of wheat and 1,450,000,000 bu. of rye. This total was slightly more than was harvested in 1946 and almost up to the production of 1935–39 due chiefly to the huge United States wheat crop. In Europe and other deficit areas the crop was still below the prewar average. This situation made it necessary to move more of the crop to the deficit areas to prevent famine. Popula-



"THE TASKMASTER" by Burck of the *Chicago Times*. The urge
Europe's need led President Truman, in Oct. 1947, to urge all U.S. citi
eat no meat on Tuesdays and no poultry or eggs on Thursdays in or
conserve food

tion increases of 5% to 10% after 1939 further increase
deficits in some areas. In 1946 Europe imported more
16,600,000 tons of grain to supplement home-grown su
and then was short of an adequate diet. The stocks being
at the mid-year and the corn crop also being smaller th
1946 intensified the competition for bread grains which c
prices to rise to record heights in the United States. This g
increased the cost of relief purchases in all countries.

**Rice.**—The world's greatest food crop for direct human
sumption, rice, was slowly approaching the prewar level of
duction in the 1947–48 crop year. The total harvest was
mated by the United States department of agriculture at 6,
000,000 bu., which was 4,800,000,000 bu. more than in
and compared with a prewar average of about 7,446,000,00
for 1935–39. The increase was made in China which for
produced about 35% of the world's total, while there we
ductions in India, due in some cases to acreage being shift
jute. Siam, Burma, Japan, Korea and the Philippines eac
creased acreages of rice.

Europe as a whole planted a larger acreage in 1947 and
vested a crop almost equal to that of prewar years. Most o
increase was in Spain. Yields were low there, however, d
shortage of fertilizers. Italy's crop was fair but the acreage
below prewar. Egypt and Madagascar had excellent crops.
South American crops were expected to be about the same
1946–47. In North America the record crop of the United S
raised the North American total almost 50% above the pr
level, providing a considerable supply for export.

While the rice production of the larger rice-consuming c
tries was increasing from the low levels reached during the
years, the total was yet so far below the prewar total that
relief to rice consumers was in sight. Population growth in C
and India has been much more rapid than the expansion of

oduction.

**Potatoes.**—The potato crop centres in Europe, as rice centres Asia. About half of the world's total is grown in Europe and prewar years about one-fourth of Europe's total was grown Germany. The world's potato crop for 1947 was estimated at out 7,080,000,000 bu., compared with 7,132,000,000 bu. grown 1946 and an 8,417,000,000 bu. prewar average. The 1947 crop ıs about 16% below prewar chiefly due to lower yields as the reage was approaching the prewar level. Average yields were ly 139 bu. per ac. compared with 149 bu. in 1946 and 160 bu. prewar years. Drought and the shortage of fertilizers held wn the production.

Fewer potatoes were grown in both the United States and ınada in 1947 and in almost all other countries except South nerica where the total is not large.

The experience of the United States in 1946 when it had a ge potato crop did not encourage exports to any great extent. ehydrated potatoes could be shipped but the transport of raw tatoes was attended by heavy losses. Supplies in the United ngdom became so scarce that the rationing of potatoes was gun in the fall of 1947.

**Sugar.**—World sugar production increased about 19% in 47 and provided a supply that allowed for greatly increased nsumption. The Cuban crop was double the prewar output d the crop of Europe was 40% above 1946 although less than lf of prewar output. The Philippines and Formosa were still rvesting less than 10% of prewar production. The higher ice of sugar continued to restrict its purchase for deficit counes, since other foods were considered more essential. The tential sugar output of the world is sufficient to provide the % increase recommended by F.A.O. by 1950.

**Meat.**—Production was expected to require more time to cover to prewar levels in the world as a whole principally beuse of the urgent need for grain for immediate human conmption. Meat is of less importance in Asia than in Europe, d in the former areas production effort was to be expended rice and wheat. The numbers of livestock declined in the nited States, Canada and Mexico while increases in Europe ere small, probably less than 5% for all animals. Feed supies were still 15% less than in prewar years in relation to the ımber of animals to be fed, and concentrated feed supplies ere particularly short. This led to early slaughtering of meat ıimals and a corresponding reduction in the quantity of meat. og slaughter in Europe was still less than half of the prewar nount and was not wholly offset by the increases in the United ates, Canada and Argentina. Poultry and egg production, hich began to recover at the end of hostilities, was handipped again by the severe grain shortage. The total world oduction of poultry for meat and eggs in 1947 gained slightly er 1946 in spite of the decline in the United States. Canada d Australia, which supply Great Britain, increased their output eggs in 1947. The number of dairy cows was slowly ineased after the war, and milk, butter and cheese production gan to recover. By 1946 the western European countries had covered about half of the prewar production. The low counies, the Netherlands, Denmark and Belgium, suffered from the 47 drought which damaged pastures severely. The feed short- e was also a retarding factor.

**Food Situation by Areas.**—North America as a whole had somewhat smaller total food crop and meat production notthstanding the high record wheat crop of the United States. ıe Canadian wheat crop was off 15%. Corn declined in the nited States and affected the output of livestock and products. ven with these reductions however, North America was the orld's chief source of exports to make up the deficit of the edy countries.

Great Britain experienced the worst floods and droughts in 50 years, which cut domestic production severely. Potatoes were 10% below the average yield, and in early November potato rationing was begun at 3 lb. per capita per week. Almost all other foods were rationed, which brought the average diet down to 2,700 calories, which was below the wartime level. Purchases from the United States were suspended in August because of the dollar shortage. Some purchasing was resumed later when the terms of the loan to the British by the United States were made more favourable. In December the British were buying in the cheapest markets, including the purchase of some wheat from the Soviet Union.

Europe was hard hit by bad weather—a severe winter followed by a dry summer. Yields were much below 1946, although the crop acreage was larger. The most severe loss was a drop of nearly 8,000,000 tons in wheat and rye. Other grains were also short, and potatoes were below the 1946 output. A slight increase in livestock, principally pigs and poultry, was reported. The shortage of feed grains cut down the output of meat and milk, although heavy slaughter due to feed shortage was expected to increase the supply of fats for the winter of 1947–48. Central Europe, principally Germany, needed imports for the winter of 1947–48 about as great as for the previous winter. Corn production in the Danube valley was better than 1946 and about up to the prewar level.

The middle east, usually an exporter of food grains, had a smaller crop than in 1946 because of drought and locust attacks.

The Soviet Union reports were very conflicting. Government claims of a large wheat crop were not consistent with the reports of observers who noted the lack of fertilizers, farm ma-

DARK BREAD, milled with U.N.R.R.A. flour, constituted three-quarters of the daily diet of this woman and most other residents of the village of Mokrance in eastern Slovakia during 1947

chinery, seed, work animals and the generally low rations being served to workers in the cities.

South America reported less grain and a decline in livestock production due to feed shortage. The wheat crop of Argentina was estimated at 17% below 1946. Tropical crops, sugar, coffee, etc., were increasing. Australia had a larger wheat crop and offered larger exports. South Africa had barely enough for its own needs.

China's 1947 crop production was estimated to be slightly better than the fair crop of 1946 and about equal to the prewar 1931–37 average. The civil war, poor transportation and financial troubles resulted in deficits in some regions reaching near famine conditions. Imports were effective in helping the coastal cities to maintain the people on the minimum diet. About 800,000 tons of rice and wheat were brought in from other coastal areas.

Burma, French Indo-China and Siam, which had an export surplus of 45% of their production in prewar years, reduced production during World War II as the result of the Japanese blockade and in 1947 were producing only about half the prewar amount, and exports had not recovered above 17% of the prewar amount. The recovery of these countries is essential to provide ample food for China and India.

India was very short of food following the 1946 harvest, and the crop of 1947 was only sufficient to replace stocks when the third successive year of short supplies was experienced in nearly all parts of the country. The division of the country intensified the need, since millions of people were taken from the land to cities in other areas where the people had no land and no allowance of food. Statistics of food production were delayed in India to avoid alarming the people to induce hoarding. Prices advanced with the shortage and this made the situation worse for the poor, who constitute about three-fourths of the people of India. From Dec. 1946 to Oct. 1947 more than 1,746,600 tons of grain were imported. Of this total about 787,000 tons came from the United States, 341,000 tons from Burma, 138,000 tons from Argentina and 125,000 tons from Turkey, while the rest came from a dozen other countries in smaller amounts. Very little grain was ever before shipped from the United States to India.

The Netherlands Indies were so chaotic because of military and political operations that an accurate survey of the food situation was difficult. Java and Sumatra were usually self-sufficient, but the Dutch in the cities lived on imports. Trade was so interrupted that some cities were near to starvation. Farming and trade were so disturbed that production of rice and other crops was 20% below the prewar level. Before the war this area usually exported more than 25% of its total food production.

The Philippines recovered much of their war losses in 1947 and were self-supporting again except for meat. Rice was relatively adequate after the good 1946 harvest and another good crop was harvested in 1947 which was about equal to prewar production. During the war the Japanese took much of the Philippine rice crop and left the Filipinos to subsist on corn and root crops, chiefly sweet potatoes and casara. The crop of beans and vegetables was increased in 1947 and hog and chicken production made rapid recovery. Copra and sugar production began to recover. Sugar mills, half of which had been destroyed by the Japanese, were being rebuilt.

Australia and New Zealand were expanding food production as rapidly as possible. Australia had a larger wheat crop than for two years and expected to increase exports. South America as a whole was in a good self-supporting position with nearly the prewar surpluses for export, except that the Argentine wheat crop was smaller than in 1946.

**World Food Organizations.**—The United Nations Foo Agricultural organization (F.A.O.) speeded its activities in ways during the year and adopted a more definite progra work at its third general conference at Geneva, Switzerla August. Missions of experts were sent to Greece, Polan South America at the requests of the countries involve survey the needs for improved production and distrib These missions made suggestions to the national govern and to the F.A.O. Other missions were started to Siam, gary and Venezuela to report in 1948.

Special conferences were held on timber, fish, cereals an diseases of animals. Reports were made on wheat, rice, and rural welfare. Studies were begun on many tech problems.

The World Census of Agriculture was planned to cov phases of the food supply in the year 1950. A special For office was set up in Geneva, and the headquarters of the fo International Institute of Agriculture at Rome was ma temporary European headquarters. The absorption of th stitute was almost finished and most of its staff were pens or employed by F.A.O.

The plan for the World Food council was approved b full conference of 54 governments in Geneva in August. council was to consist of 18 of the governments, meeting tervals between the annual sessions of the full conferenc keep the world food situation under review and to take a in emergencies. It would make recommendations only o basis of information gathered by its staff of experts.

The International Emergency Food council, which succe the Combined Food board of the war years, completed its and turned its staff, functions and files over to the World council of the F.A.O. at the end of 1947. During the yea Emergency council, which represented 35 nations, made cations of scarce food among the countries. The headqua of F.A.O. continued to be at Washington, D.C., although bers of its staff were working in many parts of the world

The International Federation of Agricultural Producers ganized in London in 1946, held another meeting in the Ne lands in June and adopted a constitution. A director was c and plans were made for a third annual convention in in May 1948.

Efforts to reach accord on a new world wheat agree between the principal grain growing and consuming nations continued at two conferences without success. About 16 na were interested, and more meetings were planned for 19 strive for accord. The International Trade organization unable to reach a final agreement at its Geneva meeting was in session at Havana, Cuba, at the end of 1947. The come of the latter meeting was thought to have much t with the trade in foodstuffs and to affect all agricultural age from a policy standpoint. (J. C. M

**Foot and Mouth Disease:** *see* VETERINARY MEDICINE

**Football.** Notre Dame and Michigan shared most of the ours in intercollegiate football during 1947 as marks were established for attendance and receipts. The ri between the Fighting Irish and the Wolverines for the myt national championship was as close as anything football known in many years.

Army, whose winning streak had begun in 1944, was h finally by Columbia. In the most surprising result of the se the West Point cadets, who had gone through 32 games wit defeat, lost to the Lions by the margin of a single point, after leading by 20-7. Still among the strong teams of the try despite the loss of the famous backfield combination of anchard and Glenn Davis and six other 1946 regulars, Army o was defeated by Notre Dame, 27-7. This game marked the spension of relations between the two teams, which had met nually since 1913.

Notre Dame went through the season with a perfect record r the first time after 1930, Knute Rockne's last year as head ach. Michigan, which lacked Notre Dame's size but was ex- ptionally fast and had one of the smartest attacks of the year, o won every game and gained sole possession of the Western nference championship for the first time after 1933. Fritz isler was voted outstanding coach of the year in the poll ken among the coaches of the country; Frank Leahy placed urth. The Heisman trophy, awarded to the outstanding player the year, went to Johnny Lujack, Notre Dame's brilliant arterback. Bob Chappuis, Michigan's famous halfback, was nner-up in votes received.

One other team of major status went through the season th a perfect record. Penn State, coached by Bob Higgins, n every game on its schedule for the first time since 1912 d was awarded the Lambert trophy as the leader of the east. uthern Methodist, with one of the year's outstanding backs Doak Walker, and Pennsylvania, with an all-American centre Chuck Bednarik and a highly talented back in Tony Minisi, re also unbeaten, though tied once.

Southern Methodist won the championship of the Southwest- n conference on the strength of its one-point victory over xas, which won all of its other games and had a great back Bobby Layne. Pennsylvania was the best in the east's Ivy oup.

The title in the Southern conference went to William and ary. Mississippi, with one of the most effective passing com- nations in history in Charley Conerly and Barney Poole, won disputed title to the Southeastern conference championship r the first time.

Southern California, unbeaten until its game with Notre ame, took the Pacific Coast conference crown. Oklahoma and ansas, which had one of the year's best ball carriers in Ray vans, tied for Big Six honours. Tulsa won the title in the issouri Valley and Utah in the Big Seven. Princeton was ng of the Big Three.

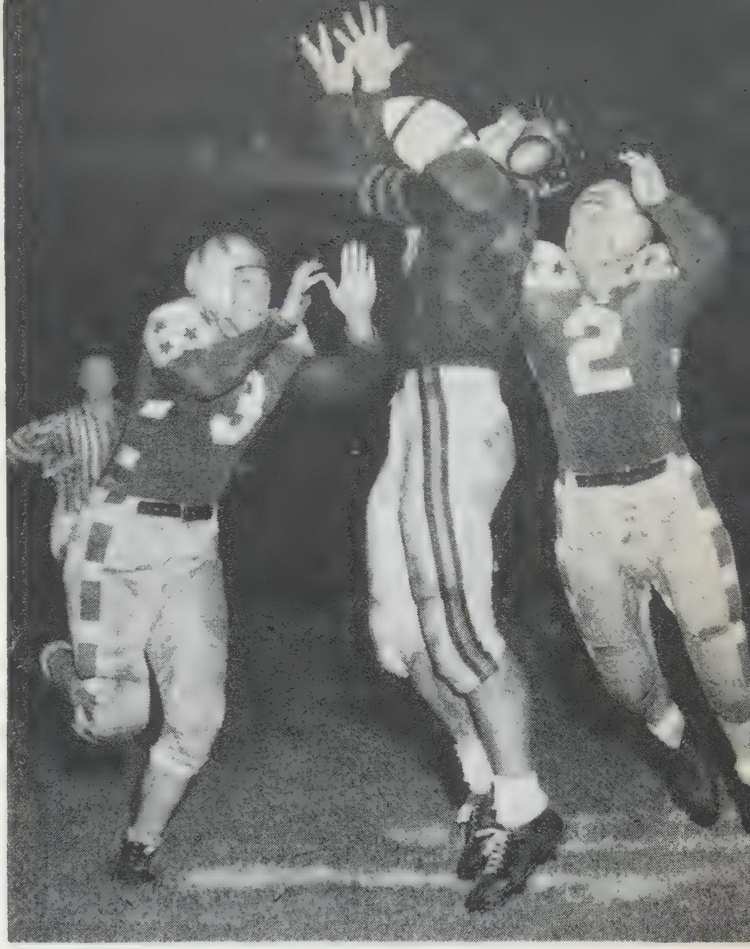
California, beaten only by Southern California and led by a w coach, Lynn Waldorf, Alabama, North Carolina, Georgia ech, Rice and Columbia were among the other strong teams the season.

Outstanding players in addition to those mentioned included e Steffy of Army, Harry Gilmer of Alabama, Bob Davis of eorgia Tech, George Connor, Ziggy Czarobski and Bill Fischer Notre Dame, Dick Scott of Navy, John Ferraro and Paul eary of Southern California, Chalmers (Bump) Elliott, Bob ann and Len Ford of Michigan, Jack Cloud of William and ary, Steve Suhey of Penn State, George Savistsky of Penn, ick Harris of Texas, Ike Owens of Illinois, Tom Fears of .C.L.A., Charley Justice of North Carolina, Dan Edwards of eorgia, Leo Nomellini of Minnesota, Rod Franz of California nd Bill Swiacki of Columbia.

Michigan, as champion of the Western conference, was in- ted to the Rose Bowl at Pasadena to play Southern California New Year's day, 1948. Crisler's Wolverines won by the top- eavy score of 49-0.

In the Sugar Bowl at New Orleans the contestants were Ala- ma and Texas. The decision went to Texas, 27-7. Southern ethodist and Penn State met in the Cotton Bowl at Dallas, ex., with the game resulting in a 13-13 tie. The Orange Bowl Miami, Fla., presented Georgia Tech against Kansas. The rmer won, 20-14.

Tremendous crowds attended the college games in all sections of the country during 1947. Notre Dame drew the year's largest gathering with Southern California in the Los Angeles coliseum—104,953 spectators. In all, 571,527 saw the Fighting Irish perform, breaking the 1929 figure of 560,000.



GEORGE GULYANICS (centre) of the Chicago Bears, fumbling a pass during the game with the College All-Stars at Chicago in July 1947. The All-Stars upset a 14-year record by defeating the Bears 16 to 0

Southern California attracted 102,000 when it played U.C.L.A., and 101,500 filled Philadelphia's Municipal stadium as Army thoroughly trounced Navy. President Truman, members of his cabinet and high ranking officers of the army and navy were in the crowd.

The T formation remained the most favoured style of attack, but the single wingback made a comeback. Teams that had abandoned it took it up again, some in conjunction with the T. Michigan used both, and Penn State, S.M.U., Pennsylvania and Mississippi attacked from the single wing. Notre Dame and Army continued to use the straight T. Defensively, the five- and six-man lines were much in evidence. A few teams, including Navy and Cornell, used a seven-man line with a diamond secondary.

The new substitution rule, permitting an unlimited number of one-man replacements, made it possible for more players to get into the games. It also resulted in the use of specialists as never before. Most coaches of large squads had offensive and defensive units in the line or backfield, or both. Michigan had a light offensive line and a heavier one for defense. Fast backs and passers were usually rested on defense, adding to their effectiveness on the attack. The continual substituting made it difficult for the spectators to keep track of players on the field. It also made it possible for the coaches to send in instructions as often as they wished and control the running of the team. But it was generally felt that the rule made for a better grade of football and for less injuries.

**Professional Football.**—The Chicago Cardinals won the championship of the National league for the first time after 1925 and the Cleveland Browns retained the title in the new All-America conference. The Cardinals won the Western division honours by defeating the Chicago Bears, 30-21 before a record crowd of 48,632 at Wrigley field, Chicago. In the east, the Philadelphia Eagles came through for the first time by trouncing the Pittsburgh Steelers, 21-0, in the play-off of a tie for first place.

The East-West play-off for the championship of the league resulted in a 28-21 victory for the Cardinals over the Eagles. The game was played on a frozen gridiron on Dec. 28, and only 30,579 turned out in Chicago's Comiskey park. Steve Van Buren of the Eagles, the league's leading ground gainer, was completely held in check while the Cardinals' Charley Trippi made touchdown runs of 75 yd. and 44 yd. and Elmer Angsman twice ran 70 yd. for scores. Philadelphia's Tommy Thompson threw 44 passes, of which 27 were completed for 297 yd., breaking the record made by Sammy Baugh of the Washington Redskins in the 1937 play-off.

The Cleveland Browns and the New York Yankees again won the sectional honours in the All-America conference. In the play-off the Browns defeated the Yankees in the latter's stadium, 14-3, before 60,103. Otto Graham of the Browns, with his passing, and Spec Sanders and Buddy Young of the Yankees were the offensive stars of the league. The New York Giants, hard hit by the loss of Frank Filchock, who was banned from the league, had their poorest season in years but picked up when they acquired Paul Governali, former Columbia passer.

The two rival leagues continued to war on each other. The conference's efforts to get together with the old circuit on a common draft and a postseason world series were rejected by the National, though the owner of the Eagles spoke in favour of a common draft. As a result of the warfare and the high bidding for players, few teams in either circuit made any money, and some of them suffered huge losses. Among the latter were the Chicago Rockets and the Brooklyn Dodgers of the conference. Jimmy Crowley, coach of the Rockets, retired from football. The Yankees and Browns, in a meeting during the regular season, played to a gathering reported as 70,060, the largest to see a professional game in New York city after Red Grange made his debut at the Polo Grounds almost a quarter of a century before.

**Canada.**—On the last play of the game, Joe Krol, brilliant halfback, kicked the point that enabled the Toronto Argonauts to defeat the Winnipeg Blue Bombers, 10-9, in the East-West play-off for the Grey cup and win the dominion championship for the third successive year.

The Argos qualified to represent the east by finishing on top in their own league, the Big Four, and then defeating the Ottawa Trojans, champions of the Ontario Rugby Football union. The Blue Bombers eliminated the Calgary Stampeders in the west.

The University of Western Ontario Mustangs completed their eighth undefeated season in the Intercollegiate union. They were prevented from competing for the Grey cup by a rule of the union forbidding postseason games.

There were many who thought the Mustangs better than the Argos.

The season was notable for the number of coaches brought across the border. Vic Obeck, former member of Lou Little's staff at Columbia university, was installed at McGill university. Bob Masterson, one-time end on the University of Miami team and the Washington Redskins, was assistant coach at the University of Toronto. Sam Fox, erstwhile New York Giant, took charge of the Ottawa Rough Riders. These men, trained in U.S. methods, took steps to organize clinics among the high school coaches, and the foundation was laid for the formation Canadian Rugby Football Coaches association.

Another player from across the border to play a p Canadian football was Frank Filchock, formerly of the York Giants. Barred from professional football in the Na league for failure to report a bribe offer, Filchock was as a player by the Hamilton Tigers without the sanction other clubs in the Big Four. In midseason he was grant eligibility card and remained with the Tigers as both and coach.

Virgil Wagner of the Montreal Alouettes, leading point in the Big Four, was awarded the Jeff Russell Memorial tr given annually for excellence of play and good sportsma

(A. D

**Great Britain.**—*Rugby.*—Weather dominated the sp the first three months of the year. It was so bad that Rugby union clubs went nine weeks without a game. It however, possible to play all the important matches on th pointed dates, and England and Wales were bracketed f championship, each losing only one match. Lancashire wa county champion, with a brilliant side led by veteran Jack ton, who also led England. Eng. Comdr. S. F. Coopper, secretary to the Rugby Football union since 1924, resigne was succeeded by the old England forward, F. D. Prentice the first time the universities match was played on a Satu rather than midweek, and it was won by Cambridge.

The leading Rugby league clubs were Wigan, Leeds Bradford Northern, the last-named club winning the cha cup at Wembley, by beating Leeds. In the autumn t sides from Australia (Rugby union), captained by W. M Lean, and New Zealand (Rugby league) visited Britai France.

*Association.*—It was the "Old Guard" who kept the flag in the international world and F. Swift, H. Carter, T. La S. Matthews and W. Mannion helped to make a superb En side undefeated champions. The English cup was won by ton Athletic, and the Scottish cup by the Rangers. The l championships were won by Liverpool and the Rangers, re tively. In heading the Division Three (Northern Section) Doncaster Rovers gained the record number of 72 points matches out of a possible 84.

(D. R.

**Foreign Exchange:** *see* EXCHANGE CONTROL AND EXCH RATES.

# Foreign Investments in the United States.

The value of foreign investments in the United States on 30, 1947, was estimated by the United States departme commerce at $17,395,000,000, an increase of $1,255,0 over the value of $16,140,000,000 at the close of 1946. rise was more apparent than real inasmuch as the U.S. of such international organizations as the International for Reconstruction and Development and the Interna Monetary fund rose from $474,000,000 at the end of 19 $2,714,000,000 at mid–1947. Exclusive of these hol therefore, the U.S. assets of foreign countries fell by $985 000 in this period.

At mid–1947 foreign long-term investments in the U States of $7,845,000,000 were $140,000,000 lower than a previous year end, largely as a result of net liquidatio about $90,000,000 of U.S. securities and a decline in se prices, which was partly offset by the reinvestment of ea of foreign-controlled enterprises operating in that co Foreign-country holdings of short-term U.S. assets (wi original maturity of one year or less) fell by $870,000,0

*Estimated Value of Foreign Investments in the United States, June 30, 1947**

(In millions of dollars)

| Country or area | Long-term assets | | | Short-term assets | Total |
|---|---|---|---|---|---|
| | Securities | Other | Total | | |
| untries participating in European Recovery program: | | | | | |
| Austria | 3 | 3 | 6 | — | 6 |
| Belgium | 55 | 130 | 185 | 172 | 357 |
| Denmark | 10 | 24 | 34 | 52 | 86 |
| Eire | 14 | 26 | 40 | 18 | 58 |
| France | 225 | 240 | 465 | 316 | 781 |
| Germany | — | — | — | 27 | 27 |
| Greece | 5 | 27 | 32 | 32 | 64 |
| Iceland | — | — | — | 7 | 7 |
| Italy | 14 | 49 | 63 | 187 | 250 |
| Luxembourg | 5 | 8 | 13 | 22 | 35 |
| Netherlands | 580 | 415 | 995 | 220 | 1,215 |
| Norway | 20 | 30 | 50 | 91 | 141 |
| Portugal | 12 | 9 | 21 | 42 | 63 |
| Sweden | 50 | 65 | 115 | 133 | 248 |
| Switzerland | 645 | 225 | 870 | 395 | 1,265 |
| Turkey | 10 | 6 | 16 | 51 | 67 |
| United Kingdom | 600 | 1,425 | 2,025 | 396 | 2,421 |
| Total, participating countries | 2,248 | 2,682 | 4,930 | 2,161 | 7,091 |
| Canada and Newfoundland | 680 | 730 | 1,410 | 588 | 1,998 |
| Other areas | 760 | 745 | 1,505 | 2,577 | 4,082 |
| Total, all areas | 3,688 | 4,157 | 7,845 | 9,550† | 17,395† |

oes not include gold held in the United States for foreign account, including international itutions, amounting to $3,709,000,000.

ncludes $2,700,000,000 for international organizations, about $900,000,000 of imated holdings of U.S. currency and claims on the U.S. government, an omission estimate $500,000,000, and more than $100,000,000 of brokerage balances not included in data for individual countries.

ource: United States department of commerce.

The liquidation of these investments and the size of remain- g foreign investments in the United States provoked consider- le discussion during 1947. Sentiment was voiced that it was ly fair that countries calling on the United States for financial d should first make reasonable use of their own realizable sets, including those of their citizens. Others proposed finan- al aid without reference to the foreign assets in the United ates, but perhaps with the feeling that in the long run quidation would be harmful to those countries.

**Mobilization of Private Assets.**—The European countries o requested U.S. assistance had varying degrees of success mobilizing the investments of their nationals in the United ates. Great Britain had begun such mobilization in 1939. lthough substantial amounts were liquidated during World ar II, the value of British assets in the U.S. on June 30, 1947, ceeded $2,000,000,000, including those of citizens of other untries resident in England. Italy's dollar assets were rela- vely small and the Italian effort, if any, to acquire the foreign sets of its citizens was not generally known. France ap- rently met resistance from private French investors in its tempt to acquire dollar assets; an order of Jan. 1945 call- g for a census of such assets was followed in July 1947 by order vesting U.S. securities and compensating their owners French francs. Subsequently, the French government found necessary to request both the Swiss and U.S. governments aid it in locating French holdings not reported to it by its ationals. The latter governments were said to have refused supply the requested information on the grounds that such ata were confidential. No substantial liquidation of French- wned United States securities was reported during most of 947.

The Netherlands government, on the other hand, attempted encourage the voluntary liquidation of dollar securities held y Dutch investors, after taking ownership of privately held old and foreign currency. However, investors were reported to ck enthusiasm for the offer to exchange Netherlands 3% overnment bonds in return for their dollar securities. The wedish government requisitioned the short-term dollar assets of s nationals and called for registration of their U.S. securities. ittle information was available regarding the efforts, if any, f the other so-called Marshall plan countries to mobilize their ationals' holdings of securities issued in the United States.

Foreign governments faced the added difficulty of liquidating rned-in assets (in many cases the controlling interest of large companies) without serious loss. Moreover, there was a reluctance to liquidate U.S. assets because they earned dollar income and were relatively safe insofar as principal was concerned. In the case of Great Britain the concern may also have existed that injury to its traditional role as a supplier of banking and insurance services might follow depletion of its dollar assets. The prewar reliance upon foreign-exchange reserves as part of the legal reserve against domestic currency in circulation and deposits was hardly considered by the Marshall plan countries (and other countries) in view of the shortage of dollars readily available for current purchases. However, the amounts that should remain unliquidated for trade purposes were not always certain since the working dollar balances necessary to finance international transactions are not fixed sums derived by simple formulas, but vary according to the total volume of such transactions and a complexity of psychological factors, including confidence in a country's currency.

In the light of these circumstances it was not surprising to find that few new foreign enterprises were reported to have been established in the United States during 1947. Nevertheless, compilers of that country's balance of payments were led to suspect by discrepancies in their balance-of-payments data that the progressively difficult economic situation of foreign countries was inducing movements of capital from Europe and elsewhere to the U.S., despite exchange controls in European countries, and in a manner that went undetected in the United States.

**U.S. Controls.**—During 1947 the U.S. treasury department was apparently satisfied that a significant part of the U.S. currency and securities that had fallen into axis hands during World War II had been recovered. In April the department announced that it would no longer be necessary for persons receiving or importing U.S. currency of any denomination from foreign countries to submit it to a federal reserve bank for examination. Instead of a general control over imported securities, a list of "scheduled securities" which had been looted from axis-occupied countries during the war was issued by the treasury in July. The purpose of the list was to prevent the entry and sale of such securities into the United States by anyone except their rightful owners.

The treasury also further relaxed its control of foreign funds. By Dec. 1947 only the assets of the following countries remained frozen: Bulgaria, Germany, Hungary, Japan, Portugal, Rumania, Spain and Yugoslavia; also, assets of nationals of certain other countries which had not been certified by those countries to be free of axis interest. The U.S. assets of Poland, Austria, Sweden, and Italy had been unblocked during the year, and the Yugoslav government was reported to have been negotiating with U.S. authorities to release $56,000,000 of Yugoslav gold that had been frozen during the war.

The Office of Alien Property continued to vest property in the U.S. in which the axis had an interest, including liquid assets of hostile German and Japanese nationals that had been frozen earlier by the treasury department. The value of property vested during 1947 was relatively small, however, compared with the war years, and the attention of the office was apparently directed to supervising the administration of seized axis property and appraising U.S. and other claims against such assets. The largest axis interest vested during 1947 included the Dutch and German interests in the North American Rayon corporation and the American Bemberg corporation valued at approximately $15,000,000. The interests of nationals of both countries were seized inasmuch as a considerable German interest had existed in the parent of both companies, Algemeene Kunstzide Unie, N.V., a Dutch company. Although the Paris agreement on German reparations stipulated that each participant country should receive German assets within its borders as part of its reparations, the ultimate disposition of such property in the United States remained a matter for the congress to determine. Peace treaties between the U.S. and Bulgaria, Hungary, Italy and Rumania allowed for the return of properties previously seized by the Office of Alien Property. No formal decision was reached during 1947 with regard to the treatment of similar Japanese property.

Total payments of income to foreign investors during 1947 were probably little changed from the aggregate of $200,000,000 paid in the previous year. Nevertheless, sharp changes were anticipated in payments to individual countries. The U.S. department of commerce estimated that in 1945 payments to the United Kingdom from U.S. investments was approximately $86,000,000, of which about $43,000,000 was from British insurance companies operating in the United States. Payments in 1946 were estimated at $57,000,000, including $11,000,000 from insurance companies. For 1947 it was expected that the income from insurance company operations would decline further and that such business would even experience a loss, largely as a result of the explosions and fire at Texas City, Tex. It was expected that the liquidation of Netherlands holdings of about $50,000,000 in U.S. securities in the first half of the year would reduce income payments to that country.

The loss by Britain and Canada of more than a third of their short-term dollar assets had little effect on their receipt of income inasmuch as such assets, mainly bank deposits and short-term government obligations, yielded practically no income: Severe declines were also registered for other countries in the western hemisphere and in Europe. (*See* also EUROPEAN RECOVERY PROGRAM; EXCHANGE CONTROL AND EXCHANGE RATES.)

(M. AB.)

**Foreign Ministers' Conferences.** Between Jan. 14 and Feb. 25, 1947, deputies of the Council of Foreign Ministers met at London to begin the work of preparing treaties with Germany and Austria, in accordance with the agreement reached by the council in the preceding December. The deputies on the German treaty divided their time between discussion of the procedure to be followed in drafting the treaty and hearing the views of Allied states on the treatment of Germany. The western European Allies urged that Germany be organized as a weak confederation operating, however, as an economic unit. The Netherlands, Belgium and Luxembourg again requested minor territorial changes in Germany's western frontier, while Denmark felt that the Kiel canal should be placed under international control. Czechoslovakia also proposed small frontier rectifications designed to improve defense and communications, while Poland asked for confirmation of the Polish-German frontier as defined provisionally at Potsdam. The western Allies asked for moderate reparations and stressed the necessity for the restoration of German production and trade, while the eastern Allies and Greece asked for large reparation payments. South Africa opposed detachment of the Saar from Germany and proposed that its eastern frontier be moved to the east of the Oder.

Australia and Canada laid special emphasis upon broadening the procedure of peacemaking to permit active participation by all those Allies which had contributed military forces to the defeat of Germany. The Australian representative proposed that 18 Allies be admitted to discuss all aspects of the treaty at the council table, while South Africa suggested that they be represented rather on committees set up to consider various sections of the treaty. The French, British and U.S. deputies proposed that the Allies sit as observers at the council, with the right to discuss matters affecting their interests. The soviet deputy
opposed all proposals for broadening the procedure and i
moved that membership in the later general conferen
limited to those European Allies whose territories had
under German occupation; this arrangement, if adopted,
have deprived the British dominions of any voice in the
sideration of the treaty. A French compromise called fo
setting up of a committee of information and consultati
which all the Allies would participate. Lengthy discussions
ing led to no agreement on procedure, the deputies pres
four separate proposals to the council.

The deputies on the Austrian treaty heard Yugoslav c
for 1,200 sq.mi. in southern Carinthia and $150,000,000 i
arations from Austria. Czechoslovakia's claims for minor
fications in its frontier with Austria were referred to the
governments for direct negotiation, while Austrian repres
tives pleaded for an early treaty which would establish Aus
independence on a solid footing. The draft treaty present
the deputies to the council contained a considerable numb
agreed provisions and set forth the unagreed clauses in
conflicting versions. There was no sign of agreement o
more difficult questions, such as the Yugoslav territorial
or the definition of soviet claims to German assets in ea
Austria, but the progress made by the deputies held promi
the early conclusion of the Austrian treaty.

The positive achievements of the fourth session of the C
cil of Foreign Ministers, which met at Moscow from Mar
to April 24, were an agreement confirming the divisio
Prussia into a number of smaller states and a request t
United Nations to provide interim financial assistance t
future administration of the free territory of Trieste.
French, British and U.S. delegations also agreed on a sli
scale device under which deliveries of Ruhr coal to F
would be increased gradually. The principal issues involv
negotiating a German settlement among the major Allie
mained unresolved or were further exacerbated.

In the question of treaty-making procedure the soviet fo
minister emphasized the exclusive competence of the four A
but was willing for other Allied governments to be hea
questions which concerned them individually. Secy. of
George C. Marshall and Ernest Bevin urged that those A
which had provided military forces against Germany rece
fuller voice through membership in important commissions
that other states which had been at war with Germany sh
also be heard both by the council, on matters which aff
their interests, and at the general conference, on their vie
the treaty as a whole.

Bitter controversy developed over the question of the
man-Polish frontier. Marshall urged that the permanent
tier be located to the east of the Oder river, because of
historic German character of the area and because of Germa
need for agricultural land. Vyacheslav Molotov, holding
the frontier had been settled at Potsdam and needed onl
confirmed in the treaty, rejected a U.S. proposal to set
boundary commission to examine this and other frontier p
lems. He also declined to discuss the French claim, supp
by Bevin and Marshall, for the economic integration of
Saar with France.

Secretary Marshall proposed that Germany be organized
federal basis, reserving to the states, or *Länder*, powers no
pressly vested in the central government, while the soviet
posals envisaged a highly centralized state governed from Be
Marshall also favoured the setting up of a provisional gov
ment which would consist of the present heads of the Ger
*Länder* governments, while Molotov urged that a provisi
government consisting of elected representatives together
representatives of trade unions and antinazi organizations

aced in charge of German administration after it accepted the viet demand for $10,000,000,000 in reparation. The U.S. ap- oach, supported in the main by Bevin and by Georges Bidault, e French foreign minister, was that the creation of a central vernment must follow, not precede, the effective establish- ent of German economic and administrative unity through eps taken by the occupying powers.

There was again wide divergence over the question of repara- ons. While Molotov insisted on $10,000,000,000, which he serted had been promised at Yalta, Marshall and Bevin took e position that the idea of collecting reparations from current oduction had been discarded at Potsdam in favour of re- ovals of excess industrial equipment and acquisition of Ger- any's external assets, and that exports of current production ust be applied to pay for necessary imports. A partial meet- g of the soviet demand appeared possible when Marshall sug- sted that some reparation could be provided from current oduction to compensate recipients of reparations for the re- ntion in Germany of additional industrial equipment which ould no longer be available for removal under the proposed creased level of industrial production. This suggestion met th no response from the soviet delegation.

When Marshall pressed for favourable action on the U.S. oposal for a 40-year treaty guaranteeing the disarmament and militarization of Germany, Molotov on April 23 countered advancing a series of amendments which would have inserted to the treaty the entire range of soviet demands. Further dis- ssion seemed unlikely to indicate a way out of the impasse, d on the following day the council adjourned.

At Moscow the ministers also devoted much time to the Aus- ian treaty and agreed on a number of additional provisions. the questions of the Yugoslav claim to southern Carinthia and e definition of German assets they failed to advance toward agreement. The soviet government appeared determined to ld onto the extensive industrial properties which it was erating in eastern Austria; the other powers were unwilling withdraw from Austria if that meant leaving it under soviet onomic domination. However, before adjourning, the council pointed an Austrian treaty commission to continue the con- deration of unagreed provisions in the draft treaty.

The new commission, meeting at Vienna from May 12 to Oct. , undertook a detailed examination of the individual enter- rises which were claimed by the soviet authorities as German sets, with special attention to oil and shipping. Toward the ose of the conference a compromise advanced by the French legation proposed that a definite list of enterprises be agreed as satisfying the soviet claim to German assets, thus cutting ort the endless legal controversies; that enterprises trans- rred to soviet ownership not enjoy an extraterritorial status ithin Austria and that all other enterprises be returned to ustrian control. This proposal, together with the unagreed re- ort of the commission, went to the deputies, who began their ork on Nov. 6 at London. They again discussed treaty pro- edure at some length, and on Nov. 22 they were ready to eport to the ministers that they had been unable to agree on an genda for the new meeting of the council.

The fifth session of the Council of Foreign Ministers met at ondon from Nov. 25 to Dec. 15. It repeated, with growing cerbity, the disputes of the previous session. On Nov. 26 Iolotov made sweeping charges against the other Allies, ac- using them of striving for an "imperialist peace," of plotting oth to ruin German industry as an undesirable competitor and use it as "a base for military adventures." Turning to con- rete issues, the council came closer to agreeing on the role of e smaller powers in the peace-making, but again reached no onsensus of views on the German-Polish boundary, the economic integration of the Saar with France or the establishment of boundary commissions. Positions were unchanged concerning the steps necessary for the creation of a central government in Germany, but the exchange of charges was sharper, especially on the soviet side. The soviet delegation accused the United States of making huge profits out of Germany and of buying up industrial properties, and demanded that the agreement to unite the British and U.S. zones be denounced as a violation of the Potsdam agreement. Bevin and Marshall pointed in turn to the removals of current production from the soviet zone and to the establishment of a huge soviet industrial trust in eastern Germany.

On Dec. 8 Molotov demanded a share in the control of the Ruhr, cancellation of the bizonal agreement and assurance of $10,000,000,000 in reparations at 1938 prices; a soviet draft of that date set delivery of reparations ahead of German domestic consumption or payment of necessary imports. On Dec. 10 Marshall again refused to agree to reparations from German current production, which had been rejected at Potsdam, as the price of German economic and administrative unity, which had been agreed there. When no sign of a meeting of views appeared from these exchanges, Marshall proposed on Dec. 15 that the council adjourn. Although no date was set for a later session, the deputies were instructed to continue work on the Austrian treaty, and at their first meeting, on Dec. 17, it was noted with some encouragement that the soviet representative offered to present a concrete proposal defining the soviet claims to industrial property in eastern Austria. (P. E. M.)

**Foreign Missions:** *see* Missions, Foreign.
**Foreign Trade:** *see* International Trade.

**Forests.** Enrolment of students in the forestry schools of the United States reached record totals in 1947. Nearly 30 universities and colleges offered courses leading to a degree in forestry. A total of 7,000 students enrolled in undergraduate and graduate forestry courses was reported for the 1947–48 school year. The prospects were that the number of forestry graduates in the next few years would be greater than public forestry agencies and private forest industries could absorb. The United States forest service pointed out, however, that forestry practice currently was being applied to only a fraction of the nation's forest area. If and as sound forest management was extended, the need for men with technical forestry training would increase.

As part of a reappraisal of the postwar forest situation in the United States, the forest service conducted a study of the problem of wastage in the utilization of wood. A report of its findings was issued in 1947. It said that only 43% of all the wood cut in the forests winds up in useful products, other than fuel; 35% is not used at all. Of the 22% used as fuel, much is used wastefully or inefficiently, and much could be used to better purpose if efficient handling and processing techniques were developed.

Logging waste—tops and limbs of trees, cull logs and other material left in the woods after cutting accounts for 45% of the total waste; 49% is waste in the primary manufacture of logs into lumber, pulp and paper, veneer and other products; and 6% is wasted in secondary manufacture.

A major need, said the report, is greater integration of wood-using industries in timber-producing areas. One-product operations, still typical of the forest industries, tend to be wasteful. A variety of logging and manufacturing operations in a given locality can effect a more complete and advantageous utilization of the timber that is cut or that ought to be cut under good forestry practice. Encouraging developments along these lines

ACCESS ROADS to make more timber available were being built in many U.S. national forests during 1947. Logs are shown being loaded at California's Mendocino national forest, with the access road barely completed

by several forest industry concerns were cited. The report also recommended continued research to find ways of making old products with less waste or to devise new ways of using material now wasted; technical assistance to woodland owners and wood processors to get the results of research into use; and public aid in pioneering operations to establish the practicability of new waste-reducing or waste-consuming processes.

The forest service in 1947 invited bids for the purchase of timber in two large tracts in the Tongass national forest in Alaska. This action was expected to open the way for development of a pulp and paper industry in southeastern Alaska which would materially increase the supply of paper products in the United States, where paper products, especially newsprint, had been seriously short of demand during and after the war. Tongass national forest has extensive stands of timber which under sustained yield management could support a permanent, large-scale pulp and paper industry. Purchasers of the timber would be required by the forest service to follow cutting methods that would assure continuous timber growth.

Lyle F. Watts, chief of the forest service, in his annual report for 1947, emphasized the importance of vegetative growth on forest and range land watersheds for the conservation of water supplies, stabilization of soils and regulation of streamflow. Fire, overgrazing and overcutting of timber can cause serious damage to watershed values, he said.

> Muddy streams, dried-up springs, lowered water tables, eroding lands and reservoirs filled with silt, damaging floods every year—all these things are plain indications that much watershed land is not being handled as it should be.
>
> Damaged watersheds can be repaired. Rampaging streams can be brought under control. Water sources can be kept in good condition. And to a large extent, the kind of forest and range management that restores and maintains good watershed conditions will also make for increased timber supplies and increased livestock production. Recreation and wildlife also will benefit.
>
> Much of the wealth of our Nation has derived from our utilization of the soil, water, and forests which nature gave us. Fundamentally, our wealth is based upon the balance that existed between the water, land, and vegetative resources. That balance is being thrown out of kilter in many places. We shall do well to work for the restoration of that balance through wise and foresighted management of the land. We should work for a way of life that will not be under pressure to destroy the basis of its own existence.

Publications of the year in the forestry field included three forest reappraisal reports issued by the United States f service: *Wood Waste in the United States; Protection A Forest Insects and Diseases in the United States;* and *F Cooperatives in the United States.* The first issue of *Unas* a new bimonthly magazine of international forestry, appear July 1947, published by the division of forestry and forest ucts of the United Nations Food and Agriculture organiz The magazine was issued in English and French edition Spanish edition was planned later.

(C. E. F

**Europe.**—The problem of closing the gap between Eur timber needs and the available supplies of softwoods, wit causing lasting damage to the remaining forests, was the t of an important international timber conference held at Ma bad (Marianské Lázně), Czechoslovakia, in April and Representatives of 34 nations attended the conference, w was organized by the food and agriculture branch of the U Nations and the Czechoslovak government. The conference ommended that during the felling seasons 1947–48 and 194 all softwood-producing countries should either increase cuttings by 10% or achieve a comparable result by restric in consumption, and that reforestation and intensive and s tific management of existing forests should be carried o counter the effect of overcutting. The international contr forest pests and co-operation in the supplies of forest tree s and trans-plants were subjects recommended for investig by the appropriate committee of the United Nations. A for statistical conference was held in Rome early in the year Scandinavian countries, including Denmark, also held an portant forestry conference at Oslo.

In Germany heavy fellings in softwood forests were co ued, and large quantities of timber were exported as war rep tions to the Soviet Union, France, Great Britain and other c tries. In the British zone of Germany the supervision of ti production was returned to German control.

**Great Britain and the Commonwealth.**—An empire estry conference, the first after 1935, was held in Englan July. Thirty-six different forest authorities presented staten which were later summarized by the Central Statistical in the publication *Empire Forests and the War.* The sub discussed included land utilization and forest policy, surve world timber resources, forest management and forest prod research.

Reorganization of the Forestry commission enabled the program of afforestation to be well launched and an advi forest service to be established. A special engineering br was formed to deal with the planning and construction of f roads and bridges. In spite of the continued control o timber felling by licence, much timber was felled to meet u needs. Hedge-row and poor timber were also felled, owin the high prices obtainable for domestic fuel during the a shortage of coal.

In many of the crown colonies there was a slowing dow the heavy wartime exploitations of timber, but there was siderable development in the marketing of new or little-kn hardwoods species. The return of many officers of the col forestry services to general forestry duties, together with resumption of normal recruitment of junior officers, made sible the reorganization and consolidation of colonial f staffs. In many colonies scientific stock-mapping of the for was undertaken and the regeneration of felled areas begun.

Apart from the use of forests for direct timber product the year's most spectacular project was the Iraqi developm scheme, planned to make the country free from flood da and to increase the irrigated area to 15,000,000 ac. The poli changes in India and Burma brought to an end the Indian f service, founded in 1856.

(A. H. L

## ormosa

(Taiwan or T'ai-wan). Formosa is a large island in the western Pacific, separated from China to the est by the Straits of Formosa and from the Philippines to the uth by the Bashi and Balingtang channels. Under Japanese ıle the Pescadores (Bōkotō) and other outlying islands formed political division of the Taiwan government-general. Area, ,589 sq.mi., including Pescadores and neighbouring islands. op. (1946 est.), 6,250,403.

The capital is Taipei (formerly Taihoku) (326,407 in 1940); her large cities include Takao (152,265), Tainan (142,133) ıd Keelung (Kiirun) (100,511). Principal religions are Budhism, Confucianism, Taoism and Shintoism. In 1940 there ere about 60,000 Christians.

**History and Government.**—Formosa was ceded to Japan y China under the treaty of Shimonoseki in 1895 at the conusion of the Sino-Japanese War. The island was administered a Japanese colony until Japan's surrender in 1945, when nder the terms of the Cairo declaration of 1943, Formosa was laced under Chinese administration. In Oct. 1945, General hen Yi, governor of Fukien province from 1934 to 1941, asımed the governorship of Formosa for the Chinese National overnment. At the end of Feb. 1947, a rebellion began on the land, centred in the capital. The Formosans convoked an utonomous assembly to institute new laws, pending recognition f their demands by the Chinese government. By the end of Iarch, however, the rebellion was put down by Chinese troops. ı April Chen Yi was replaced as governor by Wei Tao-ming, ormer ambassador to the United States.

**Education.**—In 1941 there were 1,000 primary schools with 12,076 achers and 740,693 students; 6 normal schools with 225 teachers and 507 students; 4 colleges with 236 teachers and 1,385 students; and university with 345 students.

**Finance.**—Under Japanese rule, Formosan currency was based upon the ıpanese yen (valued at 23.43 U.S. cents in 1941) with the Bank of aiwan as the central bank. The Chinese introduced a special currency r Formosa based on the former yen notes.

**Trade and Communications.**—In 1939 there were 879 mi. of government ilroads, 1,624 mi. of private railroads and 500 mi. of tramways; there ere 10,000 mi. of roads of all types. There were 220 telegraph offices, 5 post offices and 123 telephone exchanges. In 1943 Formosa's overseas ade amounted to exports of about 400,000,000 yen and imports of 0,000,000 yen. During the first half of 1947, Formosa's most important ports were coal, sugar, fruits, tea and cement.

**Agriculture.**—Agricultural production in 1939 in short tons included: ce 14,540,000; sweet potatoes 1,400,000; sugar 1,270,000; bananas 0,000; oranges 29,700; meat and poultry 27,600; tea 15,400. The 1946 ce crop was estimated at 54,000,000 bu.

**Industry.**—During World War II Formosa produced sizeable quantities coal, cement, chemicals and salt.

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(S. Nr.)

## orrestal, James

(1892–    ), U.S. government official, was born on Feb. 15 in Beacon, N.Y. Ie studied at Dartmouth college, 1911–12, and at Princeon university, 1912–15. He enlisted in the U.S. navy in 1917 nd was assigned to its aviation force. Forrestal resigned from he navy with the rank of lieutenant in 1919 and resumed an arlier connection with Dillon, Read and Co., a Wall street anking firm, becoming its president in 1937. In Aug. 1940 he ecame undersecretary of the navy, serving in that capacity ntil the death of Secretary Knox, whom he succeeded on May 9, 1944.

Although originally opposed to a merger of the armed forces, e agreed (June 1946) to support the plan of President Harry . Truman to unify them. After the president signed (July 26, 947) the bill providing for the merger, he appointed Forrestal ead of the program as secretary of national defense. Forrestal vas sworn into office Sept. 17 by order of the president, then t sea on a battleship, returning home from the Inter-American Defense conference in Brazil.

On Oct. 1, Forrestal branded as "utter nonsense" soviet diplomat Andrei Vishinsky's charge that U.S. "big business" was seeking war; and on Oct. 20, he warned Russia that while Americans "hate the very idea of war," they believe that even war is preferable to such alternatives as living under a police state.

**Foundations:** *see* Donations and Bequests; Societies and Associations.

## Four-H Clubs.

The 4-H clubs in 1947 continued as an integral part of the co-operative extension service in agriculture and home economics. In 1947 the 4-H club program extended into practically every county in the United States, Alaska, Hawaii and Puerto Rico. The total 1947 enrolment of 4-H members was approximately 1,700,000. More than 175,000 volunteer 4-H club leaders, both adult and junior, assisted the county extension agents in carrying out the 4-H program in local rural communities.

Under the administration and supervision of the co-operative extension service of the United States department of agriculture and the land-grant colleges, rural young people between the ages of 10 and 21 continued their 4-H club groups of from 5 to 50 members. Each member took advantage of the opportunity to "learn by doing" and conducted a certain farm or home enterprise pertaining to agriculture or home economics and demonstrated to others what he had learned. Subject matter assistance was provided by the extension specialists located at the state colleges of agriculture. Each 4-H member kept a business financial record of his project work, wrote a story relating to his 4-H club experiences, made a public exhibit of his products and, at the end of the year, submitted his records to the county extension agents. Various incentives or recognition awards were provided to 4-H members who satisfactorily completed their work.

Local 4-H clubs continued to stress citizenship, leadership development, character building, community activities, group recreation, knowledge of subject matter, acquiring of skills and group organization in their 4-H programs.

The annual National 4-H Club camp was held June 11–18, 1947, in Washington, D.C., and was attended by 365 4-H members and leaders representing the states and territories, along with guests from Canada and several other countries.

The National 4-H Club congress was held Nov. 30 to Dec. 4 in Chicago, Ill., and was attended by 1,300 4-H members and leaders representing the states and territories, together with delegates from two provinces in Canada and international representatives from 11 other countries.

During 1947 the following was adopted as the official National 4-H Club pledge: "I pledge—My Head to clearer thinking, My Heart to greater loyalty, My Hands to larger service, My Health to better living, for my club, my community, and my country."

As an aid in further developing the 4-H program, co-operative extension agents and local volunteer 4-H leaders continued to use the following ten 4-H guideposts which were designed to outline a broad basis for 4-H activities in the postwar period: (1) Developing talents for greater usefulness; (2) joining with friends for work, fun and fellowship; (3) learning to live in a changing world; (4) choosing a way to earn a living; (5) producing food and fibre for home and market; (6) creating better homes for better living; (7) conserving nature's resources for security and happiness; (8) building health for a strong America; (9) sharing responsibilities for community improvement; (10) serving as citizens in maintaining world peace. (M. L.W.)

## France.

A republic of western Europe bounded on the north by the English channel, on the east by Belgium, Luxembourg, Germany, Switzerland and Italy, on the south by the Mediterranean sea, on the southwest by Spain and on the west by the Atlantic ocean. The country also includes the Mediterranean island of Corsica. Area: 212,737 sq.mi.; pop. (1946 census): 40,517,923. Chief towns (1946): Paris (cap., 2,725,374); Marseilles (636,264); Lyons (460,748); Toulouse (264,411); Bordeaux (253,751); Nice (211,165); Nantes (200,265). Languages: French, with some German in Alsace and Celtic in Brittany. Religion: no official church, mainly Roman Catholic with Protestant minority. President (elected Jan. 18, 1947): Vincent Auriol (*q.v.*); prime ministers: Paul Ramadier (*q.v.*) (Jan. 21–Nov. 23); Robert Schuman (*q.v.*) (from Nov. 24).

**History.**—On New Year's day, 1947, Interim Prime Minister Léon Blum in a broadcast appealed for co-operation of the public in a policy of price reduction so as to raise the real value of wages, which were to be stabilized. A government decree reducing prices with few exceptions by 5% was applied. The public had been profoundly alarmed by the increase of prices in 1946 (retail index figure: Jan. 1946=480, December=861) and welcomed warmly the hope of a reverse process. Blum's last act as prime minister was to visit the British prime minister, Clement R. Attlee, in London, where a joint communiqué was issued announcing an agreement to proceed with the negotiation of an alliance. (A 50-yr. treaty of alliance was signed at Dunkirk, on March 4, 1947, by Ernest Bevin and Georges Bidault.)

On Jan. 16 Vincent Auriol, Socialist and president of the assembly, was elected president of the republic. After Blum had refused to remain in office President Auriol asked Paul Ramadier, a Socialist, to form a government. Ramadier was elected prime minister by the assembly on Jan. 21. His cabinet included Communists, Socialists, Radicals, M.R.P. (*Mouvement Républicain Populaire*) and Independent Republicans, but with a disproportionate number of Socialists because the party accepted the responsibility of leadership. The Communists were granted the ministry of national defense but without powers of control over the other three service ministries.

The government had announced its intention of carrying on the Blum policy of stabilizing wages and reducing prices but was faced with the difficulty of reducing the cost of living when charges for electricity and gas had to be raised and the balancing of the budget required the abolition of subsidies. The C.G.T. (*Confédération Générale du Travail*) demanded an increase of the minimum wage to Fr. 7,000 a month. There was a four-hour protest strike of state and municipal servants which deprived Paris of both telephone service and traffic police on Feb. 14. Simultaneously with the protest strike the newspaper printers union (under independent leadership, not linked with either the Socialist or Communist parties) proclaimed a strike which kept Paris without newspapers for nearly a month.

In parliament divergencies between the Communists and the other coalition parties over policy in Indo-China led to violent scenes and repeated suspensions of the sitting. Although Ramadier in his first speech as prime minister had insisted that coalition solidarity was essential, he had to declare himself satisfied on March 23 when the Communist ministers were the only members of their party to vote the military credits for the far east, the rest abstaining. A similar divergence about the action to be taken in Madagascar after the rising there (*see* French Overseas Territories) emerged a week later.

On March 30 Gen. Charles de Gaulle emerged from retirement to make the first speech of a political campaign at Bruneval. He denounced the inadequate functioning of a state based on the interests of parties rather than of the nation. On April 7, speaking at Strasbourg, the general announced the formation of the R.P.F. (*Rassemblement du Peuple Français*, or Rally of the French People) and sharpened his attack against the Communists.

Trade union problems soon caused the final breach bet the Communists and the rest of the coalition. The Commu had in the two years following on liberation succeeded in d nating the organizations of the majority of the big unions also the C.G.T. executive committee. While taking care t inforce their position in the unions they had certainly us over long periods to discourage strikes. By April it had be evident that the government was not succeeding in sub tially reducing the cost of living which according to of statistics stood at 837 as compared with 856 in January. workers of France were therefore becoming impatient for increases to compensate them for the big increases of pric August, September and October of the previous year. T was growing impatience both with party control of the C. contrary to French labour traditions, and with the discou ment of strikes by the Communists. Almost simultaneous strike under noncommunist leadership broke out in the Renault works at the gates of Paris. In both the Socialist M.R.P. press appeared comments indicating satisfaction the Communists were losing their hold on the unions. The C munists reacted at once and overtly dissented from the gov ment's policy of continuing to stabilize all but the lowest gr of wages. On May 4 the entire Communist party including ministers voted against a motion of confidence in the gov ment which passed by reduced majority of 360 to 187 wit abstentions. On the evening of that day Ramadier summ his cabinet and (with the support of the president of the public) informed the Communist ministers that they had ce to be members of the government.

Ramadier's decision not to resign was approved by an o whelming majority of the Socialist deputies but by the Soci party's executive committee only on second thoughts and the narrow majority of 10 to 9. The national council of Socialist party authorized Ramadier and his Socialist collea to remain in a coalition which no longer included the C munists by only 2,529 votes to 2,125 after an all-night del

It was thus a government open to attacks on both flanks had to face a series of strikes in the early summer. In Ap had had to make the disagreeable announcement that the b situation was so bad as to make necessary both a reductio the ration and a serious deterioration of quality. By the en the third week in May there were bread riots in Lyons cau the resignation of the prefect, and riots by shopkeepers aga price control in Dijon which ended with the sacking of pu offices and the destruction of records. The government decl its intention of resisting threats of violence and strike ulti tums, but in point of fact the gas and electricity workers fo at the end of May that such an ultimatum took them more halfway to their goal. When negotiations with the railway were interrupted by a sudden strike all over France on Jun Ramadier announced that they could not be resumed till men had gone back to work, but they were resumed thro the mediation of the C.G.T. executive and practically all railway men's demands were granted by an agreement of June

So far the main disputes had been in the nationalized se of French industry. To prevent their spreading to the private sectors of industry, the employers federation and C.G.T. were authorized by the government to enter into di negotiations on wage and price levels, the results however to subject to government approval. This the government found self unable to give, though once more some concessions w made. Meanwhile, the government itself had to find funds, si the salary increases obtained by strikes had to be spread to ot professions and treasury bonds were not being renewed. government scheme not only increased taxation and the price

**RENCHMEN FLEEING IN PANIC** before the advance of armed colonial oops (left foreground) during a demonstration in support of the Communist-d general strike at Nice in Dec. 1947

bacco but by abolishing most subsidies increased the prices of ilk and bread. The bill was forced through the assembly by a ajority of 302 to 241 on June 24. Crowds of demonstrators ere mobilized outside the Palais Bourbon by the Communists nd there were sporadic protest strikes as far apart as Mareilles and the coal mines of the Nord. The strikes in the mines ecame general, the principal grievance being the quality of the read. A bank and department store strike broke out and a etallurgical strike was avoided by concessions, which were ien extended to the miners and bank clerks, bringing them ack to work at the end of June and the beginning of July. he cost of living had risen to 886 in May and 937 in June. July it was to go to 976 and a civil servants' strike was voided on July 14 only after a substantial increase in salaries ad been promised.

Meanwhile the Three Power conference on the Marshall proosal opened on June 27. The soviet refusal to co-operate left rance in the same camp with Great Britain and the United tates; since this followed the refusal of the soviet government the course of the Moscow conference to recognize French aims to the Saar (*q.v.*) and the conclusion on the same occaon of an agreement on German coal between France, Great ritain and the U.S., it was evident that France was no longer tting on the fence between the two groups of its allies.

At the end of August General de Gaulle stated that the R.P.F. ould run candidates in the municipal elections of Oct. 19.

The financial and economic situation was steadily worsening. The harvest, estimated at 3,630,000 short tons as compared with 8,360,000 in 1946, was one of the worst on record, and the daily bread ration was reduced from 8 to 6½ oz. at the end of August. Simultaneously, it was announced that because of the acute shortage of dollars all imports from the U.S. were suspended except fuel and wheat. A committee was formed to prepare radical cuts in expenditure so as to balance the budget at any price. These cuts were put at 23% by Ramadier in a broadcast of Oct. 8.

Parliament at last adjourned on Sept. 5, after giving Ramadier a last vote of confidence of 292 votes to 243 with 54 abstentions. Politics were now dominated by the trial of strength of the municipal elections.

The news broke that the French Communists had joined the Cominform (*see* Communism) on the same day (Oct. 5) that General de Gaulle delivered a strong anticommunist and anti-Russian speech to the biggest meeting of his career at Vincennes.

The last week before the polls a strike of the Paris transport system, originally launched by noncommunists but taken up with passion by the Communists, was followed by threats of renewed strikes by the electricity and gas, and railway workers. Big concessions brought the metro strike to an end and prevented the others.

The polling in the big towns on Oct. 19 constituted an immense success for the R.P.F. candidates who were supported by nearly all the right, by more than half the M.R.P. voters, by many of the Radicals and by some Socialists and former Communists. In Paris (52 seats out of 90) and a number of provincial towns the Gaullists won a clear majority. The Com-

FRENCH FARMERS harvesting a grain crop in southern France during the summer of 1947. Poor weather prevented the bumper crops needed to fill empty granaries and restrictions on grain consumption were increased during the year

munists lost much less heavily than the M.R.P. but the numerous Communist mayors were reduced to a relatively small number. The Socialists recovered sufficient ground from Communists in the Nord and in the Limousin to compensate for losses elsewhere.

Although results in the smaller communes showed less radical changes, it was clear that General de Gaulle now commanded support of about 35% of the country and the Communists still about 25%, leaving at most 40% of supporters to the moderate parties of the government coalition, who, however, still had a narrow majority in the assembly. The general declared in a haughtily worded statement that the only solution was a dissolution of the assembly after a change of the electoral law—for neither of which was there a majority in the assembly. It was believed that the general was not anxious to return to office at once.

Ramadier reduced his government to 13 ministers only and secured a majority of 300 to 280 with 18 abstentions on Oct. 30.

During the autumn the cost of living continued to rise rapidly. The index figure for August was 1,078, for November 1,336. In spite of the depressing record of unresolved political conflict and of failure to achieve economic equilibrium the situation had favourable elements. Coal production, alone in Europe, was above the 1938 level, being 104% of an average month in that year in July. On the same basis of comparison the general level of production was 101% in September, with steel at almost the same level as the over-all figure.

Negotiations with a view to a stronger government continued throughout the first weeks of November. In order to balance the budget the government found it necessary on Nov. 5 to raise the price of coal by 50% so as to do away with the subsidy, and to increase railway and, in Paris, Marseilles and elsewhere, municipal transport fares. After a strike of municipal services in Paris, a strike followed by street demonstrations broke out in Marseilles, and on Nov. 12 the mob succeeded in invading the law courts, where they liberated two accused, and the town hall, where the newly elected Gaullist mayor and his assistants were beaten up. Simultaneously, the government's increasingly strained relations with the U.S.S.R. were marked by a police raid on the soviet repatriates transit camp at Beauregard near Paris. Whatever may have been abuse of priv in the past, only three small children were found to be improperly.

While the situation in Marseilles was steadily worsenin the strikes had spread to Paris, the fall of the Ramadier go ment was provoked by the secretary general of the So party, Guy Mollet, who, with a disregard for the responsib weighing on those members of his party actually in office of other parties' views, announced that Léon Blum was rea take Ramadier's place, although the efforts to prepare a cession government had so far been fruitless. Blum on No fell 10 votes short of the 310 necessary for election t premiership (an absolute majority of all deputies is requir the constitution) because of his firmness in denouncing Gau with almost the same energy as the Communists. Robert man (M.R.P.), hitherto minister of finance, was elected pr on Nov. 22. After difficult negotiations he formed a go ment with a Gaullist sympathizer, René Mayer, as minist finance, but all other ministers drawn from those who voted for Blum.

He was immediately faced with a situation so grave tha retiring government's last act had been to call back to the ours 30,000 men prematurely released for reasons of econ At a meeting of the national committee of the C.G.T. on 14 a series of resolutions had been passed condemning the shall plan and the French government as instruments of imperialism and approving a project for what looked like was denounced by the noncommunist minority as bein month's agitation to end in a general strike at the end of cember; but the trouble broke out much earlier. Starting Marseilles, it spread to all ports, to Paris and to the coal of the north; and, by the last week in November, France on the verge of economic paralysis. The new government, cially its Socialist minister of the interior, Jules Moch, rea with vigour and for the first time found effective allies in noncommunist elements in the C.G.T. led by Léon Jouhau well as the Christian trade unions. While the Communist jority preached strikes, the minority preached negotiatio remedy the same grievances. Gradually violence grew. T were numerous acts of sabotage, culminating in a railway dent near Arras with 20 dead and 60 injured. The govern introduced two bills, one authorizing further calls-up of tr and the other greatly stiffening the penalties for use of viole threats of violence or sabotage in connection with strikes. T were passed after a week of Communist obstruction in th sembly, which was damaging to parliamentary prestige.

The strike tide turned; the railways, the post offices, a mi ity of the mines and many factories resumed work, though ports remained strike-bound and there were still railway tions occupied on Dec. 9. Violence rose as the strike rece reaching a peak in the first week of December, but follo by a lull during which negotiations were undertaken. T broke down on Dec. 8 over the refusal of the governmen grant automatic increases of wages when prices rose. M while, a total of 240,000 civilians had been called back to tary life to provide guards for railway lines, pits, factories post offices, to sweep streets and unload ships.

On the night of Dec. 9 the leaders of the C.G.T. reve the decision of the strike committee to continue the strike the grounds that it was better to preserve the trade union ganization for future struggles, thereby admitting that in m professions the will to strike was dwindling. On the same the soviet government denounced the Franco-soviet repatria agreement and broke off Franco-soviet trade negotiations. reply the French government terminated the special facili for the soviet repatriation mission which, the French claim ad abused its rights by subversive action, threatening the se-urity of France. (D. R. Gi.)

**Education.**—1945–46: Infant schools 3,473, scholars 286,000; elemen-ry schools 79,450, scholars 4,668,000; secondary scholars, boys 223,830, rls 160,329; universities 17, students 97,000.

**Finance.**—Ordinary budget 1947 (revised estimates of Sept. 1947): venue Fr. 610,520,000,000; expenditure Fr. 617,600,000,000; opera-ons of the treasury (1947): estimated revenue and expenditure bal-ced at Fr. 355,000,000,000; total revenue (actual 1946) Fr. 815,-7,000,000; total expenditure (actual 1946) Fr. 1,286,896,000,000; blic debt (Dec. 1946) Fr. 2,195,643,000,000; notes in circulation ug. 1947) Fr. 832,000,000,000; gold reserve (Aug. 1947) U.S. 44,000,000; commercial bank deposits (1947) Fr. 311,000,000,000; te of exchange: 1 franc = 0.841 U.S. cents.

**Trade and Communication.**—Foreign trade (1946): imports Fr. 234,-2,000,000; exports Fr. 101,406,000,000. Communications: railways en to traffic (1945) 25,271 mi.; passenger miles (1946) 1,620,000,000; ort ton miles (1946) 2,079,000,000; goods transported on inland wa-rways (1945) 27,580,000 short tons; motor vehicles (1946): private rs 973,000, trucks 619,500, buses 12,500. Shipping (1946, with cargo): tered 15,876,000 net tons; cleared 7,980,000 net tons; total merchant ipping more than 500 tons (1946) 1,250,000 tons gross. Radio re-iving sets (April 1947) 5,728,000.

**Industrial and Mineral Production.**—Figures for the years 1938 and 1946 e as follows:

| | (Production in 000's of short tons) 1938 | 1946 |
|---|---|---|
| al | 51,243 | 52,923 |
| nite | 1,163 | 2,300 |
| n ore | 36,521 | 17,865 |
| iron | 6,625 | 3,908 |
| el | 6,770 | 4,879 |
| rites | 162 | 183 |
| uxite | 752 | 510 |
| tton fabrics | 161 | 110 |
| tton yarn | 274 | 189 |
| ol yarn | 97 | 101 |
| yon and fibres | 25 | 34 |

**Agriculture.**—The production for 1939 and the estimated production for 47 of five crops were as follows:

| | (Production in 000's of short tons) 1939 | 1947 (est.) |
|---|---|---|
| heat | 8,920 | 4,033 |
| rley | 1,172 | 1,305 |
| ts | 5,233 | 3,734 |
| e | 868 | 466 |
| slin | 907 | 311 |

Production of wine for 1947 was estimated at 108,000,000 U.S. gal.

## ranco, Francisco

(1892– ), Spanish soldier and statesman, was born on Dec. 4 at El errol, Galicia. For his early career see *Encyclopædia Britan-ca*. In the early days of axis victories in World War II Franco firmed Spain's solidarity with Germany and Italy in the strug-e against "bolshevism." When Allied arms began to triumph, hastened to profess his neutrality and in 1945, following the llapse of Germany, he declared (May 20) that Spain was not "dictatorship." Then on Oct. 22 he issued a "bill of rights" hich included freedom of worship and expression and the right petition, provided these liberties did not run counter to the fundamentals of the state."

Franco, who survived verbal attacks made on his regime by e United Nations in 1946, set up a regency council on March 1, 1947, and on June 7 the cortes approved a bill giving him road powers for life and authority to choose his successor. The law of succession" bill was approved by more than 92% of e voters in a plebiscite held July 6, although many Spaniards ayed away from the polls. On July 18, Franco said the lebiscite proved that he had support of his countrymen and at the United Nations was not justified in attacking him. To elebrate the victory, he issued an amnesty, which did not, how-ver, include his political enemies. On Oct. 17, Franco assumed e right to create new (as well as revoke old) Spanish nobility tles. (*See* also SPAIN; UNITED NATIONS.)

## rederick IX

(1899– ), king of Denmark, son of Christian X and Alexandrine, former duchess of Iecklenburg-Schwerin. He became crown prince in 1912, on e accession of his father, and king on April 20, 1947, when is father died. On April 21 he was proclaimed king when remier Knud Kristensen called three times from the balcony of Christiansborg castle: "King Christian X has died! Long live His Majesty King Frederick IX." The new king responded with a simple pledge to try to be worthy of the same confidence the people had reposed in his father and a prayer for God's help.

Frederick lacked but an inch of his father's height of six feet, five inches. He was the first in the long succession of Danish rulers to be trained in the navy; the other 37 had all been army men. Frederick loved boats as his father loved horses, and he liked speed in any form; he had tested many a diesel train. His musicianship was also reputed to be of a high order.

In 1935 Frederick married Ingrid, daughter of the crown prince of Sweden, and they had three daughters—none of whom could succeed to the throne according to Danish law.

In October the royal pair made a brief visit to their relatives in Oslo and Stockholm and in November attended Princess Elizabeth's wedding in London. (F. D. S.)

**Freemasonry:** *see* SOCIETIES AND ASSOCIATIONS.
**Freer Gallery of Art:** *see* SMITHSONIAN INSTITUTION.
**French Colonial Empire:** *see* FRENCH OVERSEAS TERRITORIES.
**French Indo-China:** *see* FRENCH OVERSEAS TERRITORIES.

## French Literature.

French letters during 1947 presented a picture of such density and diversity that any attempt to isolate a dominating current immediately suggested its own contradictions. For there were many currents, reflecting not only France's own situation but that of the post-war world in general, and the great themes of the time—liberty and moral responsibility of the individual in the group, decadence or survival of the sacred, the significance of aesthetic creation, science and conscience, force and right—were passionately debated.

Concurrent with increasing world tension around the first of these themes, a significant feature of the year was the participation of many prominent writers in national politics. André Malraux became the leading propagandist for the De Gaullist party, Rassemblement du Peuple Français; Louis Aragon, Paul Eluard and Tristan Tzara gave active support to the Communist party; François Mauriac and Jean-Paul Sartre, albeit from opposed points of view, attacked both these ideologies, and the surrealist leader, André Breton, declared a "plague on all their houses" in favour of "permanent Revolution of men and things" based on the teachings of the "Divine Marquis" (de Sade) and Sigmund Freud. Despite these preoccupations, however, literary creation was not only abundantly manifest but, in some respects, more interesting and varied than during the preceding year.

In the poetic field, a rather boisterous bid for the place occupied between the world wars by the surrealists was made by the lettrist group, under the leadership of Isador Isou, a Sorbonne student whose 400 page manifesto entitled *Introduction à une nouvelle poésie et à une nouvelle musique* attracted some attention. The real discovery of the year, however, was undoubtedly Henri Pichette, aged 23, attached to no group, and author of the poetic drama, *Les Epiphanies*. For some critics he was a genius, the poet they had been waiting for, and his play was an astonishing renewal of the dramatic art. For others, his art was only verbiage and mystification, representative of a false advance-guard, puerile and immature. In any case, even his opponents recognized an abundant, surging gift for verbal creation. What was interesting in the work of both Isou and Pichette, however, was their simultaneous attempt to modify their linguistic medium by an attack on the individual word. In this respect they differed from their distinguished immediate elder, René Char who, although supreme master of condensing emotion and thought into the simplest words, was content to leave both word and syntax untouched. Char's latest volume, *Le Poème Pulverisé,* received marked critical attention. Other poets who published during the year were Jean Cayrol, Aimé Cesaire (deputy from Martinique), Malcolm de Chazal (a newly discovered, highly lyrical poet from the Ile Maurice), Paul Eluard, Léon-Paul Fargue, Benjamin Péret, St.-J. Perse, Tristan Tzara.

Although critics agreed that the large number of novels published were for the most part of high quality, Albert Camus's *La Peste* (Prix des Critiques) was one of the few among them that aroused general, thoughtful discussion. The choice of André Gide for the Nobel literary prize was almost universally applauded. (*See* also LITERARY PRIZES.)

In the theatre, new plays were presented by Jean Anouilh, François Mauriac, Jules Romains, Armand Salacrou, Madame Simone and others less well known. Charles Péguy's *Jeanne d'Arc* was given in its entirety for the first time, under the supervision of the son of the poet. Other published plays included *Abélard et Heloïse* by Roger Vaillant; *Le Maître de Santiago* by Henry de Montherlant and *Théâtre Complet* by Roger Vitrac, former surrealist.

In the domain of philosophical thought, the concept of "existence" continued to offer one of the main themes of discussion: Emmanuel Mounier's *Introduction aux Existentialismes* and Jean Wahl's *Petite Histoire de l'Existentialisme* constituted accessible surveys for the lay public. Other volumes on the same subject were: *L'Existentialisme,* by Henri Lefebvre (who claimed that the young revolutionary philosophers of the 1920s were already existentialist); *Court traité de l'existence et de l'existant,* by Jacques Maritain; *Dialectique existentielle du divin et de l'humain,* by Nicolas Berdiaeff and *Existentialisme Chrétien: Gabriel Marcel,* by Etienne Gilson. *Karl Jaspers et la Philosophie de l'Existence,* by Michel Dufresne and Paul Ricoeur, included the first French translations from the works of this distinguished German philosopher. There also appeared a volume on *Descartes* by Jean-Paul Sartre; *De Bergson à Thomas d'Aquin* and *La Personne et le Bien commun,* by Jacques Maritain; *Introduction à la lecture de Hegel,* by Alexander Kojeve and under the title: *Principes élementaires de Philosophie,* a volume of posthumous notes by the Marxist philosopher, Georges Politzer. Gaston Bachelard announced that his study of "l'imagination matérielle" which already included volumes on fire, water and air, would be followed by a volume on earth, representing the element of weight and the symbol of nourishment. (*See* also PHILOSOPHY.)

Important essays of the year included Georges Bernanos' *La France contre les Robots,* in which he urged the French to reject over-industrialization; *Qu'est-ce que la littérature?* by Jean-Paul Sartre, a brilliant if often prejudiced study of the writer's place in society; *Méthode de Méditation,* by Georges Bataille; *Van Gogh ou le suicide de la société,* by Antonin Artaud; *Lettres sur la Bombe Atomique,* by Denis de Rougemont. Jean Paulhan, Maurice Blanchot and Pierre Klossowski discussed the works of the Marquis de Sade, and much interest was shown in such 19th century writers as Stendahl (Henri-Marie Beyle), Jean Rimbaud and Gerard de Nerval. Mention should be made too of such works as Charles Pichon's important *Histoire du Vatican,* Cardinal Suhard's *Essor ou Déclin de l'Eglise,* Jean-Paul Sartre's *Réflexions sur la question juive,* Pastor Marc Boegner's *Le Problème de l'Unité Chrétienne* and Louis de Broglie's *Physique et Microphysique.*

A number of important works on artistic subjects were published, including *Goya,* by André Malraux, *Psychologie de l'Art* by the same author; *André Masson et son Univers,* by Michel Leiris and Georges Limbour; *Schoenberg et son Ecole,* by the leader of the atonalist composers, René Leibowitz; *Juan* by Daniel Kahnweiler; *L'Enseigne de Gersaint,* a study of teau, by Louis Aragon.

More than 20 literary reviews, together with a half-c weekly and daily newspapers, continued to represent a medium for the exchange of ideas as well as an essential cle for the introduction of new talent. Special mention sh be made of *Temps Modernes, Fontaine, Critique, Esprit Nef, Arche, Psyché, Cahiers du Sud, Dieu Vivant, Cahiers Pléiade, Saisons, Poésie '47; Les Nouvelles Littéraires, Les tres Françaises, Le Figaro Littéraire, Gazette des Let Carrefour, Arts, Combat.*

In conclusion, it should be noted that Marcel Pagnol, Claudel and Etienne Gilson were elected to the French A emy. (M. Jor

## French Overseas Territories.

Under this headin grouped the over *départements,* the colonies (*territoires d'outremer*), the pr torates and the mandated territories, the total area of w (excluding Syria and Lebanon) is 4,605,633 sq.mi. and the population (est. Dec. 1939) 67,591,000. Certain essentia formation on the composing parts of the French colonial em —or *France d'outremer,* as it is officially called—is given in table.

**History.**—The new French constitution provided that French union consisted of the French republic (that is to metropolitan France and the overseas departments and t tories) and the associated territories and states. These la were certainly Morocco and Tunis, and perhaps Indo-Ch whose status was still indeterminate. The overseas departm were Algeria (three departments), Martinique, Guadelo French Guiana and Réunion (but not Corsica). In additio representation by 75 deputies in the assembly (13.7%) an in the Council of the Republic (32.5%), the constitution vided for the creation of a high council and an assembly of French union with mainly advisory powers. The council wa consist of nominees of the French government and of the a ciated states, the assembly of delegates elected one-half by French parliament and one-half by the territorial assem overseas. This federal organ was called for Dec. 10, 1947. legislation for setting up territorial assemblies had been pa for Algeria, West Africa and Equatorial Africa. The sulta Morocco refused to change the protectorate treaty for a cl bond with France, claiming instead restoration of Moroc sovereignty and a treaty of alliance. A similar situation a in Tunisia. In Indo-China the kings of Cambodia and of I were ready to enter the union, but the French plan was they should do so as part of an Indo-Chinese federation. principal member of this would be Viêt-Nam, whose gov ment France no longer recognized (although it still had agency in Paris). Institutions had also been prepared Madagascar.

**Indo-China.**—In Indo-China long negotiations as to meaning of the armistice agreement of March 6, 1946, wh recognized Viêt-Nam as "a free state having its government, parliament, its army and its finances within the framework the Indo-Chinese federation and the French union," were in rupted on Dec. 19, 1946, by a surprise attack, evidently ca fully prepared, by the Viêt-Nam troops on the French troo In the course of the spring and early summer of 1947 the Fre forces gained control of the principal towns and internal co munications of Viêt-Nam and during the autumn launched erations to cut communications with China and Siam. Nego tions were attempted, but broke down over the refusal of French to recognize the Viêt-Nam government as the *de f* vereign. They were ready to recognize Viêt-Nam as including ochin-China, but their views of the rights of the Viêt-Nam ere if anything more restricting than in 1946, since the con- itution laid it down that Paris was responsible for the co- dination of national defense and the policy necessary to assure , for criminal legislation and the political and administrative ganization of overseas territories. The French forces in Indo- hina were about 100,000.

**North Africa.**—In Algeria the new constitution gave equal presentation to the first electoral college, representing the 000,000 Europeans, and to the second, representing 8,000,000 Ioslems. The first included a certain number of Moslems on rounds of either education or service, and it was at one time oped that by gradual extension of this element a point would reached when the two colleges would be equal. The instinct self-defense of the European population, and the agitation of ie more extreme Moslem elements led by Messali Haj, impeded iis development.

In Morocco the sultan was the acknowledged leader of the itionalists. During a visit to Tangier (the first after the regime the protectorate was established) at the beginning of April ie sultan ostentatiously left out of his speech the only sentence eferring to France. The French government thereupon recalled ie civilian resident-general Eirik Labonne and sent out Gen. lphonse Juin in his place. An administrative reform substan- ally modernized the higher Moroccan bureaucracy so as to give ie sultan a better chance of forming and expressing an opinion n the measures put before him by the resident-general's staff, ut in other respects political change in Morocco was slight.

In Tunisia constitutional progress was greater, and an attempt initiate parliamentary government was made; but large parts f the administration were still in French hands and the princi- al nationalist party, the *Destour,* declined to co-operate. Politi- al censorship was abolished in Tunisia.

In North Africa there were two serious incidents, a strike in outhern Tunisia involving some bloodshed on Aug. 5 and 6 (73 asualties); and a nonpolitical outbreak in Casablanca by enegalese troops, involving about 60 casualties.

**Réunion and Madagascar.**—Abd-el-Krim, the former Riff eader, was brought on board a ship without escort from Réunion o as to exchange his exile there for exile in France. He left the hip (after some persuasion) while in Egypt and joined the pan- rab nationalists in Cairo, where Morocco was represented by he poet Allal el Fassi.

A rising broke out in the east of Madagascar which was still eing suppressed at the end of the year. It left great bitterness mong both Malagasy and Europeans. The three deputies and hree councillors of the republic representing the autochthonous opulation of the island were all under arrest awaiting trial on harges of organizing the insurrection. It should be mentioned hat they were elected by about 94,000 voters out of a popula- ion of 4,174,000. The colonial electorates appeared to be locally etermined. A total of 1,898,200 went to the polls, but except the electoral colleges reserved to Europeans less than half f the registered electors had so far used their votes. (*See* also ACIFIC ISLANDS, FRENCH.) (D. R. GI.)

**French Possessions in America.**—The four colonies of rance in the western hemisphere fall into three regional groups: 1) the islands of St. Pierre and Miquelon at the mouth of the ulf of St. Lawrence; each has certain dependent islets; (2) the rench West Indies, consisting of the two colonies of Martinique nd Guadeloupe, the latter with five small island dependencies; 3) French Guiana, a mainland colony in the northeastern part f South America, including French Guiana proper, a narrow oastal strip and the hinterland dependency of Inini.

*History.*—St. Pierre and Miquelon continued an uneventful readjustment to postwar conditions in 1947 and placed chief emphasis upon the further development of the fishing industry and processing of fish products, in which systematic developments had begun in 1946. The Caribbean colonies continued to co-operate closely with the expanded and increasingly active Caribbean commission, representing Middle American possessions of Great Britain, the United States, France and the Netherlands. Work continued in 1947 on the liquidation of the Devil's Island penal colony, off the French Guiana coast. By August 2,386 convicts had already been returned to their homes in France and North Africa, 800 more had completed their penal terms and were awaiting shipment and 2,718 were still serving sentence.

*Education and Religion.*—Schools in both Martinique and Guadeloupe, the colonies of largest population, are patterned after the French system. Attendance in Martinique represents about one-seventh of the entire population. Fort-de-France has a school of law and a technical training school. Guadeloupe has 113 free elementary schools attended by 25,691 pupils, and 3 secondary schools with 1,832 pupils; private schools enroll 2,500. The predominant religion in all four colonies is Roman Catholi-

*French Overseas Territories*

*1947*

| Country and Area sq. mi. (approx.) | Population (000's omitted) | Capital, Status, Governors, Premiers, etc. |
|---|---|---|
| *AFRICA* | | |
| French Equatorial Africa, 959,983 | 3,423* | Brazzaville, *Governor and High Commissioner* (post vacant after death of Charles Luizet, Sept. 4, 1947). |
| Gabon, 91,405 | 410 | Libreville, colony, *Governor:* Roland Pré. |
| Middle Congo, 175,630 | 746 | Brazzaville, colony, *Governor:* C. Laigret. |
| Ubangui-Shari, 238,008 | 834 | Bangui, colony, *Governor:* Jean Chalvet. |
| Chad, 454,940 | 1,433 | Fort Lamy, colony, *Governor:* A. Léger. |
| Cameroun, 169,436 | 2,816† | Yaoundé, trustee territory, *High Commissioner:* René Hoffherr. |
| Algeria, 851,078 | 7,600‡ | Algiers, colony under the jurisdiction of the minister of the interior, *Governor-General:* Yves Chataigneau. |
| Morocco, 154,000 | 8,000§ | Rabat, protectorate under the minister of foreign affairs, *Sultan:* Sidi Mohammed; *Resident-General:* Gen. Alphonse Juin. |
| Tunisia, 60,209 | 3,463‖ | Tunis, protectorate under the minister of foreign affairs, *Bey:* Sidi Mohammed al Amin; *Resident-General:* Gen. Charles Mast. |
| French West Africa, 1,816,000 | 15,943¶ | Dakar, *High Commissioner:* René Barthès. |
| Senegal, 77,749 | 1,727 | St. Louis, colony, *Acting Governor:* Laurent Wiltord. |
| Mauritania, 433,532 | 377 | St. Louis, colony, *Governor:* Lucien Geay. |
| French Guinea, 97,247 | 2,164 | Conakry, colony, *Governor:* Eduard Terrac. |
| Ivory Coast, 184,255 | 4,124 | Abidjan, colony, *Acting Governor:* Oswald Durand. |
| Dahomey, 43,282 | 1,436 | Porto Novo, colony, *Acting Governor:* Robert Legendre. |
| French Sudan, 480,417 | 3,875 | Koulouba (Bamako), colony, *Governor:* Jean Louveau. |
| Niger, 499,555 | 2,058 | Niamey, colony, *Governor:* J. Gosselin. |
| Dakar and dependencies, 62 | 182 | Dakar, constituency incorporated with Senegal. |
| Togoland, approx. 22,000 | 919 | Lomé, trustee territory, *High Commissioner:* Jean Noutary. |
| French Somaliland 8,376 | 40♀ | Jibuti, colony, *Governor:* Paul Siriex. |
| Madagascar and dependencies, 229,438 | 4,175♂ | Antananarivo, colony, *Governor-General:* Marcel de Coppet. |
| Réunion, 70 | 221¶ | St. Denis, colony, *Governor:* J. Capagorri |
| *AMERICA* | | |
| St. Pierre and Miquelon, 93 | 4† | St. Pierre, colony, *Administrator:* René Marchand. |
| French Guiana, including Inini, 34, 740 | 37□ | Cayenne, colony, *Governor:* Jean Pézet. |
| Guadeloupe and dependencies, 686 | 310‡ | Basse-Terre, colony, *Governor:* Ernest de Nattes. |
| Martinique, 427 | 270° | Fort-de-France, colony, *Governor:* G. Orselli. |
| *ASIA* | | |
| French India, 197 | 323§ | Pondicherry, colony, *Acting Governor:* Charles-François Barou. |
| French Indo-China, 285, 794 | 23,030* | Saigon, *High Commissioner:* Emil Bollaert. |
| Annam, 56,974 | 5,656 | Hué, protectorate, *Commissioner:* Gen. de Brigade H. Lebris. |
| Cambodia, 69,886 | 3,046 | Pnom-Penh, protectorate, *King;* Norodom Sihanouk. |
| Cochin-China, 24,974 | 4,616 | Saigon, colony, *Commissioner:* R. Dufour. |
| Laos, 89,320 | 1,012 | Vientiane, colony, *Commissioner:* J. de Raymond. |
| Tongking, 44,660 | 8,700 | Hanoi, protectorate, *Commissioner:* J. Sainteny. |
| *OCEANIA* | | |
| French territories in the Pacific | | *Administrator in Chief:* J. C. Hanmant. |
| New Caledonia and dependencies, 7,654 | 60° | Nouméa, colony, *Governor:* Jacques Tallec. |
| New Hebrides, 4,633 | 43§ | Vila, Franco-British condominium, *High Commissioner:* Jacques Tallec. |
| Pacific Islands, including Society Islands, Tuamotu Islands, Tubuai archipelagos, etc., 1,545 | 51♂ | Papeete, colony, *Governor:* Jacques Tallec. |

*Pop. 1936 census.
†Pop. est. 1945.
‡Pop. est. 1939.
§Pop. est. 1941.
‖Pop. est. 1946.
¶Pop. est. 1943.
♀Pop. 1944 census.
♂Pop. 1941 census.
□Pop. est. 1938.
°Pop. est. 1944.

cism.

*Trade and Communications.*—Exports from St. Pierre and Miquelon in the first six months of 1947 were valued at 66,700,000 francs, and imports in the same period at 49,300,000 francs. For all of 1946, exports were 59,600,000 francs; imports 81,900,000 francs. Chief exports of Martinique are sugar and rum; sugar exports in 1946 were 165,194 metric quintals (1945: 482,360 quintals). Exports from Guadeloupe in the first six months of 1947 were valued at 2,331,400,000 francs, and imports during the same period at 1,326,700,000 francs. For all of 1946, exports were 1,495,200,000 francs, and imports 1,115,500,000 francs. Guadeloupe's principal exports are sugar (81,380 quintals in first six months of 1947), rum and bananas. Exports from French Guiana include gold, precious stones, wood and rosewood essence; imports include foodstuffs and clothing, machinery, fuels. Martinique and Guadeloupe have, respectively, 750 mi. and 800 mi. of roads but no railways. French Guiana has a few hundred miles of roads near Cayenne and 62 mi. of narrow-gauge railway.

*Production.*—Processing of fish products constitutes the only important industry in St. Pierre and Miquelon. Sugar production in Martinique and Guadeloupe, respectively, in 1945–46 totalled 23,530 and 45,082 metric tons (1944–45: 11,062 and 28,439 tons); estimated production for 1946–47 was, respectively, 22,000 tons and 35,000 tons.

BIBLIOGRAPHY.—*West Indies Year Book, 1946;* Paul Blanchard, *Democracy and Empire in the Caribbean* (1947); *Foreign Commerce Weekly* (Washington); Thomas S. Simey, *Welfare and Planning in the West Indies* (1947). (R. H. FN.)

**French Pacific Islands:** *see* PACIFIC ISLANDS, FRENCH.

**French Possessions in Africa:** *see* FRENCH OVERSEAS TERRITORIES.

**Frequency Modulation:** *see* FEDERAL COMMUNICATIONS COMMISSION; RADIO.

## Friends, Religious Society of.

Although no formal celebration was held, 1947 marked the 300th anniversary of the spiritual experience which led George Fox to found the Society of Friends. In 1947 the society was composed of 53 yearly meetings and annual conference groups with an approximate total membership of 164,300. About 116,600 members were in the United States and Canada, and about 22,700 in the British Isles. During the year the Switzerland general meeting was given the status of a yearly meeting, and the constituent meetings of the Pacific Coast association, located in Canada, the U.S.A. and Hawaii, organized the Pacific yearly meeting.

Partial return to normal peacetime conditions in the Society of Friends was reflected in the increasing number of Friends able to travel about the world in the ministry and in the holding of three important international Quaker conferences. At Easter time, the first conference of European Friends after 1939 was held at Ommen, the Netherlands; approximately 70 Friends from 12 countries were present. The message from this conference emphasized the fact that "the spiritual need of the world is greater even than the physical," and reviewed frankly the spiritual state of the European meetings in these words: "Our own hearts have been hardened and our characters warped through these (wartime) years of violence and dishonesty and panic selfishness; but to some of us it has been given to find through suffering a new sense of fellowship and new opportunity for serving our fellows." In July, more than 450 young Friends from all parts of the world met at Earlham college, Richmond, Ind., to discuss the theme of "Christian Dedication in Spirit and Work." In September, the first postwar meeting of the Friends World Committee for Consultation was held at Richmond, Ind., with 93 Friends from 18 countries in attendance. Plans were made for a World Conference of Friends to be held in 1952 and arrangements were made for representation in the United Nations Educational, Scientific and Cultural organization (U.N.E.S.C.O.) and the United Nations Economic and Social council. Thus the sense of a world Quaker community began to be recreated.

As the United Nations Relief and Rehabilitation administration (U.N.R.R.A.) ceased its operations, the burden upon private relief agencies such as those operated by Quakers became correspondingly greater. Friends Relief Service, the British
Quaker relief organization, had 180 workers in Austria, Fr
Germany, Greece and Poland; plans were made to close
operations or to hand them over to other groups in 1948.
needs of displaced persons in Europe and of refugees
prisoners of war in England also claimed the attentio
Friends Relief Service. The Friends Service council ha
workers in India, China, Madagascar and various Euro
capitals. Young British Friends carried on rehabilitation
in France and Germany under the Friends Ambulance
Post-War Service. In India and China, British, Canadian,
and New Zealand Friends worked with native personnel u
the Friends Service unit. The work in India centred in Be
and took the form chiefly of village reconstruction and me
relief. Medical centres and mobile units were maintaine
Honan Province, China, and in Yenan, capital of comm
China.

The American Friends Service committee, with the la
budget in its 30-year history, carried on relief and reconst
tion operations in 11 countries: Finland, Poland, France,
many, Austria, Hungary, Italy, Spain, India, China and Ja
There were several new developments in the work of this
mittee. Under the Quaker International Voluntary Service
gram many American and European young people volunte
their services in the rebuilding of war-shattered communiti
Europe; work camps for this purpose were conducted in
land, Poland and France. The program of International Se
Seminars, interrupted by World War II, was resumed; m
than 250 students from all parts of the world came togethe
seven seminars scattered over the United States to study
problems of world peace under the leadership of a distingui
faculty. At the invitation of the U.S. state department
committee undertook responsibility for the orientation prog
on two ships carrying exchange students between Europe
the United States. The social-industrial section, in additio
operating its work camps, institutional service units and
relations program, turned its attention to the field of econ
relations in an effort to see what special contribution Fri
might make in this difficult area. The peace section, while
tinuing its Institutes of International Relations, its peace c
vans and its work camps in Mexico, devoted much energy
mobilizing public opposition to peacetime conscription.

On Dec. 10 the Nobel peace prize was awarded jointly to
American Friends Service committee in Philadelphia and
Friends Service council in London in recognition of the con
bution of the Society of Friends to world peace. (*See*
CHURCH MEMBERSHIP.) (F. Ts.

## Fruit.

World fruit production was about average in 1
apples being estimated at 411,000,000 bu., of wh
North America provided 132,000,000 bu. Great Britain ha
record crop, twice the average size. Germany, Austria, Belg
and the Netherlands had better-than-average crops in spite
the dry weather. The Italian crop was at about the pre-W
War II level. U.S. production failed to reach the record tota
1946 by 4% but was 20% above average. Deciduous fruits,
less than in 1946, were also 12% above average.

**Apples.**—The U.S. crop in 1947 was estimated at 112,503,
bu., 6% smaller than the 1946 crop of 119,410,000 bu.
about the size of the average for 1936–45. The table on p.
shows production in 24 states for 1947, 1946 and the 10-yr. a
age, 1936–45. The western states produced almost half of
total crop, Washington alone yielding 30% of the commer
output. The differences in production by areas reflected
differences among varieties. Baldwins yielded two and one-
times the 1946 crop, Gravensteins one-third more, Greenin
Yellow Newton and Spy one-tenth more while other varie

Table I.—*U.S. Apple Production in Leading States 1947, 1946 and 10-Yr. Average 1936-45*

(In thousands of bushels)

| State | 1947 | 1946 | 10-Yr. Average | State | 1947 | 1946 | 10-Yr. Average |
|---|---|---|---|---|---|---|---|
| ashington | 33,480 | 32,710 | 26,955 | New Jersey | 1,935 | 297 | 2,887 |
| w York | 15,045 | 15,116 | 14,700 | Missouri | 1,630 | 1,230 | 1,263 |
| lifornia | 10,010 | 7,648 | 7,814 | Colorado | 1,568 | 1,100 | 1,598 |
| nnsylvania | 6,612 | 8,568 | 7,853 | Indiana | 1,489 | 1,174 | 1,399 |
| chigan | 6,600 | 7,560 | 7,132 | Connecticut | 1,273 | 1,111 | 1,314 |
| ginia | 5,010 | 12,975 | 10,196 | Maryland | 1,072 | 1,872 | 1,727 |
| nois | 4,187 | 3,573 | 2,908 | Maine | 930 | 767 | 643 |
| io | 3,038 | 2,350 | 4,379 | New Hampshire | 838 | 465 | 730 |
| egon | 2,864 | 2,970 | 2,988 | Vermont | 799 | 424 | 601 |
| ssachusetts | 2,864 | 2,000 | 2,495 | Wisconsin | 799 | 996 | 647 |
| est Virginia | 2,820 | 5,075 | 4,125 | North Carolina | 768 | 1,248 | 1,011 |
| aho | 2,275 | 1,233 | 2,447 | Arkansas | 756 | 677 | 269 |

Table II.—*U.S. Grape Production in Leading States 1947, 1946 and 10-Yr. Average 1936-45*

(In tons)

| State | 1947 | 1946 | 10-Yr. Average | State | 1947 | 1946 | 10-Yr. Average |
|---|---|---|---|---|---|---|---|
| w York | 60,000 | 64,500 | 53,350 | Virginia | 1,800 | 2,200 | 1,810 |
| chigan | 45,900 | 31,000 | 34,180 | Alabama | 1,800 | 1,700 | 1,440 |
| ashington | 21,400 | 19,400 | 11,810 | Oklahoma | 1,600 | 1,700 | 2,210 |
| nnsylvania | 17,500 | 19,500 | 15,830 | Oregon | 1,500 | 1,600 | 1,920 |
| io | 15,400 | 12,500 | 18,360 | New Mexico | 1,400 | 1,300 | 1,190 |
| kansas | 11,600 | 10,800 | 8,170 | Kentucky | 1,400 | 1,700 | 1,850 |
| rth Carolina | 5,600 | 5,100 | 5,480 | Texas | 1,300 | 1,400 | 1,890 |
| ssouri | 3,800 | 3,100 | 5,800 | Arizona | 1,200 | 1,000 | 950 |
| nois | 3,200 | 2,300 | 3,810 | Utah | 1,200 | 800 | 880 |
| va | 2,600 | 2,700 | 3,020 | South Carolina | 1,100 | 1,100 | 1,210 |
| orgia | 2,600 | 2,200 | 1,820 | West Virginia | 900 | 1,800 | 300 |
| nnessee | 2,400 | 2,100 | 2,250 | Nebraska | 700 | 600 | 1,370 |
| liana | 2,400 | 1,900 | 2,610 | Delaware | 600 | 800 | 1,155 |
| w Jersey | 1,900 | 2,400 | 2,270 | Colorado | 600 | 150 | 510 |
| nsas | 1,900 | 1,600 | 2,290 | Wisconsin | 500 | 600 | 480 |

| California | 1947 | 1946 | 10 yr. Average |
|---|---|---|---|
| Wine Varieties | 536,000 | 684,000 | 553,900 |
| Table Varieties | 605,000 | 630,000 | 451,600 |
| Raisin Varieties | 1,735,000 | 1,604,000 | 1,379,500 |
| Total | 2,876,000 | 2,918,000 | 2,385,000 |

howed no increase or a loss. The Delicious variety continued grow in popularity as a commercial apple and constituted 1% of the total commercial crop in 1947. Winter varieties nounted to about four-fifths of the total because of better orage quality. The summer variety Gravenstein produced in alifornia, made up about half of the total of summer types.

Shipments began early and two-thirds were shipped from Vashington before October. The eastern crop was delayed in aturing. Imports from Canada amounted to more than 1,200 arloads, but this amounted to only about 2% of the United tates production. Exports were about 5,200,000 bu. in the ear 1946–47 ending July 1 and were expected to be smaller in 947–48. Storage stocks of apples increased in the fall of 1947 bove the 10,000,000-bu. level, about the same as in 1946.

Prices of apples in general were about the same as in 1946 ut below the average for the very small 1945 crop. The average rice to growers was $2.65 per bu. in 1947, compared with an verage of $2.46 for 1946. Prices ranged higher in New England in the east and in Washington and Idaho in the west.

**Apricots.**—The U.S. crop was estimated at 199,000 tons, ompared with 338,700 tons harvested in 1946 and a ten-year verage of 191,500 tons. In the three states growing nearly all is fruit, California produced 166,000 tons, Washington 28,000 ons, and Utah 5,000 tons. World production of dried apricots as estimated at 19,800 tons, of which 15,000 tons were proiced in the United States. Spain produced 2,100 tons and ustralia 1,300 tons.

**Avocados.**—U.S. production was estimated at 16,300 tons 1947, compared with 16,000 tons in 1946 and an average of 5,773 tons for 1936–45. California produced 14,000 tons and lorida 2,300 tons.

**Bananas.**—The supply from Central America became more oundant in 1947 as shipping improved, amounting to nearly ,000,000 bunches, somewhat less than prewar supplies.

**Cherries.**—The U.S. commercial crop grown in 12 states in 947 was estimated at 180,830 tons, 21% below the big crop of 229,620 tons harvested in 1946 but above the average of 169,157 tons for 1936–45. Sour cherries amounted to 98,810 tons and sweet varieties 82,020 tons. Michigan produced 49,500 tons of the sour cherries and New York 18,200 tons. Of the sweet varieties, Washington led with a crop of 29,200 tons; California produced 28,000 tons and Oregon 10,000 tons.

**Cranberries.**—The U.S. crop for 1947 was estimated at 784,700 bbl., about 13% below the big 857,000-bbl. crop of 1946, but 16% above the average of 638,830 bbl. during 1936–45. Massachusetts produced an estimated 485,000 bbl., Wisconsin 155,000 bbl., New Jersey 81,000 bbl., Washington 48,000 bbl. and Oregon 15,700 bbl.

**Dates.**—The U.S. date crop, all grown in California except for a very small amount in Arizona, was 10,250 tons, 41% below the 1946 crop of 17,400 tons, but above the average of 6,422 tons for 1936–45.

**Figs.**—California figs for drying were estimated at 33,000 tons in 1947, compared with 36,600 tons in 1946 and a ten-year (1936–45) average of 30,440 tons. California figs for fresh use and canning were estimated at 14,000 tons. Texas figs, mostly used for preserving, returned only 760 tons.

**Grapefruit.**—The 1947 U.S. crop was estimated at 62,270,000 boxes compared with a crop of 59,520,000 boxes in 1946 and an average of 44,593,000 boxes (1936–45). Low prices in the fall

Table III.—*U.S. Grapefruit Production by States 1947, 1946 and 10-Yr. Average 1936-45*

(In thousands of boxes)

| State | 1947 | 1946 | 10-Yr. Average | State | 1947 | 1946 | 10-Yr. Average |
|---|---|---|---|---|---|---|---|
| **Florida** | | | | **Arizona** | 4,100 | 4,100 | 3,031 |
| Seedless | 14,000 | 14,000 | 8,840 | **California** | | | |
| Other | 17,000 | 15,000 | 13,990 | Desert | 1,200 | 1,220 | 1,115 |
| **Texas** | 24,000 | 23,300 | 16,121 | Other | 1,970 | 1,900 | 1,496 |

EDIBLE GRAPEFRUIT left to rot along the Salt river near Phoenix, Ariz., where growers dumped tons of the citrus fruit which failed to meet retail requirements in 1947

caused delayed marketing.

**Grapes.**—The 1947 crop in the United States was estimated at 3,093,800 tons, 3% less than the record 1946 crop of 3,119,500 tons but 20% above the average (1936–45). Prices were much lower in 1947, less than half the 1946 average of $93.30 per ton.

**Lemons.**—The 1947 crop of California was estimated at 14,100,000 boxes, compared with 13,760,000 boxes picked in 1946 and an average of 12,186,000 boxes during 1936–45.

**Limes.**—The 1947 crop, all in Florida, was put at 190,000 boxes, compared with 170,000 boxes harvested in 1946 and an average of 135,000 boxes for 1936–45.

**Olives.**—The U.S. commercial olive crop, all grown in California, was estimated at 40,000 tons in 1947, compared with 48,000 tons in 1946 and an average of 43,300 tons for the period 1936–45.

**Oranges.**—The 1947 crop of the United States was estimated at 108,260,000 boxes or about 5% less than the record crop of 1946 but 30% above the average of the ten-year period 1936–45.

Table IV.—*U.S. Orange Production by States 1947, 1946 and 10-Yr. Average 1936-45*

(In thousands of boxes*)

| State | 1947 | 1946 | 10-Yr. Average |
|---|---|---|---|
| California | | | |
| Navels | 19,400 | 19,670 | 18,203 |
| Valencias | 31,200 | 34,000 | 28,329 |
| Florida | | | |
| Early and midseason | 27,500 | 30,500 | 18,125 |
| Valencias | 23,000 | 23,200 | 14,905 |
| Tangerines | 4,300 | 4,700 | 3,190 |
| Texas | | | |
| Early and midseason | 3,480 | 3,150 | 1,722 |
| Valencias | 2,320 | 1,850 | 1,220 |
| Arizona | | | |
| Navels | 480 | 600 | 327 |
| Valencias | 580 | 600 | 371 |
| Louisiana | 300 | 410 | 288 |

*Boxes hold 77 lb. in California and Arizona; 90 lb. in other states.

**Tangerines.**—The 1947 Florida crop of tangerines was estimated at 4,300,000 boxes, compared with 4,700,000 boxes shipped in 1946 and an average of 3,190,000 boxes during 1936–45. The crop was of unusually high quality.

**Peaches.**—The crop of U.S. peaches in 1947 was estimated at 82,981,000 bu. compared with the record crop of 1946 of 86,643,000 bu. and the ten-year (1936–45) average of 62,936,000 bu.

The California clingstone crop was put at 21,460,000 bu.; freestone amounted to 11,959,000 bu.

Table V.—*U.S. Peach Production in Leading States 1947, 1946 and 10-Yr. Average 1936-45*

(In thousands of bushels)

| State | 1947 | 1946 | 10-Yr. Average | State | 1947 | 1946 | 10-Yr. Average |
|---|---|---|---|---|---|---|---|
| California | 33,419 | 37,086 | 25,877 | Pennsylvania | 1,920 | 2,226 | 1,809 |
| South Carolina | 6,630 | 5,994 | 2,695 | Virginia | 1,800 | 2,640 | 1,282 |
| Georgia | 5,810 | 5,628 | 5,033 | Texas | 1,696 | 1,856 | 1,628 |
| Michigan | 4,526 | 5,100 | 2,993 | New Jersey | 1,617 | 1,776 | 1,276 |
| North Carolina | 2,905 | 3,160 | 1,971 | Alabama | 1,525 | 1,250 | 1,435 |
| Washington | 2,817 | 2,700 | 1,997 | New York | 1,440 | 1,682 | 1,332 |
| Illinois | 2,363 | 1,529 | 1,376 | Missouri | 1,288 | 1,098 | 575 |
| Arkansas | 2,220 | 2,479 | 2,040 | Tennessee | 1,209 | 540 | 1,596 |
| Colorado | 2,106 | 1,985 | 1,752 | Utah | 933 | 700 | 870 |

**Plums and Prunes.**—The U.S. crop of commercial plums, almost all grown in California and Michigan, was estimated at 77,300 tons fresh basis in 1947, compared with 106,000 tons harvested in 1946. Prune production in California was mated for 1947 at 201,000 tons dried basis, 6% less than Idaho's crop made a new record of 35,500 tons, nearly d the ten-year average.

Table VI.—*U.S. Production of Prunes by States 1947, 1946 and 10-Yr. Average 1936-45*

(In tons, fresh basis)

| State | 1947 | 1946 | 10-Yr. Average | State | 1947 | 1946 | 10-Yr. Average |
|---|---|---|---|---|---|---|---|
| Oregon | | | | Washington | | | |
| Eastern | 18,900 | 18,100 | 14,210 | Eastern | 19,100 | 19,800 | 15,200 |
| Western | 15,000 | 83,000 | 73,770 | Western | 4,000 | 9,300 | 8,940 |
| | | | | Idaho | 35,500 | 22,400 | 18,460 |

Table VII.—*Quantities of Prunes Used, Fresh, Canned and Drie in the U.S. 1947, 1946 and 10-Yr. Average 1936-45*

(In tons, fresh basis)

| State | 1947 | 1946 |
|---|---|---|
| Used fresh | | |
| Idaho | 31,700 | 20,800 |
| Oregon | 13,000 | 18,100 |
| Washington | 12,200 | 10,600 |
| Canned | | |
| Oregon | 13,600 | 42,200 |
| Washington | 8,400 | 14,890 |
| Idaho | 3,000 | 800 |
| Dried (dry basis) | | |
| California | 200,800 | 212,800 |
| Oregon | 400 | 8,200 |
| Washington | 100 | 250 |
| Frozen | | |
| Oregon | 900 | 5,700 |
| Washington | 100 | 510 |
| Farm household use | 5,100 | 6,300 |

**Pears.**—The U.S. crop was estimated at a new high reco 35,350,000 bu. in 1947, 2% more than the 1946 record of 447,000 bu. and 19% above the 29,510,000 bu. ten-year (1 45) average. The Bartlett crop of California was larger in 1946 and only slightly below its record made in 1945. Washington Bartlett crop was also larger than average. P averaged about $2.50 per bu., about the same as in 1946.

Table VIII.—*U.S. Pear Production in Leading States 1947, 194 and 10-Yr. Average 1936-45*

(In thousands of bushels)

| State | 1947 | 1946 | 10-Yr. Average | State | 1947 | 1946 |
|---|---|---|---|---|---|---|
| California | | | | New York | 960 | 693 |
| Bartlett | 12,209 | 11,168 | 9,421 | Michigan | 564 | 696 |
| Other | 2,042 | 1,750 | 1,329 | Texas | 402 | 407 |
| Washington | | | | Georgia | 385 | 396 |
| Bartlett | 6,156 | 6,750 | 4,905 | Mississippi | 350 | 347 |
| Other | 2,149 | 2,140 | 1,876 | North Carolina | 298 | 299 |
| Oregon | | | | Alabama | 288 | 343 |
| Bartlett | 1,975 | 2,335 | 1,700 | Virginia | 280 | 353 |
| Other | 3,749 | 3,785 | 2,374 | Pennsylvania | 262 | 345 |

**Pineapples.**—The Florida pineapple crop was estimate 4,000 crates of 70 lb. each, compared with 20,000 crates duced in 1946 and an average of 11,500 crates in 1936–45.

**Strawberries.**—The U.S. crop of strawberries was 8,421 crates in 1947, compared with 6,933,000 crates grown in and a ten-year average of 9,508,000 crates. (*See* also A CULTURE.)

(J. C. Ms

**FSA:** *see* FEDERAL SECURITY AGENCY.

**FSLIC (Federal Savings and Loan Insurance C poration):** *see* HOUSING.

**FTC:** *see* FEDERAL TRADE COMMISSION.

## Fuel Briquettes.

The manufacture of fuel briquette carried on in at least 24 different c tries, but the scale of operations is usually small. World duction reached a peak of 86,500,000 short tons in 1943 which Germany produced 85%, France 4%, Belgium 1% the United States 2%; 97% of the total output was in Eur

**United States.**—The growth of the fuel briquetting indu in the United States is indicated in the table on p. 335 thousands of short tons.

In addition to the reg briquettes, there is a small output of "packaged fuel," wh consists of several cubical quettes wrapped and sealed wrapper, for convenience cleanliness in use. Product

*Data on U.S. Fuel Briquetting Industry*

*(In thousands of short tons)*

| | Production | Exports | Consumption | Fuels Used |
|---|---|---|---|---|
| 940 | 1,051 | 23 | 1,028 | 1,003 |
| 941 | 1,299 | 40 | 1,259 | 1,228 |
| 942 | 1,748 | 104 | 1,644 | 1,652 |
| 943 | 2,164 | 175 | 1,989 | 2,076 |
| 944 | 2,465 | 164 | 2,302 | 2,331 |
| 945 | 2,762 | 174 | 2,589 | 2,603 |
| 946 | 3,004 | 163 | 2,841 | 2,829 |

f packaged fuel reached a peak of 269,842 short tons in 1941, ut operations were hindered during the war years by shortages f labour and materials. Output dropped from 208,143 tons in 945 to 190,919 tons in 1946. (G. A. Ro.)

**uel Oil:** *see* PETROLEUM.

**uller's Earth.** Production of fuller's earth in the United States advanced from 296,368 short tons in 945 to 298,752 tons in 1946. Texas is the leading producer ollowed by Florida and Georgia, Illinois, California, Nevada, ennessee and Utah. The 1946 output lacked 11% of meeting he 1930 record. The refining of mineral oils takes 68% of the utput, absorbents use 16%, the refining of vegetable oils takes %, and 3% goes into rotary drilling mud. (G. A. Ro.)

**urfural:** *see* CHEMURGY.

**urniture Industry.** The 4,500 or more factories in the United States manufacturing wooden nd upholstered household furniture in 1947 produced the greatest dollar volume in the entire history of the industry, an estimated $1,425,000,000, a gain approximately 27% more than he $1,120,000,000 output of 1946. This record dollar volume, owever, did not represent an all-time high in unit production, ut was primarily the result of increased prices, which averaged bout 42% higher than the 1941 level. In total number of ieces, the industry showed a gain of about 20% after 1941, hen dollar volume totalled only $630,000,000, or approximately half that of 1947.

Practically the same results were registered by the other ,000 plants manufacturing metal, glass, plastic and other types f furniture, with a combined estimated volume of $300,000,000.

Bedroom and dining room furniture, living room tables, bookases, cabinets and other novelty furniture represented 60% of he 1947 production, while upholstered furniture accounted for 0% and kitchen furniture 10%.

The supply of upholstered furniture was practically normal t the year's end, novelty furniture was becoming quite plentiul and kitchen furniture was in good supply. But casegoods bedroom and dining room suites) were still being voluntarily ationed by manufacturers, who had more than 90 days' advance orders on their books and refused to inflate their backogs beyond that period because of the prospect of higher labour nd material costs during 1948.

In May the industry had a backlog of orders representing ix months' production, but large store buyers, fearing a recesion and having heavy inventories, began to cancel most of heir advance orders, expecting prices to drop. By September 0% of the industry's backlog had been wiped off factory books. urniture prices, however, remained firm, and consumers coninued to buy, so the larger stores began placing orders again nd furniture prices advanced about 5%. Late in the year anther 5% increase was found necessary to meet increased proluction costs and this brought another wave of buying. It was onservatively estimated that large stores would pay $10,000,000 more for the goods they cancelled than they would ave paid under the prices prevailing from May to September.

The July 1947 furniture markets in Grand Rapids, Chicago, New York, High Point, N.C., San Francisco, Los Angeles and the May market at Jamestown, N.Y., were "buyer's markets" in the full sense of the term. But the Jan. 1948 markets in those centres, like the November market in Jamestown, were expected to be "seller's markets" again with casegoods rigidly allocated.

Stylewise, Modern assumed complete supremacy over all traditional types, including 18th century English, French Provincial, Regency and Victorian, the other leading favourites. Mahogany remained the most popular furniture wood but walnut was enjoying renewed popularity and oak, maple, cherry and birch were holding their own.

There were few strikes in the industry during 1947 and employment was at the all-time peak of approximately 160,000 with pay rolls up 28% to approximately $250,000,000. Profits were expected to equal or exceed the 6.9% average of 1946, the best in the industry's long history.

Canada's 623 furniture factories were still operating at peak volume during 1947 but competition was growing. Indications were that the $60,000,000 volume produced represented the complete facilities of the industry and that only higher prices could bring further gains. Approximately 16,000 persons were employed by the industry and pay rolls for 1946 totalled $21,889,000.

The furniture industry in Europe was showing renewed life. From Sweden, Finland, France, Belgium, England, Scotland and Germany came reports of heavy production increases and some Swedish, Finnish, English and French furniture was being exported to the United States. At the big Hanover fair in Germany, a number of furniture manufacturers exhibited new lines and took heavy orders. The furniture industry in Europe was assured of strong demand for several years because of war losses suffered by home owners. (*See* also INTERIOR DECORATION.) (J. A. G.)

**Furs.** At the beginning of 1947, the U.S. fur industry was in the midst of drastic deflation. Fur apparel and fur skin prices declined as much as 50% in some instances, as compared with top prices in 1946.

Fewer garments were made and sold in 1947 than during the previous year, although consumers responded promptly to lower fur prices in the winter and spring. August fur coat sales were hampered by a sudden change in styles. It was not until fall that these styles were modified to meet consumers' approval. Retail business was excellent during the last quarter; fur coat prices were firm and carry-over of merchandise into 1948 was small.

The U.S. government's 20% tax on fur apparel produced $57,880,645 in revenue during the ten months through October. For the corresponding period in 1946, $68,537,093 was collected. Smaller collections were due to lower prices during the first nine months, removal of tax on most fur trimmed cloth garments and fewer sales.

Raw fur imports through September totalled $89,400,000, compared with $178,500,000 in 1946. Russian furs dominated U.S. imports but were less in value than in 1946 and included quantities of ermine, squirrel, Persian lamb, sable, marten, weasel, muskrat, kolinsky and mink. (Fur auctions in Leningrad were revived.) Shipments from China and Japan were limited, consisting mostly of Chinese lambskins, kidskins, weasel, kolinsky, Jap mink and marten. New Zealand and Australia supplied rabbit skins, mostly for the hat felt trade. Imports from Scandinavian countries were limited by lack of demand for silver and platinum foxes. Principal imports from South America were nutria, ocelot, rabbit, hare, and lambskins for mouton. Imports from Canada and Nova Scotia, valued at about $8,000,000, included mink, muskrat, beaver, otter, ermine, marten and silver fox. Shipment of processed

BRITISH AND FRENCH fur dealers inspecting samples at an international fur auction which opened at the Fur palace in Leningrad, U.S.S.R., on July 21, 1947

and manufactured furs from the U.S. to Canada was prohibited late in the year because of dollar shortage in the dominion. The U.S. imported about 5,000,000 Persian lambskins, most of which came from South-West Africa. Other sources were Afghanistan and the U.S.S.R.

U.S. exports of furs during the first nine months of 1947 were valued at $31,255,022, considerably more than in 1946; they were shipped to Great Britain, the Scandinavian countries and South America. London remained the most important U.S. outlet.

The most popular furs of the year were muskrat, mink, Persian lamb, mouton, weasel, beaver and nutria. It was a record year for the silver blue type of mutation mink; more than 150,000 skins were offered by the Mutation Mink Breeders association. Long-haired furs continued to be neglected, and silver fox farmers requested financial aid from the government. It was the first year since 1941 that insolvencies in the trade were numerous; they totalled 113 for 12 months ending with November, involving over $8,000,000. The trade quickly recovered from the break in prices during the first quarter, however, and was on a sound basis by the close of the year.

Skin prices advanced during November and December on all wanted furs, and muskrat sold as high as $4, wild mink as high as $74 in Canada, and mutation mink sold freely with the best types of silver blue going as high as $130. All mink breeders had a successful season, with demand favouring the standard type of ranch mink. Alaska seal sold up to $123 and Canadian beaver around $65–$75.

The London market held auction sales and distributed raw and dressed furs from all parts of the world in limited quantities, mostly to European merchants. British furriers were permitted to purchase raw furs under government regulations. Most of the skins purchased had to be exported. The British public was able to obtain limited quantities of fur apparel paying a 33% tax instead of the prevailing 110%.

Rising prices threatened the fur business with the menace of new inflation late in the year, and consumer resistance increased. Shortage of dollars throughout the world, inflation in numerous countries and Russian domination of eastern Europe prevented the fur trade from returning to a more normal state.

(W. J. Bt.)

**FWA:** *see* Federal Works Agency.
**Gambia:** *see* British West Africa.
**Gambling:** *see* Betting and Gambling.

### Gandhi, Mohandas Karamchand

(1869–1948), du nationalist er, was born at Porbandar (Kathiawar), India. For his bi phy, see *Encyclopædia Britannica.* On Jan. 22, 1937, Ga announced his retirement from active Indian politics, bu 1940 he was as prominent as ever in Indian affairs of state April 1941 he announced that the Congress party had temp ily abandoned its aim of independence for India, but he affirmed his personal policy of nonviolence. After rejecting British proposals for postwar independence, Gandhi laun a new civil disobedience campaign for which he was impris in Aug. 1942. He was released in May 1944 because of fa health. Although he called the independence plan issued White Paper, May 16, 1946, the "best document the Br government could have produced in the circumstances,' voted against it; the party, however, approved it. Rouse Hindu-Moslem bloodshed, Gandhi initiated a protest fast ward the close of 1946. On Jan. 2, 1947, he began a wal tour of east Bengal villages to improve Hindu-Moslem tions.

While Gandhi disapproved of the partition of India, he luctantly accepted it, June 4; later he denounced the In princes for their independence claims. On Sept. 4, he end three-day fast after receiving assurances that Hindu-Mo rioting in Calcutta would not recur. On Jan. 13, 1948, he b another fast, lasting six days, against renewed communal fi ing between Hindus and Moslems. Seventeen days later he assassinated in the garden of Birla House, New Delhi, b young Hindu extremist named Godse. His death, which was signal for new waves of violence in India, was mourned thro out the world. (*See* also India.)

**Garnet:** *see* Abrasives.

### Gas, Natural.

The salient data of natural gas produc and consumption in the United States shown in the following table in billions of cubic feet.

| | 1942 | 1943 | 1944 | 1945 |
|---|---|---|---|---|
| Gross production | 4,453.9 | 4,942.6 | 5,614.2 | 5,902.2 |
| Loss and waste | 626.8 | 684.1 | 1,010.3 | 896.2 |
| Returned to ground† | 771.6 | 843.8 | 892.9 | 1,087.3 |
| Marketed | 3,053.5 | 3,414.7 | 3,711.0 | 3,918.7 |
| Exports | 8.7 | 11.2 | 14.6 | 18.2 |
| Consumption | 3,044.8 | 3,403.5 | 3,696.5 | 3,900.5 |
| Domestic | 498.5 | 529.4 | 562.2 | 607.4 |
| Commercial | 183.6 | 204.8 | 220.7 | 230.1 |
| Field use | 721.1 | 781.0 | 855.2 | 917.0 |
| Carbon black | 335.5 | 315.6 | 355.8 | 431.8 |
| Oil refineries | 201.7 | 243.6 | 315.3 | 338.5 |
| Cement plants | 64.5 | 51.7 | 35.6 | 38.3 |
| Other industrial | 1,039.8 | 1,277.4 | 1,351.7 | 1,337.4 |
| Public utilities‡ | 239.7 | 305.6 | 359.7 | 326.2 |
| Interstate traffic | 815.7 | 920.0 | 990.5 | 1,029.8 |

*Preliminary. †Mostly for repressuring oil fields; small amounts of surplus gas are ret to the ground for storage. ‡Includes manufactured gas, and not included in the consum total.

**Canada.**—Natural gas production in Canada increased f 48,412,000,000 cu.ft. in 1945 to 52,314,000,000 in 1946, sales decreased from 33,932,000,000 to 33,186,000,000. Proc tion and sales continued to increase in 1947. The ou through August was 35,960,000,000 and sales were 27,0 000,000.

**Mexico.**—Natural gas production in Mexico increased f 26,910,000,000 cu.ft. in 1945 to 27,170,000,000 in 1946, 16,360,000,000 in the first half of 1947. (*See* also Fede Power Commission.)

(G. A. Ro.

**Gasoline:** *see* Petroleum.

**asperi, Alcide de** (1881– ), Italian statesman, was born on April 3 at Pieve Tesino, then Austria-Hungary. After studying at the University of Vienna e started his public life as editor of *Il Nuovo Trentino* and ter was elected to the Austrian parliament as an Italian inority representative. After the union of his native province ith Italy, he was elected in 1921 deputy to the Italian parlia- ent. Already a prominent member of the Christian Demo- atic party (then called *Partito Popolare Italiano*), he opposed lussolini's dictatorship and in 1926 was sentenced to four ears' imprisonment for antifascist activities. When freed, he ecame an official of the Vatican library. During World War II e Gasperi took part in the resistance movement in Rome and n June 9, 1944, joined the first Ivanoe Bonomi cabinet as inister without portfolio. Minister of foreign affairs of the cond Bonomi (Dec. 10, 1944) and Ferruccio Parri (June 19, 945) cabinets, he was elected leader of the reconstructed hristian Democratic party and on Dec. 9, 1945, became prime inister. His first, second (July 12, 1946) and third (Feb. 1, 947) cabinets were coalition governments with Socialist and ommunist participation. On June 1, 1947, he formed a cabinet mposed mainly of Christian Democrats, without the Com- unists.

**aulle, Charles de** (1890– ), French army officer and statesman, was born Nov. 22 in Lille, rance. He was graduated from St. Cyr military college at aris shortly before the German invasion of France in 1914. ounded three times during World War I, he was captured by erman troops at Verdun in 1916, but escaped and saw further ction on the western front and in the near east.

De Gaulle's warnings to France not to place its trust in static efense were ignored by the French general staff, and he was roven right in 1940 when the Germans skirted the Maginot ne and overran France. He fled to London where he set up Free French regime, and returned to Paris after its liberation 1944 to head a provisional government. On Nov. 6, 1945, e constituent assembly elected him interim president of the ew provisional government. He resigned on Jan. 20, 1946, eclaring his intention to retire from politics. However, he ter appealed to his countrymen to reject the new constitution, ut was turned down by French voters, and on Dec. 28, De aulle said he would not be a candidate for the presidency, ating that he did not wish "to preside, powerless, over the owerlessness of the state."

He continued his attacks on the constitution throughout 947, and on April 14 announced he would head a new party, he *Rassemblement du Peuple Français* (Reunion of the French eople). The new party showed enormous strength in the ctober municipal elections, gaining nearly 40% of the entire ote. Consequently, De Gaulle (Oct. 27) called for dissolu- ion of the assembly and national elections, but his appeal was ejected by the government.

In his statements on foreign policy in 1947, he urged that rance should shun either side in the east-west rivalry, but re- ersed this position on June 29, declaring that France must lign itself with the U.S. in the event of an extension of the dangerous rivalry" between the U.S. and the U.S.S.R. (*See* lso FRANCE.)

**em Stones.** Information in regard to gem stones was relatively scarce during 1947, except for dia- nonds, which are covered under a separate heading. Most of he oriental gem centres were disorganized by Japanese occu- ation and had not yet returned to normal.

The United States imports included 544,711 carats of rough emeralds in 1946, but the origin was not reported and the value indicates low-grade stones. There were also included 11,902 carats of cut emeralds, the value of which was also relatively low. There was a marked increase in the value of imports of all kinds of precious stones in late years, with exceptional increases after 1943.

The following table shows the total dollar value of all gem imports, excluding industrial diamonds.

| | | | |
|---|---|---|---|
| 1937 | $43,951,220 | 1942 | $28,520,070 |
| 1938 | 28,304,956 | 1943 | 72,109,788 |
| 1939 | 40,488,136 | 1944 | 77,529,806 |
| 1940 | 37,769,135 | 1945 | 114,435,231 |
| 1941 | 33,777,215 | 1946 | 189,017,646 |

There was a similar expansion of imports after World War I, reaching a peak of $105,273,543 in 1919; during the inter-war period the highest valuation reached was $80,651,281 in 1926.

Such gem production as there is in the United States is limited to a variety of semiprecious stones which is estimated to have increased from $40,000 in 1945 to $325,000 in 1946. The leading varieties included in the domestic output are jade, agate, turquoise, variscite, but numerous minor varieties are found in small quantities. (*See* also MINERALOGY.)

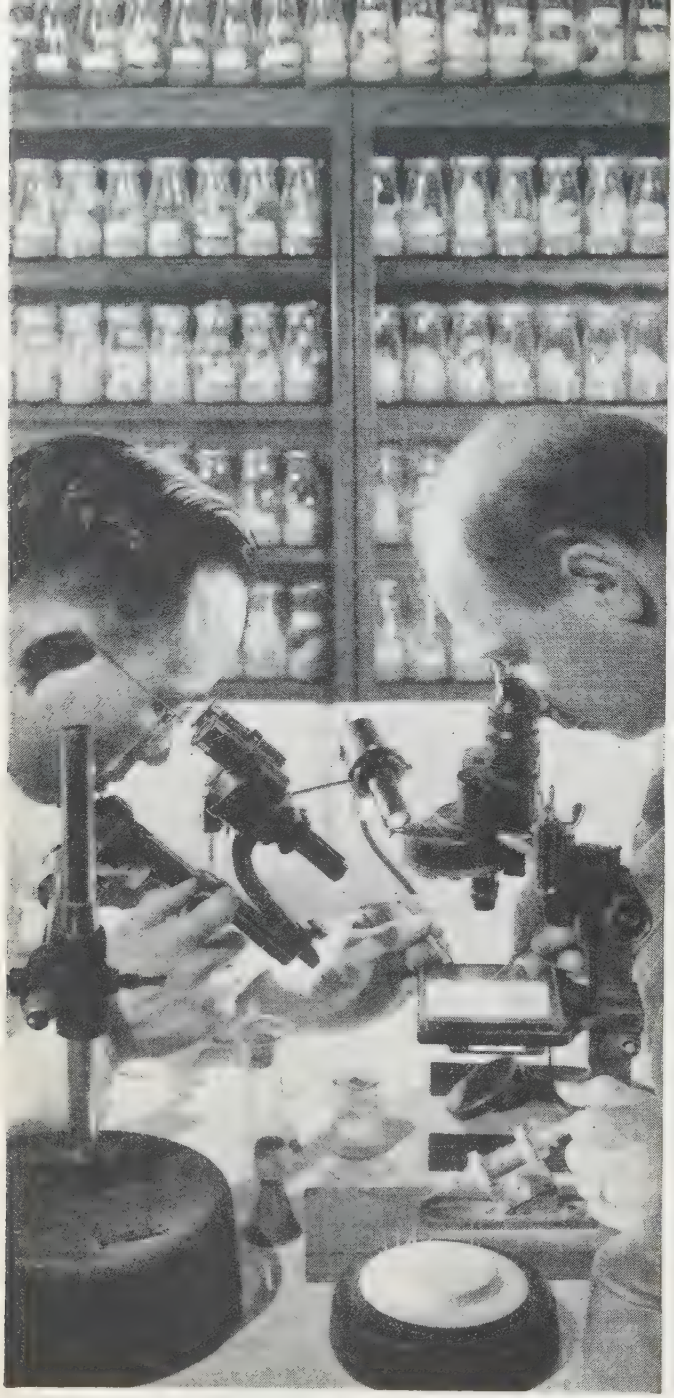
(G. A. Ro.)

**General Federation of Women's Clubs:** *see* SOCIETIES AND ASSOCIATIONS.

**Genetics.** **Radiation and the Human Germ-Plasm.**—In his Nobel prize lecture on "The Production of Mutations" before the Caroline institute, Stockholm, Sweden, H. J. Muller warned that humans are encumbered by innumerable mutations. Since the vast majority of these mutations are undesirable, their further random production should be rigorously avoided as far as possible. All high-energy radiation produces such mutations in man; radiologists were warned, therefore, to insist upon simple precautions to shield the gonads, whenever individuals are exposed to radiation, either in industry or in medical practice.

**Genetics of Micro-organisms.**—In a year of rapid advance in the genetics of micro-organisms, the work of W. S. Stone, O. Wyss and F. Haas on the induction of mutations in bacteria by irradiation of the substrate may be chosen as the most significant contribution. Stone and his colleagues irradiated nutrient broth with ultra-violet light and then demonstrated that the bacterium, *Staphylococcus aureus,* grown on this irradiated medium, underwent mutation to penicillin resistance and to streptomycin resistance much more frequently than when grown on control medium. They then demonstrated that the irradiation of the amino acid content of synthetic medium produced the mutations, while irradiation of the mineral salts had no effect. This method of inducing mutations should prove useful in the study of the physics and chemistry of mutation. In referring to the practical implications the authors suggest that: "a study of the effect of irradiated substrate on the development of cancerous tissue may prove profitable. If any of the activated mutators prove stable the phenomenon must be considered in nutrition and in safeguarding the use of atomic energy." (Wilson S. Stone, Orville Wyss and Felix Haas, "The Production of Mutations in Staphylococcus Aureus by Irradiation of the Substrate," *Proc. Nat. Acad. Sc.,* 33:59–66, March 1947.)

J. Lederberg demonstrated by the use of two strains of the bacterium, *Escherichia coli,* each carrying at least two different mutants producing biochemical or nutritional deficiencies in the organism, that recombinations of the normal or wild-type alleles of these mutants occurred when the two strains were cultured together. By using such strains, each carrying one alternative



GENETICISTS at the University of Rochester transplanting the eye tissue of a fruit fly with tiny glass surgical instruments to determine the effect of bodily environment on inherited characteristics—in this case, eye colour

allele of such factor pairs as those conditioning resistance or susceptibility to bacteriophage, he was able to demonstrate nonrandom recombinations. The facts led to the interpretation of the bacterium as a haploid organism containing one chromosome with genes arranged in linear order, the recombinations occurring when two such bacteria fuse to form a zygote. A tentative linkage map containing eight loci was constructed. The alternative hypothesis, that the recombination types are brought about by transforming substances released from the different cell types and inducing directed mutations, was made highly untenable by the experimental evidence. E. M. Witkin found that about one bacterium per 100,000 in a normal strain of *E. coli* mutated to a form resistant to the division-inhibiting and lethal effects of X-ray and ultra-violet radiation. Some of these mutant strains were also resistant to penicillin and sulfathiazole.

E. F. Oakberg and S. E. Luria demonstrated that resistance to sulfonamide in the bacterium, *S. aureus*, was the result of mutations and not a physiological adaptation as some wo formerly postulated. S. Emerson reported a strain of the m *Neurospora crassa,* in which sulfanilamide, usually an inhi of mould growth, was required for growth. The strain conta two mutants, one for sulfanilamide tolerance and the othe quiring a sulfonamide for growth.

**Natural Selection and Population Genetics.**—M. J. H reported that the stickleback fish, *Gasterosteus acule* showed intergrading of certain morphological characters, but the populations formed could be grouped into two distinct pl ological types, one adapted to a salt-water habitat and the o to fresh water. H. L. Carson and H. D. Stalker found that tain chromosome inversions in natural populations of the *Drosophila robusta,* showed a north-south gradient in their tribution over the range of the species in the eastern U. They reported two pericentric and many paracentric inversi In population cage experiments on *Drosophila pseudoobsc* T. Dobzhansky demonstrated that a population containin mixture of third chromosome inversions showed a cons selection in favour of flies heterozygous for the inversion against homozygotes. This mechanism would allow for the tention in a population of different gene combinations adapt to changing climatic and ecological factors.

BIBLIOGRAPHY.—H. J. Muller, "The Production of Mutations, *Hered.*, 38: 259–270 (Sept. 1947); Joshua Lederberg, "Gene Recomb tion and Linked Segregations in Escherichia Coli," *Genetics,* 32: 505- (Sept. 1947).

(W. P. S

**Geographical Society, American:** *see* SOCIETIES ASSOCIATIONS.

## Geography.

During 1947 geographers returned to the m diverse projects which had been interrupted World War II and prepared new programs to aid the solu of urgent postwar problems. The year was especially diffi because of the shortage of trained personnel, the many sh in positions from government services to academic work vice versa, and the increasing cost and difficulty of tra Nevertheless several ambitious programs were initiated many geographers prepared to visit the first major post geographical congress (International Geographical ur planned at Lisbon for Sept. 1948).

A critical spirit was more in evidence. During the geographers of all belligerent nations played essential parts military and economic planning. Once their reports were examined, it became evident that much of the work was has improvised, often by workers whose training did not fit th for particular tasks. This was no discredit to the geograph who worked hard to meet almost impossible deadlines but rat reflected the inadequate number of trained geographers av able as well as the limited vision of superiors who expected much in too little time.

On both sides of the Atlantic attention was repeatedly cal to the widespread lack of geographic knowledge. Few citiz in any country seemed to possess the geographic data necess to form reasonable judgments of world affairs; this was m strikingly illustrated in the U.S. by the Gallup Poll wh demonstrated that the majority of citizens could not ident even the major European and South American countries on outline map.

Many international acquaintanceships initiated before or d ing World War II were renewed, and requests from geograph in war-torn lands for aid in re-establishing their libraries not go unheeded. Publications were again exchanged.

Travel was facilitated by official missions which incluc geographers and by invitations to teach, especially in west hemisphere universities. Among the most successful of the ternational educational ventures was a summer school sponso

McGill university, Montreal, Canada.

**Publications.**—An outstanding publication of 1947 was the cond edition of *Aids to Geographical Research* prepared by e American Geographical society. This convenient handbook ts the major sources of geographic information as well as e U.S. geographers specializing in each field. *The Profes- onal Geographer*, a new journal of the American Society for rofessional Geographers, instituted a useful series of reviews overseas geography by publishing in its Dec. 1947 issue ticles by Maurice E. Perret on "Geography in Switzerland" d by Shannon McCune on "Geographical Journals in Asia."

Publications from continental Europe were again reaching her lands. Especially welcome were the long awaited volumes France in the *Géographie Universelle* series. Except in cen- al Europe most geographic periodicals had survived the war. he revival of German geography was implied by the appearance a creditable magazine, *Erdkunde: Archiv für Wissenschaft- he Geographie*, edited by Carl Troll and Herbert Lehmann. he French-Canadian *Revue Canadienne de Géographie* also peared in 1947.

**Mapping and Exploration.**—The war revealed both the emendous wealth of map data and the gross inaccuracies and ge gaps in existing maps. Even the U.S. had accurate detailed aps for only a fraction of its area. The army map service Washington, D.C., had taken the lead in cartographic work compilation, by distributing maps to selected depositories d by offering research positions to graduate students. Mean- hile, plans by the army and by the U.S. geological survey ere laid for accelerating the mapping of the U.S. by photo- ammetry.

Expeditions in unexplored areas were at work in the arctic, e antarctic and in Latin America under the auspices of the S. government. In general, exploration elsewhere was hin- ered by upset political situations and lack of funds. Reports in e *Geographical Review* and the *Geographical Journal* showed at intensive exploration of relatively well known lands had en more significant than dramatic ventures into areas which an had not hitherto seen. It is also noteworthy that many im- ortant contributions to geographic knowledge were made by soil ientists, agricultural experts, geologists and engineers with formal training in geography as such. The field of geography ad become so inclusive that thorough surveys must be by roups of specialists rather than by one man. Many studies geographers were especially valuable because of their syn- esis of more detailed findings into a unified regional picture.

**Long-Range Projects.**—The accomplishments of 1947 would ot be known for many years, but in the U.S. they would un- oubtedly include the activation of two long-range projects: e Centennial Studies project and the national atlas. The ommittee on Centennial Studies planned to celebrate the 100th nniversary (1952) of the American Geographical society by ublishing a volume of research studies which would sample, oth by method and area, modern geographic work in the U.S. nother committee drew up a plan to prepare a national atlas the U.S. comparable in scope with atlases already published France, Finland, the U.S.S.R. and several other European ountries. Both projects reflected the desire of U.S. geographers bring their findings together so that a proper evaluation could e made both of past accomplishment and the needs for future esearch.

In Canada the need to integrate geographic information was ecognized by the establishment of a geographical bureau under e department of mines and resources. Elsewhere hundreds of eographers were working in foreign offices, military agencies, braries, other government departments and on planning boards give guidance during the critical postwar reconstruction period. (*See* also CARTOGRAPHY; NATIONAL GEOGRAPHIC SOCIETY; SOCIETIES AND ASSOCIATIONS.) (O. P. S.)

**Geology.** The demand for well trained geologists, both on the part of educational institutions and industrial organizations, was greater during 1947 than could be filled. A number of important conferences were held and several articles published on the training of geologists. Plans were considered for the accrediting of geologic curricula in the colleges and universities of the United States. The number of undergraduate and graduate students majoring in geology reached an all-time high.

**General Geology.**—A basic textbook for beginning students in either geology or geography, entitled *Fundamentals of Earth Science*, by H. D. Thompson appeared in New York.

**Geomorphology.**—The fourth edition of C. A. Cotton's elementary text on *Geomorphology* was issued in New York and New Zealand. During 1946 there appeared in Liége, France, *Principes de Géomorphologie Normale* by Paul Macar.

**Glacial Geology.**—Developments in glacial geology were high-lighted by the appearance in New York of *Glacial Geology and the Pleistocene Epoch* by R. F. Flint. This presents information from the entire globe and indicates areas in which research is desirable. The British Glaciological society, founded in London in 1945, inaugurated a new scientific magazine, *The Journal of Glaciology.*

**Sedimentation.**—The expedition of the "Atlantis" into the northwestern portion of the Gulf of Mexico revealed that deposits clearly associated with the ice age occur within a foot or two of the surface of the sea floor over a large part of the Gulf.

Important evidence supporting the subsidence theory of the origin of coral reefs was revealed by core drilling for the United States navy on Bikini Island and by the results of studies by J. H. F. Umbgrove on the reefs of the East Indies published in the Aug. 1947 *Bulletin* of the Geological Society of America. The problem of geosynclines was thoroughly reviewed by M. F.

FIELD WORKERS for the U.S. bureau of mines drilling holes for blasting in oil shale cliffs near Rifle, Colo., in 1947. Diminishing U.S. oil supplies indicated a possible shift to synthetic fuels obtained from coal and shale

Glaessner and C. Teichert in the August and Sept. 1947 issues of the *American Journal of Science.*

The far-flung program of research formulated by the Research committee of the American Association of Petroleum Geologists presents eight projects in the field of sedimentology as indicated by S. W. Lowman in the March *Bulletin* of the association.

**Stratigraphy.**—A step forward in stratigraphy was the organization of the American Commission on Stratigraphic Nomenclature under the chairmanship of R. C. Moore. A model for future reports on facies relationships is *Memoir* 24 of the Geological Society of America by W. S. Pike, Jr., on the Upper Cretaceous of southwestern Colorado and adjacent states.

Of far-reaching importance is the series of ten papers constituting a *Symposium on Pennsylvanian Problems* assembled by H. R. Wanless for publication as Pt. II of the May issue of *The Journal of Geology.*

**Historical Geology.**—The second edition of the well known textbook on *Historical Geology* by R. C. Hussey, which gives special emphasis to North America, was issued in New York and London.

Other notable contributions introducing new concepts in this field were F. G. Snyder's "The Problem of the Lipalian Interval" and A. J. Eardley's "Paleozoic Cordilleran Geosyncline," which appeared in the May (Pt. I) and July issues respectively of *The Journal of Geology.*

**Structural Geology.**—The monograph by Hans Stille, *Einführung in den Bau Amerikas,* an outstanding work on the structure of North America and a portion of South America published in Berlin in 1940, has recently become available.

An expanded edition of J. H. F. Umbgrove's *The Pulse of the Earth* was published in English in The Hague.

**Vulcanology.**—*The Origin and Development of Craters,* published as *Memoir* 21 of the Geological Society of America, is based upon many years of study of Hawaiian volcanic activity by T. A. Jaggar.

**Petrology and Petrography.**—The third edition of L. V. Pirsson's *Rocks and Rock Minerals* (New York), revised by Adolf Knopf, constitutes a welcome addition to these fields. *Igneous Minerals and Rocks* is a new textbook on petrography by E. E. Wahlstrom published in New York.

**Applied Geology.**—In the June issue of the *Transactions* of the American Geophysical union there is a valuable contribution to hydrology by O. E. Meinzer entitled "Suggestions as to Future Research in Ground-Water Hydrology." The book *Elements of Soil Conservation* by H. H. Bennett, published in New York, brings this phase of geology up to date. J. B. DeMille's comprehensive work on *Strategic Minerals* (New York) is timely.

An important contribution to the rapidly expanding field of photogeology was W. G. Woolnough's "The Aeroplane in the Service of Geology," published by the Royal Society of New South Wales.

The trends of thought and lines of research being stimulated in mining geology were brought out in the "Report of the Committee on Research on Ore Deposits of the Society of Economic Geologists," W. D. Johnston, Jr., chairman, published in the September–October *Economic Geology.*

In the more practical phases of petroleum geology, increased attention was being given to more efficient conservation and secondary recovery methods, to possible sources of substitutes for petroleum, and to the exploration and development of foreign reserves, particularly in northern South America and the middle east. The current status of the world oil situation was summarized by K. F. Mather in "Petroleum—Today and Tomorrow," published in the Dec. 19 issue of *Science,* and in the "Review of Petroleum Geology in 1946" by F. M. Van W. S. Levings, and others, which appeared as the July *Qu* of the Colorado School of Mines. (*See* also MINER PALAEONTOLOGY, VERTEBRATE; SEISMOLOGY.)

(B. H. P.; F. M. V.

**George VI** (1895– ), king of Great Britain, Irela the British Dominions, was born at York c Sandringhan on Dec. 14; for his earlier career see *Encycl Britannica.* By the India Independence act King George from Aug. 15, 1947, to be emperor of India, but became i king of each of the new dominions of India and Pakist Canadian act of parliament also named him king of C These changes of title and a tour of his South African tories were outstanding events in the year. Sailing from mouth on Feb. 1 in H.M.S. "Vanguard," the king, accom by the queen and the princesses Elizabeth and Margar rived at Capetown on Feb. 17. For two months the royal ily travelled by special train through the self-governing and dependencies as far north as the Victoria falls d Zambezi river. At Capetown, Pretoria and Salisbury th opened sessions of the union and state legislatures; else he met massed assemblies of the native peoples headed by chiefs.

On the homeward voyage the royal family visited St. H and Ascension Island in the Atlantic.

Reviewing the tour at London guildhall where he was comed home on May 15, the king said: "Nothing will ever my belief that this old country is at heart as young an orous as it ever was." He inaugurated, during a two-day to Devon and Cornwall, the rebuilding of Plymouth, most bombed of British ports. On July 10 he unveiled in Westm abbey a memorial window to those who died in the bat Britain, and on Oct. 21 the statue of his father, King Geo on the lawns of the abbey. Royal presentation parties again held in the grounds of Buckingham palace on May 31 and a garden party on July 10. For the first time in years the ceremonial Trooping of the Colour was revived king's official birthday (June 12).

Other public occasions at which the king was present the reopening of Drury Lane theatre after its wartime oc tion (Jan. 23), the royal Chelsea flower show (May 20 fourth centenary of Trinity college, Cambridge (June 3 quincentenary of Eton college (June 15), the centenary of the royal Norfolk agricultural association (June 26 annual show of the royal agricultural society at Lincoln 2), an inspection of the home fleet on the Clyde (July 2 23), and the opening of a new storage reservoir for Lond Staines, Middlesex (Nov. 7). More purely social events att were race meetings at Epsom, Ascot and Newmarket, the national Horse show, the Royal tournament, the Wimb tennis finals and one of the cricket test matches (against Africa) at Lords (June 24).

On July 9, the king announced the betrothal of Princess beth to Lt. Philip Mountbatten, R.N. (created, Nov. 1 duke of Edinburgh, *q.v.*). The wedding took place in minster abbey on Nov. 20, before a congregation incl many members of the European royal families. On Dec. king broadcast to the peoples of the empire.

(L. D

**Georgia.** One of the original states of the union, locat the south Atlantic region, with an area of 5 sq.mi., Georgia is popularly called the "Empire State o South." Its population (excluding armed forces overseas 3,233,000 on July 1, 1947, an increase of 3.5% over the census of 3,123,723 (34.4% urban, 65.6% rural, 64.9%

ite, 34.7% Negro and .4% foreign-born). Atlanta, the capi- city, had a population of 302,288 in 1940. The four next gest cities were Savannah (pop. 95,996), Augusta (65,919), acon (57,865) and Columbus (53,280).

**History.**—The death of Governor-elect Eugene Talmadge on c. 21, 1946, only 23 days before the date for his inauguration, t great uncertainty as to who would be governor, for the con- tution of Georgia contained no specific provision covering this entuality. The only candidate's name that had appeared on e ballot in the Nov. 1946 general election was Eugene Tal- dge, nominee of the Democratic party; but in view of his ill- alth, aggravated by the strenuous campaign in the Demo- atic primary, some supporters of the Talmadge wing of the emocratic party were known, "as an insurance measure," to ve scratched the name of Eugene Talmadge on the election llot and to have written in the name of his son, Herman Tal- dge. It was also known that there were write-in votes for hers.

In an atmosphere of tenseness, the general assembly convened regular session on Jan. 13, 1947, and proceeded to canvass e election returns which showed that Eugene Talmadge had ceived 143,279 votes, Herman Talmadge, 675 votes; James V. rmichael, 669 votes; D. Talmadge Bowers, 637 votes; Ellis nall 122 votes; and 26 other persons votes of less than 15 ch. By a vote of 161 to 87, on Jan. 15 the assembly elected erman Talmadge as governor.

As early as Dec. 24, 1946, Gov. Arnall had announced that he garded Lt. Governor-elect Melvin E. Thompson as his rightful ccessor and that he would resign in his favour as soon as ompson was inaugurated. Backed by an opinion of Attorney eneral Eugene Cook that he (Arnall) should remain as gover- r for four more years under the constitutional provision stat- g that the governor should hold office "until his successor shall chosen and qualified," Arnall refused to relinquish the execu- ve offices in the capitol or the executive mansion; but, sup- rted by Adjutant General Marvin Griffin, Talmadge occupied th on Jan. 16. Arnall then set up an "executive office" in the pitol rotunda. Barred from this after a day, he retired to mporary executive offices in downtown Atlanta. On Jan. 18 hompson was inaugurated as lieutenant governor, and Arnall nounced his resignation as governor.

Several suits were brought in the courts seeking a judicial etermination of the controversy over the governorship. One perior court judge ruled in favour of Thompson and two ruled favour of Talmadge. On March 16, by a vote of 5 to 2, the ief justice dissenting, the state supreme court ruled that "in e circumstances appearing the General Assembly had no juris- ction to elect the Honorable Herman Talmadge or any other erson as Governor . . . thus creating the necessity of Governor rnall to continue in office . . . The voluntary resignation of overnor Arnall on Jan. 18, 1947, immediately imposed upon e Lt. Governor the duties of Governor." Talmadge immedi- tely vacated the executive office, saying that he would appeal to e people in the next general election.

The general assembly meanwhile had passed a bill abolishing l laws regulating primary elections. When submitted to Act- g Governor Thompson, he vetoed this bill. The assembly ad- urned without passing an appropriation bill.

On Oct. 24 the state supreme court invalidated a local bill thorizing the issuance of licences for the sale of beer and wine Butts county on the ground that the bill did not have at- ched to it a notice that it had been properly advertised, as re- uired under the constitution of 1945. This decision made it ear that some 350 other local bills enacted after 1945 would so be invalidated if contested. A home-rule bill designed to ve wide control in matters of local interest to cities and counties passed the legislature in 1947.

The principal state officers at the end of the year 1947 were: acting governor, Melvin E. Thompson; chief justice, W. Frank Jenkins; secretary of state, Ben W. Fortson, Jr.; superintendent of schools, M. D. Collins; attorney general, Eugene Cook; state auditor, B. E. Thrasher, Jr.; treasurer, George B. Hamilton; comptroller general, Zach D. Cravey.

**Education.**—For the school year ending in June 1947, there were 4,622 elementary schools (1,718 for white children and 2,904 for Negroes) with an enrolment of 594,947 pupils (367,310 whites and 227,637 Negroes) and a teaching staff of 15,940 (10,073 whites and 5,867 Negroes). High schools numbered 1,293 (746 white and 547 Negro) with a student enrolment of 151,352 (117,562 white and 33,790 Negro) with a teaching staff of 6,406 (5,077 white and 1,329 Negro). Expenditures for elementary and high schools during the year were $31,668,681. In the fall quarter, 1947, a total of 25,210 students were enrolled in the 16 units of the university system of Georgia, including 1,903 students in three Negro colleges. This was more than twice the number of students enrolled in 1939.

**Social Insurance and Assistance, Public Welfare and Related Programs.**—For the fiscal year ending June 30, 1947, benefit payments by the state board of welfare for public assistance were as follows: old age, $13,688,-256; blind, $480,349; dependent children, $2,245,146. In June 1947, a total of 75,810 individuals received old-age assistance, with an average individual allowance of $17.02; 2,189 blind persons received benefits averaging $20.43; and 16,476 dependent children received benefits averaging $13.71. The steady increase in public assistance payments in Georgia is shown by the following totals of expenditures by years: 1938, $3,240,577; 1941, $5,328,710; 1944, $10,363,311; 1946, $11,262,813; 1947, $16,-413,752.

Total expenditures by the state department of health for the year ending June 30, 1947, were $7,627,904. In Oct. 1947, there were 1,143 patients in the state tuberculosis sanatorium (Batty hospital). On June 30, 1947, there were 9,018 patients in the Milledgeville State hospital. Current operating expenses for this hospital for the insane were $2,317,636 for the fiscal year ending in June, 1946.

During the year ending June 30, 1947, unemployment insurance totalling $4,954,497 was paid to 43,800 persons. In the same period, 75,200 veterans of World War II received $23,349,427 in unemployment payments.

On June 30, 1947, there were 5,515 prisoners in the various state and county institutions under the control of the state board of corrections. Total expenditures by this board for the fiscal year were $832,726.

A total of 5,213 persons were assisted by the state division of vocational rehabilitation. Expenditures of this division for the fiscal year ending June 30, 1947, were $1,139,497, including $836,958 from federal funds.

**Communications.**—On June 30, 1947, there were in Georgia 90,983 mi. of roads, of which 14,299 mi. were state roads and the remainder county roads. The total paved mileage, exclusive of city streets, was 10,478. Total expenditures of the state highway department for the fiscal year ending June 30, 1947, were $29,298,838. On Nov. 5, 1946, there were 6,442 mi. of main line railroad track in the state, of which 266 mi. were double-tracked; in addition there were 2,254 mi. of yard-switching and passing track. A survey of 1945 showed that Georgia had 958 mi. of developed navigable river channels.

On Nov. 1, 1947, there were 135 airports in Georgia. On that date the Civil Aeronautics administration estimated the approved airways in Georgia at 670 mi.

The Georgia Public Service commission estimated the total number of telephones in Georgia as 424,092 (385,592 of Southern Bell stations, as of Sept. 30, 1947, and 38,500 of independent stations, as of Dec. 31, 1946).

**Banking and Finance.**—On Dec. 31, 1946, there were in Georgia 267 state banks and 7 branches with total resources of $762,303,430, including $205,100,316 in loans and discounts, $321,382,413 in U.S. government securities bonds, and $197,277,290 cash in vaults and amounts due from approved reserve agents. Liabilities of these banks included $519,426,659 in demand deposits and $129,589,679 in savings deposits.

On Oct. 1, 1947, there were 44 federal savings and loan associations and 20 state chartered building and loan associations operating in Georgia. Total resources of these associations as of July 1, 1947, was approximately $135,000,000.

On June 30, 1947, there were 50 national banks in Georgia with total assets of $995,885,000, including U.S. government obligations of $402,-944,000, loans and discounts of $259,477,000, and cash balances with other banks of $275,990.000. Liabilities of these banks included deposits by individuals, partnerships and corporations, $716,854,000 (demand, $546,-513,000; time, $170,341,000); government deposits, $102,495,000; interbank deposits, $117,399,000; and capital accounts, $51,133,000.

For the fiscal year ending June 30, 1946, the total state receipts were $107,258,000, or $34.33 per capita. The chief sources of revenue were $27,284,991 from motor fuel tax, $15,182,916 from income tax, $16,-605,734 from U.S. grants and $10,727,070 from the alcoholic beverage tax. Chief expenditures were $38,351,251 for education, $33,964,279 for highways and $12,433,738 for public welfare. There was an unencumbered surplus of $15,395,814 in the state treasury at the end of the fiscal year. Unofficial sources indicate that the state income had increased approximately 20% in 1947.

On June 30, 1946, the total state debt outstanding (not including current operation obligations) was $8,271,302.17, but this amount was covered in full by cash reserves. The constitution of Georgia prohibits any increase in the state's bonded indebtedness.

**Agriculture.**—Crops produced in 1947 were valued at $466,491,000, an increase of 11% over the previous year, and exceeded only by the all-time high of $578,000,000 in 1919. The total harvested acreage of principal crops in 1946 was 7,243,000 ac., a decrease of 1,422,000 ac. from the 1935–44 average.

Cash receipts from farm marketing in 1946 amounted to $416,410,000

Table I.—*Leading Agricultural Products of Georgia, 1947 and 1946*

| Crop | 1947 | 1946 | Value, 1947 |
|---|---|---|---|
| Cotton, bales | 660,000 | 557,000 | $104,610,000 |
| Cottonseed, tons | 265,000 | 223,000 | 21,730,000 |
| Corn, bu. | 48,075,000 | 44,145,000 | 103,361,000 |
| Peanuts, lb. | 780,780,000 | 716,900,000 | 79,640,000 |
| Tobacco, lb. | 130,132,000 | 110,537,000 | 51,137,000 |
| Oats, bu. | 16,100,000 | 16,404,000 | 17,710,000 |
| Hay, tons | 696,000 | 728,000 | 14,616,000 |
| Commercial truck crops | | | 9,601,000 |
| Peaches, bu. | 5,810,000 | 5,628,000 | 9,296,000 |
| Velvet beans, tons | 272,000 | 286,000 | 8,704,000 |
| Wheat, bu. | 3,360,000 | 2,093,000 | 7,728,000 |
| Pecans, lb. | 26,555,000 | 16,000,000 | 7,515,000 |
| Sugarcane syrup, gal. | 4,070,000 | 4,025,000 | 5,698,000 |

(crops, $288,345,000; livestock and products, $119,761,000; government payments, $8,304,000).

The principal crops of 1947 are shown in Table I.

**Manufacturing.**—Employment in nonagricultural industries in Georgia reached a peak of 660,000 workers in 1943, about 35% higher than in 1939. In Oct. 1947, the number of nonagricultural workers was estimated at 608,000. Approximately half of these workers were employed in manufacturing industries (as contrasted to nonmanufacturing industries such as trades, services and finance). Two industries, textiles and lumber, employ more than one-half of all manufacturing workers in Georgia, and if four more groups are included—apparel, food processing, furniture and chemicals—82% of all manufacturing employment is accounted for.

**Minerals.**—In 1945 (latest complete year) the total value of Georgia's mineral production was $19,939,000. Minerals produced were asbestos, barite, bauxite, cement, clay, coal, fuller's earth, mineral waters, peat, sand and gravel, slate, stone and talc. The value of the principal minerals produced was as follows:

Table II.—*Leading Mineral Products of Georgia, 1945*

| Mineral | Value in 1945 |
|---|---|
| Clay | $7,108,321 |
| Stone | 4,799,320 |
| Barite | 1,056,035 |
| Iron ore | 616,524 |
| Sand and gravel | 350,264 |
| Talc | 296,163 |

(A. B. S.)

## German Literature.

The general picture offered by German literature in 1947 was one of stagnation. As was to be presumed, books published in 1947 were chiefly about the anti-Hitler conspiracy and about the concentration camps, in which an explanation of the rise and fall of nazi Germany was attempted. Such books, written mainly by politicians or chance-victims of gestapo terrorism, had nothing to do with creative writing. Books like Hans Bernd Gisevius' *To the Bitter End,* Rudolf Semler's sketchy revelations of his master Josef Goebbels, or Dr. Eugen Kogon's profound analysis of the roots and methods of S.S. control in *The S.S. State* were patriotic justifications of an unsuccessful action, attempts at personal exculpation, or denunciations of a fallen foe. Some of them might be of value to the historian: their human value, as that of the nazi regime, was negligible because they lacked the moral qualities demanded of the serious political writer. These moral qualities were, however, present in Theodor Haecker's *Tag- und Nachtbuecher* (*Day and Night Books*) posthumously published in 1947, in which the well-known Roman Catholic essayist and first interpreter of Soren Kierkegaard followed the events inside nazi Germany from 1939 to 1945. Haecker was born in 1889, a south German who lived in Austria, and died on April 9, 1945. As early as 1935 the nazis had forbidden Haecker to speak and to lecture in public; his translation of Kierkegaard's *Diaries* was allowed to be published but his own works were banned. The *Tag- und Nachtbuecher* were in 1947 the only documents of faith to have come from postwar Germany and were filled with a human and religious belief in the necessity of the catastrophic end of the reich, for the sake of secular and extramundane justice. Little recovery was noticeable from the deterioration of writing during the nazi rule. The nebulous, woolly diction of blood-and-soil mysticism seemed to have taken possession even of politically irreproachable writers like Ernst Wiechert. Some translation into German was done but scarcely any creative German writer except Haecker and, at a distance, Werner Bergengruen in his *Dies Irae,* had yet made an attempt to explain to his own people and to the world abroad what it was that had come to pass in Germany great German writers, Thomas Mann and Hermann Hess already left their mother-country.

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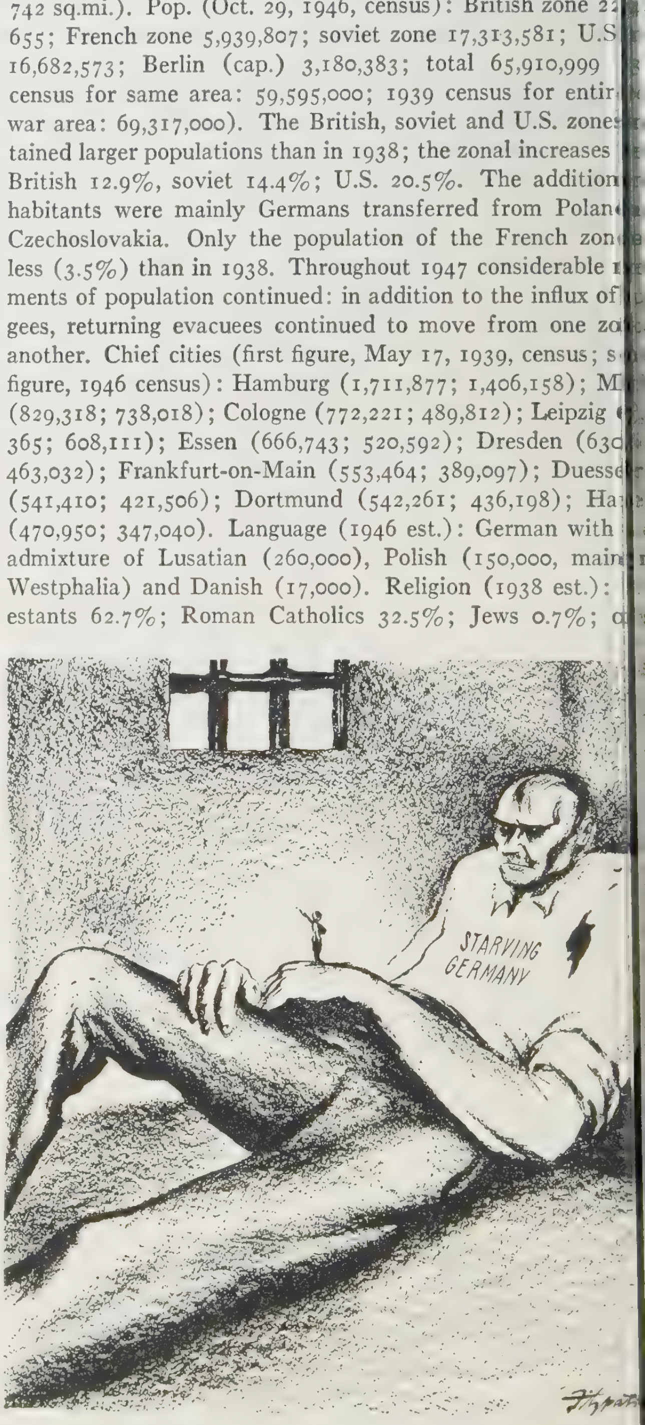
## Germany.

A country of central Europe bounded north by the North sea, Denmark and the sea, on the east by Poland, on the south by Czechosl Austria and Switzerland, and on the west by France, L bourg, Belgium and the Netherlands. According to a decla signed in Berlin on June 5, 1945, the country was und supreme authority of the four Allied powers—the United Great Britain, the U.S.S.R. and France—and divided int zones. Area: British zone 42,724 sq.mi.; French zone sq.mi.; soviet zone 46,584 sq.mi.; U.S. zone 36,869 sq.mi. lin (*q.v.*) 341 sq.mi.; total 143,245 sq.mi. (Jan. 1, 1938 742 sq.mi.). Pop. (Oct. 29, 1946, census): British zone 2 655; French zone 5,939,807; soviet zone 17,313,581; U.S 16,682,573; Berlin (cap.) 3,180,383; total 65,910,999 census for same area: 59,595,000; 1939 census for entir war area: 69,317,000). The British, soviet and U.S. zone tained larger populations than in 1938; the zonal increases British 12.9%, soviet 14.4%; U.S. 20.5%. The addition habitants were mainly Germans transferred from Polan Czechoslovakia. Only the population of the French zon less (3.5%) than in 1938. Throughout 1947 considerable ments of population continued: in addition to the influx of gees, returning evacuees continued to move from one zo another. Chief cities (first figure, May 17, 1939, census; s figure, 1946 census): Hamburg (1,711,877; 1,406,158); M (829,318; 738,018); Cologne (772,221; 489,812); Leipzig 365; 608,111); Essen (666,743; 520,592); Dresden (63 463,032); Frankfurt-on-Main (553,464; 389,097); Duess (541,410; 421,506); Dortmund (542,261; 436,198); Ha (470,950; 347,040). Language (1946 est.): German with admixture of Lusatian (260,000), Polish (150,000, main Westphalia) and Danish (17,000). Religion (1938 est.): estants 62.7%; Roman Catholics 32.5%; Jews 0.7%;



"BREAD OR A BIGGER JAILER" was how Fitzpatrick posed the 1947 lem of Germany, in the *St. Louis Post-Dispatch*

RMAN PRISONERS OF WAR, discharged in 1947, are shown boarding a ound robin" train travelling past most large cities in the U.S. occupation ne. Each prisoner jumped off the train as it neared his home

ɪ%. Military governors and commanders-in-chief: British ne, Lieut. Gen. Sir Brian Robertson; French zone, Gen Joseph erre Koenig; soviet zone, Marshal Vasili Sokolovski; U.S. ne, Gen. Lucius Clay.

**History.** — Elections for the three provincial assemblies *andtage*) took place in the British zone in April 1947. The P.D. (*Sozialdemokratische Partei Deutschlands,* or Social emocratic party of Germany) with more than 3,000,000 votes d 173 seats gained the largest representation. The C.D.U. *Christlich-Demokratische Union,* or Christian Democratic ion) with about 2,750,000 votes and 144 seats were the run- rs-up, and after them came the K.P.D. (*Kommunistische rtei Deutschlands*) with 890,000 votes and 76 seats.

The three landtage in the French zone were elected in May. ne C.D.U. secured an absolute majority of votes cast (984,- o), with the S.P.D. second (572,000).

Most interesting of the year's elections, however, were those the Saar which the French government had already, in Dec. 46, separated economically from the rest of its zone of cupation by the erection of a tariff barrier. Three of the four arland parties declared themselves in favour of an economic nalgamation with France, only the Communist party opposing ch a possibility. It was noteworthy that 92% of the electorate ted, so that little use was made of the opportunity to express position to "economic annexation" by abstention from the lls. This tacit assent of the Saar population to "economic nexation" to France was no doubt in part explicable by the pe of better material conditions (*see* Saar).

Two important German problems came nearer solution in 47—those of the prisoners of war and of denazification. The Four Powers agreed at Moscow to repatriate all German prisoners in their hands before the end of 1948. On July 5 the last German prisoner of war in U.S. hands was repatriated. After the Moscow conference the British government accelerated repatriation of German prisoners to a rate of 15,000 a month from Britain (as from Dec. 1, 1947, 20,000), and 5,000 a month from the middle east. The official Russian figure of German prisoners in Russian hands by March 1947 was 890,000. Repatriation of considerable batches of prisoners from Russia took place during the year. The number of German prisoners still in France by Sept. 1947 was 468,000; in Yugoslavia about 80,000; in Poland about 40,000; in Belgium about 36,000 and in Czechoslovakia about 10,000.

It became increasingly clear during 1947 that the immense numbers of persons implicated (3,250,000 in the U.S. zone alone), and consequently the time factor involved, were likely to bring denazification to a fairly speedy end, at least in the British and U.S. zones. On Oct. 4 the British military government, following the example set by the U.S. authorities in 1946, handed denazification over to the German *Länder* governments under decree No. 110 which laid down a detailed scale of categorization and punishment for former nazis, but included a proviso that dismissals should cease after Jan. 1, 1948. Up to Aug. 31, 1947, 337,000 nazis had been dismissed from posts in the British zone and up to June 30, 210,000 had been similarly dealt with in the U.S. zone.

The process of denazification should not be confused with the punishment of war criminals and of members of the organizations (*e.g.,* gestapo and certain S.S.) classified as criminal by the judgment of the Nuernberg tribunal. Military government courts in all four zones continued to try war criminals. (*See* War Crimes.)

*Economic.*—The most important development in the economic

RUSSIAN OFFICERS supervising the removal of steel girders from the Siebel plant in the soviet zone of occupation, as part of German reparations to the U.S.S.R.

field was the creation, after the failure of the Moscow Four Power conference in April, of a German economic council in Frankfurt-on-Main for the fused British and U.S. zones. The economic council and its organs were composed of 54 members elected by the 6 provincial assemblies and the 2 free cities on a proportional party basis, an executive committee of 8 appointed by the provincial governments and 5 functional directors (economics, food, finance, post and communications) appointed by the executive committee with the assent of the council. Its decrees are, after approval by the military government, binding upon the Land governments.

Efforts were made by the British and U.S. authorities to step up industrial production and increase exports so as to promote imports of food and of essential equipment in the two zones. In March a $600,000,000 credit for the period Jan. 1, 1947, to June 30, 1948, was promised, and an Anglo-U.S. Joint Export Import agency (J.E.I.A.) was set up. A drive for increased coal production in the Ruhr was launched in January by the creation of a points system to discourage absenteeism among the coal miners. Under this scheme a miner working every shift during a month received clothing, furniture, bacon and liquor supplementary to his wages. Under a further measure in September miners exceeding a certain output received U.S. food parcels. The coal production drive was so successful that 275,000 short tons of coal were produced on Oct. 24, 1947, compared with 204,000 on Oct. 23, 1946, and during the first 9 months of 1947 more than 55,000,000 short tons of coal were produced compared with 45,000,000 during the corresponding period in 1946. Similar production improvements were not, however, achieved in other sectors of industries in the British and U.S. zones. The figures for raw iron production, for instance, were: Jan.–Sept. 1946: 1,544,000 short tons; Jan.–Sept. 1947: 1,523,000; raw steel: Jan.–Sept. 1946: 1,871,000 short tons; Jan.–Sept. 1947: 2,167,000. After the exceptionally severe winter, industrial production in the British zone sank in February to 26.4% of 1936. By Oct. 1947 it had risen to 39.5%, which was the best month's output since the capitulation.

The efforts to increase exports from the British and U.S.
zones were forwarded by a relaxation of restrictions. G
exporters were as from October permitted to conclud
tracts up to $5,000 without prior submission to J.E.I.
startling increase in exports was, however, revealed in the
statistics. Between Jan. 1 and Oct. 31, 1947, $164,000,0
actually exported from the two zones.

In the soviet zone the policy of extracting reparation
forward. On Jan. 15 Marshal Vasili Sokolovski announce
dismantling of industrial plants was terminated, except
case of certain coal-mine equipment. Nevertheless, sever
tories—for example, Richard Dietsch (textile) at Gey
Hochfrequenz (electrical equipment) at Radeberg—we
mantled during 1947 in completion of the 1946 dismantli
gram. In September a start was made in the eastern zon
the dismantling of a further 750 mi. of railway track.

The conversion of a large number of firms in key ind
in the soviet zone into soviet concerns was energeticall
ceeded with during 1947, with the undoubted intention of
ing reparations from current production. According to the
zone production plan for the second quarter of 1947, out
total production of Rm.1,800,000,000, more than a q
(Rm.440,000,000) was to be furnished by these soviet
panies.

Anglo-U.S. reparations policy after the failure of the M
conference was to define the limits of the reparations
exacted from the two western zones so as to give German
ers and managers an assurance of the permanent ind
structure that would be left to them. In pursuance of this
a level of industry plan was published on Aug. 30. Unde
plan German industrial capacity to be left intact in th
western zones would be approximately that of 1936. Th
portant steel industry was to be left a capacity of 11,7
short tons a year.

Following the publication of the level of industry plan,
of plants to be dismantled, either as war industry or as r
tions, was issued on Oct. 16. It comprised 682 installa
including 302 arms factories, 224 machine-making works, 9
and steel firms and 42 chemical concerns. Decisions o
mantling in the so-called forbidden industries—alum
vanadium, beryllium, ball bearings, synthetic ammonia,
thetic rubber and synthetic oil—as well as in the shipbu
industry, had still to be made. In all other respects the lis
announced as the final statement of reparations claims o
British and U.S. zones. (*See* also REPARATIONS.)

The drastic policy of expropriation and socialization i
soviet zone, which had been initiated by the Saxon pro
government (after the referendum held in July 1946 on th
ject of the future of 1,760 expropriated nazi and "reactio
concerns), was proceeded with in 1947. On May 30, 194
Thuringian assembly passed a law for the nationalization o
eral and coal concerns. A similar law was passed in May b
Sachsen-Anhalt assembly. By October 400 firms were na
alized in Thuringia, and 545 in Sachsen-Anhalt. In Saxony
firms were nationalized, 278 handed over to municipalitie
district (*Kreis*) authorities, 73 to co-operatives and 379
resold to private persons.

In the British zone a decree ordering the breaking-
trusts and cartels employing more than 10,000 workers
promulgated by military government in January. A start i
plementing this policy was made in the steel industry in
17 new separate firms were created by Sept. 30, 8 out o
United Steel concern, 2 out of Hösch of Dortmund, 2 o
Klöckner and 1 each out of Otto Wolff, Mannesmann and K

Labour shortage, resulting from the manpower depriva
of World War II and from the fall in the German worker's
put, became a serious problem, particularly in the British

viet zones. In the soviet zone the difficulty in securing labour work on dismantling and in the ore mines in Saxony, where anium was being sought, led during the summer to drastic ethods of compulsory recruitment. Many thousand workers ere summoned to the German labour offices and ordered to edetermined industrial areas. Ration cards were taken away enforce compliance. In the Saxon mining areas the com- lsorily recruited miners were put into labour camps guarded Russian detachments.

*Nutrition.*—In the British and U.S. zones the normal con- mer's daily ration was fixed at 1,550 calories. Supplementary tions, were, however, issued to heavy and very heavy workers. the British zone in September and November these amounted 1,150 and to 2,500 calories extra per day, and 5,000,000 embers of the working population received them. According former Pres. Herbert Hoover's findings in April 1947, mothers d small children were being adequately nourished, but chil- en between the ages of 6 and 20 were seriously undernour- ied. The black market flourished. The black market price of tter in the British zone, for example, was more than 100 nes the legal price. As a consequence about 50% of the butter tput of the German peasants in the 2 zones was diverted into egal channels. (*See* also ANTI-SEMITISM; FASCISM; FOREIGN INISTERS' CONFERENCES; OCCUPIED AREAS, ADMINISTRATION .) (D. A. SN.)

**Education.**—U.S. zone (1947): elementary schools 10,506, teachers ,588, scholars 2,326,424; secondary schools 476, teachers 7,979, schol- 221,812; vocational schools 791, teachers 3,791, scholars 314,825. ench zone (1946): elementary schools 5,289, teachers 12,568, scholars 3,477; secondary schools 228, teachers 2,719, scholars 74,000. British ne (1947): juveniles under supervision of welfare office 5,170; ju- iles under welfare education 14,838; total school children fed daily ,89,600.

About 106,000 students were registered in the universities of the 4 nes, of whom 20% were women. The students were distributed among zones as follows: U.S. zone 49,504; British zone 31,974; soviet zone ,878; French zone 11,509.

**Finance.**—Zonal budgets: U.S. zone (actual 1946–47): revenue Rm. 93,000,000; expenditure Rm.4,299,000,000. British zone (actual 1946– ): revenue Rm.7,617,200,000; expenditure Rm.5,416,700,000; emer- icy revenue Rm.528,300,000; emergency expenditure Rm.2,348,300,- o; soviet zone (est. 1947–48): revenue Rm.8,500,000,000; expenditure n.8,300,000,000; French zone (ordinary 1946–47): revenue Rm.1,664,- 4,621; expenditure Rm.970,217,600; expenditure (extraordinary 1946– ) Rm.1,186,127,420. Currency: Reichsmark (Rm.)

**Communication.**—U.S. zone: railways (1946): tickets sold 307,074,000; ight carried 128,897,425 short tons. Motor vehicles registered (June 47): cars 151,880; trucks 98,394, buses 3,119; road tractors 21,937; ilers 61,125. Civil aviation (Jan.–June 1947): passengers arrived 56; departed 6,087; freight arrived 125 short tons; left 32 short tons. lephones (July 1947): 513,525. British zone: railways: track open une 1947) 7,489 mi.; passengers carried (1946) 610,800,000; freight rried (1946) 99,780,360 short tons. Motor vehicles (July 1947): cars d ambulances 78,538; tractors 34,707; motorcycles 88,697; coaches d buses 3,171; miscellaneous 6,005; horse-drawn vehicles 715,644. rman merchant shipping (including Bremen, 1947): 466,188 tons dead ight. Radio receiving sets: 3,012,331. French zone: railways (1946): ick open 3,221 mi. Motor vehicles (1946): cars 30,489; trucks 18,525; ses 370; tractors 8,117; motorcycles 28,386. Telephones (Oct. 1946): ,739.

**Agriculture.**—Production of principal commodities is shown in Table I. her crops (1946) in short tons: oil seeds 41,000; potatoes 6,420,000; gar beets 2,798,800; fodder beets 9,136,700; turnips 2,050,800. Live- ock (1946): cattle 4,275,000; pigs 3,060,000; sheep 1,003,000; horses 8,000. French zone (in short tons): production (1946): cereals 935,870; tobacco 7,714; potatoes 2,259,320; sugar beets 383,940; wine 37,527,600 U.S. gal. Livestock (1946): horses 164,239; cattle 1,692,258; sheep 272,063; pigs 7,108.

**Table I.**—*Leading Agricultural Products of Germany*

(In short tons)

U.S. zone

| Commodity | Actual 1946 | Average 1939–44 |
|---|---|---|
| neat and spelt | 917,900 | 1,193,500 |
| e | 767,000 | 965,350 |
| nter mixed grains | 1,727,000 | 2,223,800 |
| rley | 498,100 | 926,800 |
| ts. | 735,000 | 1,059,000 |
| atoes | 5,928,760 | 8,522,800 |
| gar beets | 896,000 | 1,119,600 |
| seeds | 19,800 | 56,200 |
| dder roots | 10,070,000 | 11,090,000 |
| y | 11,264,600 | 12,857,000 |

British zone

| Commodity | Est. 1947 | Actual 1946 |
|---|---|---|
| neat | 353,700 | 549,900 |
| e | 1,139,500 | 1,093,200 |
| rley | 162,000 | 216,000 |
| ts. | 895,926 | 908,000 |
| ced grains | 282,100 | 236,900 |

**Table II.**—*Coal Production in Germany, July 1946–June 1947*

(In short tons)

|  | U.S. zone | British zone | Soviet zone | French zone |
|---|---|---|---|---|
| Hard coal | 1,488,800 | 67,715,000 | 2,909,280 | 9,180,500 |
| Brown coal | 3,719,000 | 56,664,000 | 115,528,000 | nil |

**Mineral and Industrial Production.**—Coal production is shown in Table II. Other mineral products: U.S. zone (1946–47, in short tons): iron ore 940,150; steel ingots and castings 211,110; copper 18,620; lead 1,218; zinc 1,999; aluminum 11,544; crude potash 1,245,060; sulphuric acid 43,160; salt 493,990; caustic soda 44,072; calcium carbide 184,328; cement 1,035,800. British zone (1946–47, in short tons): iron ore 2,967,850; steel ingots and castings 2,731,290; lead 23,724; zinc 19,320; copper 7,785; crude potash 1,713,610; synthetic rubber 14,195; sulphuric acid 314,500; caustic soda 41,323; calcium carbide 69,073; cement 1,536,950. French zone (1946, in short tons): pig iron 243,000; steel ingots and castings 301,950; cement 287,000.

Textiles: U.S. zone (1946–47, in short tons): cotton yarn 27,650; wool yarn 4,331; staple fibres 10,718; British zone (1946–47, in short tons): cotton yarn 27,461; wool yarn 13,476; worsted yarn 3,411; linen 1,406; jute and paper 5,912; staple fibres 9,311; hemp 4,061.

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**G. I. Bill of Rights:** *see* EDUCATION; VETERANS' ADMINISTRATION.

## Gibraltar.

British fortress colony, situated on a narrow peninsula covering the western outlet of the Mediterranean sea and running southwest from the southwest coast of Spain: the territory consists of a long high mountain known as "The Rock," with a flat sandy plain, raised only a few feet above the level of the sea, lying to the north. Area: 2 sq.mi.; pop. (est. 1939): 20,000. Languages: Spanish and English. Religion: (civil population) mainly Roman Catholic. Executive authority is vested in a governor (appointed by the British crown) assisted by an executive council. Governor: Lieutenant General Sir Kenneth Anderson (appointed in 1947).

**History.**—Early in World War II it was found necessary, as a matter of military precaution, to remove "useless mouths" from what might, almost at any moment, become a beleaguered fortress. In all, some 16,700 persons were evacuated from Gibraltar. At the end of 1946 the number still awaiting repatriation from camps and hostels in the United Kingdom was about 2,100; by Oct. 1947 the figure was still more than 1,000. Every effort was made to speed up repatriation, but the local shortage of housing accommodation presented a serious obstacle. A housing scheme costing £1,750,000 was inaugurated early in the year; and it was decided, as one means of financing this scheme, to float a loan which, it was hoped, would produce at least £1,000,000. In order to provide the interest and sinking fund on the loan, a government lottery was opened by the governor in Oct. 1947. It was expected to bring in a revenue of £48,000 per annum. The question of the future composition of the Gibraltar legislative council (the establishment of which was approved in principle in Nov. 1945) was under consideration during the year.

**Finance and Trade.**—The legal tender of Gibraltar consists of local government notes and United Kingdom silver and copper coinage. Revenue (1946) £480,000; expenditure £685,000. The revenue of the colony is derived from port dues, rent on crown property, licence duties and fees and import duties. (J. E. SH.)

## Gide, André Paul Guillaume

(1869– ), French novelist and essayist, was born on Nov. 21 in Paris. For his early career, see *Encyclopædia Britannica*. A flaunter of convention, Gide brewed many a literary storm in the 1920s. Publication of *Corydon*, a defense of homosexuality, touched off a quarrel with Catholic churchmen; his autobiography, *Si le grain ne meurt* (*If I Die*), was regarded as a shockingly cynical work; in 1927 his *Travels in the Congo*, an exposé of French colonial exploitation written after his African travels, brought down on him the wrath of rightist critics.

Embittered by capitalist "iniquities," Gide sought solace in Marxism, but disillusionment with the communist experiment followed a trip to Russia, 1935–36. He stated his objections to communism in two works, *Return from the U.S.S.R.* (1937) and *Afterthoughts on the U.S.S.R.* (1938). Thenceforth, his former leftwing laudators denounced him as a "reactionary"; Gide, however, remained a confirmed antifascist. He gave aid to the loyalists in the Spanish civil war and refused to support Vichy during World War II.

Long considered by the Swedish academy for the Nobel prize in literature, Gide finally won it Nov. 13, 1947, over such distinguished competition as François Mauriac, T. S. Eliot and Benedetto Croce. The Nobel committee did not single out any specific work for mention, but Gide himself declared that he considered *Les faux monnayeurs* (*The Counterfeiters*) his most important book. His *Journal* was published in English translation in 1947.

**Gilbert and Ellice Islands Colony:** *see* PACIFIC ISLANDS, BRITISH.

**Ginger:** *see* SPICES.

### Girl Scouts.

In 1947 Girl Scouts of the U.S.A. celebrated the 35th anniversary of its founding in Savannah, Ga., by passing the 1,000,000 mark in girl membership. Focal points of the year's activities were a 27-nation International encampment for high-school age Girl Guides and Girl Scouts at Camp Barree, Pa., and the 29th biennial Girl Scout national convention at Long Beach, Calif.

At the International encampment, girls from every state in the nation, Puerto Rico, the Philippines and 26 other countries met for three weeks to discuss world scouting and youth's part in world affairs. The 29th biennial Girl Scout national convention, Nov. 4 to 7, with a record attendance of 2,600 women and men from all parts of the country, mapped out a "plan of work" for two years.

Agriculture was announced as a new field of activity for Girl Scouts of all ages. Among the 30 new proficiency badges added were 8 in the field of agriculture—beekeeping, dairying, fruit raising, home gardening, landscaping, poultry raising, rabbit raising and truck gardening.

"Clothes for Friendship," a project under which Girl Scouts would undertake to send 1,000,000 garments—100,000 wardrobes of new or reconditioned clothing—to children in Europe and Asia, was launched at the convention.

The convention amended the name of the national organization from "Girl Scouts" to "Girl Scouts of the United States of America." Mrs. C. Vaughan Ferguson, national president, was re-elected for a second term of two years. Dr. Mary H. S. Hayes became chairman of the executive committee, succeeding Mrs. Paul T. Kammerer.

On Sept. 30, 1947, there were 353,560 Brownie Scouts (girls 7 through 9) in 20,082 Brownie troops; 615,017 Intermediate Scouts (girls 10 through 14) in 32,197 troops; and 61,518 Senior Service Scouts (girls 15 through 17) in 4,624 troops. Total Girl Scout membership was 1,030,095. There were 293,867 men and women who were troop leaders, associate Girl Scouts or who served on troop committees, boards of directors, etc. Total Girl Scout and adult membership was 1,323,962. Girl Scout troops were organized in every state and U.S. possession. Headquarters of Girl Scouts of the U.S.A.: 155 E. 44th St., New York 17, N.Y. (C. M. R.)

**Girl Guides, Great Britain.**—The outstanding event of the year was the Guide and Scout International Folk Dance festival and rally, when teams of dancers from six European co the U.S.A., Great Britain and Ulster gave displays in I the Midlands and Scotland. In conjunction with the f 1,500 First Class guides from all parts of Great Britain a week-end camps around London and took part, with th teams, in a march past in the Mall, when Princess Eli Chief Ranger of the British empire, took the salute. T the first occasion on which the new guide uniform was It consisted of a bright blue shirt, navy skirt and navy b

The World Committee of Girl Guides and Girl Scouts London in October, and Miss M. W. Kydd, former chie missioner for Canada, was welcomed as the new director World bureau. Two new headquarters training centre opened at Broneirion in Wales and Lorne in Ulster. (M. A

**Glands:** *see* ENDOCRINOLOGY; MEDICINE.

### Glass.

Statistical information on world glass manu was unobtainable in 1947, but it was understoc the factories of central Europe were still in a crippled con Belgium and France had active factories, although those tries, as well as Great Britain, suffered from fuel shortag

In 1947, the U.S. glass industry reached new high le employment, wages, volume and value of product. Stil pered by shortage of soda ash, and in the winter mon some lack of fuel and transportation, the industry was lated by demand for flat glass for automobiles and bui and by the high level of spending for domestic glasswar total value of products reached $600,000,000. Little of crease could be attributed to rise in prices, which remain markably stable in comparison with those of most cons goods.

U.S. plate-glass production for the year exceeded 250,0 sq.ft., and window glass filled 20,000,000 boxes of 50 sq.ft Despite the renewed competition of tin cans and paper c ers, the number of glass bottles and jars manufactur proached 17,000,000,000. Two billion lamp bulbs, in addi millions of radio tubes and Christmas-tree ornaments, we duced during the year. Fine glassware and luxury items w great demand, although the production of common tur approximately 70,000,000 doz., declined somewhat from this was also true for common tableware and kitchen glas

Cheaper natural gas in the southwestern states attracte glass plants, particularly to Oklahoma. At the same tim last glass plant in the city of Pittsburgh, historically a of the industry, ceased operations.

The number of patents relating to glass has steadily de from a high of 323 in 1941 to 122 in 1947. However, imp developments continue. For example, a process for pr photographs by ultra-violet light, developing permanent co prints within the glass itself, was in use; new processes announced for drawing glass tubing automatically in larger the techniques of toughening by heat treatment heavy po plate glass for doors, and of bending thin plates in ma pairs for curved safety-glass automobile windows were f improved. (S. R.

### Gliding.

Gliding in 1947 was marked by the establis of three new international records. In the Paul B. MacCready, Jr. set a goal and return mark of 2 on July 16, 1947. Virginia Bennis (Mrs. Stephen) gained ft. of altitude on July 17, 1947, establishing a new interna women's altitude mark. In Sweden, Lt. Axel Persson s 8,050 metres (26,410.74 ft.) on July 12, 1947, to a new national altitude record for men.

The Soaring Society of America held its 14th Annual S ontest at Wichita Falls, Texas, July 4–20, with 79 pilots com-eting in 65 sailplanes. New U.S. national soaring records in ddition to the two already mentioned were as follows: single-lace distance for men: John Robinson, July 19, 1947, 333 mi.; ingleplace distance for women: Virginia Bennis, July 14, 1947, 4 mi.; singleplace goal for women: Virginia Bennis, July 8, 947, 52 mi.; twoplace goal for men: Eugart Yerian and pas-enger, July 13, 1947, 207 mi.; twoplace goal and return for nen: Lyle Maxey and passenger, July 15, 1947, 104 mi.

There were three flights exceeding 300 mi., 32 flights between oo and 300 mi., 149 flights between 99 and 100 mi. There ere 10 flights with a minimum altitude gain of 10,000 ft. bove point of release. Richard J. Comey, flying a Schweizer -21, earned the title of National Soaring Champion.

Flying in Texas during the 14th Annual Soaring contest, Charles Wingfield set a new distance record of 215 mi. for British pilots, as well as a goal and return record of 146 mi.; Eric Nessler established a distance record of 319 mi. for French pilots.

The British National Gliding contest was held at Bramcotte, Nuneaton, June 22–29, with 32 pilots competing. There were 5 flights between 100 and 200 mi.

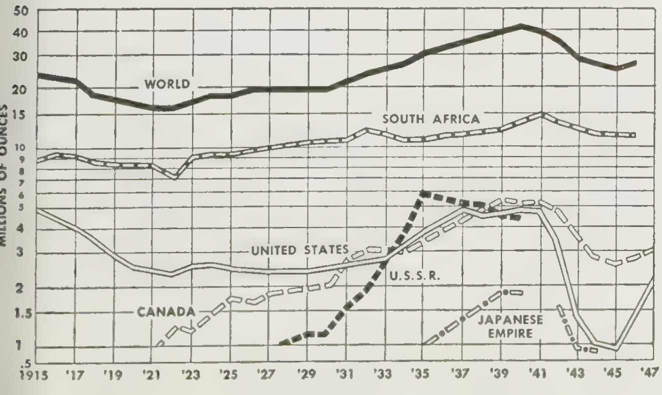
In Germany gliding enthusiasts of the royal air force staged a ontest at Oerlinghausen May 17–23. The Kircheim school in he U.S. zone was ordered closed. (B. Sk.)

**Gold.** The year 1947 was conspicuous for three developments with respect to gold. It saw the stocks of the metal in he United States recross their previous high point of $22,799,000,000, established in Nov. 1941; it saw the development of ively black markets in many parts of the world, and it saw he Dominion of Canada place a premium on newly mined gold n order to stimulate production.

The net gain in monetary gold stocks by the U.S. for the ear was $2,250,000,000, the largest after 1940 and the largest n the nation's history with the exception of 1934 (when the rice of gold was officially raised from $20.67 an ounce to $35), 1939 and 1940. The increase, moreover, would have been even greater but for the fact that the government drew down $687,500,000 in February for use in the International Monetary Fund. The Soviet Union, whose holdings were believed to be in he neighbourhood of $2,500,000,000, would rank second to he U.S., and the United Kingdom, with $2,360,000,000, third. The U.S. total of $22,829,000,000 did not include metal that was held in that country physically but the title to which resided elsewhere. This is the so-called "earmarked" gold, and at the end of Nov. 1947 it amounted to $3,573,800,000.

In most countries it is illegal to buy or sell gold at a premium over the statutory price. As a result of inflation and the chronic weakness of many currencies, however, the practice became fairly widespread during the year, with the price ranging generally from $42 to $50 or its equivalent and occasionally much higher, as compared with the official U.S. purchase price of $35.

It is traditional, because of the metal's fixed price, that gold mining is prosperous in bad times and nonprosperous in periods of boom and high prices. This, coupled with the shortage of dollars, explains the action taken in Nov. 1947 by Canada in paying a bounty of $7 an ounce on all gold produced in excess of that for the previous year.



GOLD PRODUCTION: world total and output of the principal producing countries, as compiled by *The Mineral Industry*

Table I.—*Analysis of Changes in Gold Stock of United States*

(In millions of dollars)

| Period | Gold stock at end of period | Increase in gold stock | Net gold import or export (—) | Ear-marked gold: decrease or increase (—) | Domestic gold production |
|---|---|---|---|---|---|
| 1936 | *11,258 | 1,132.5 | 1,116.6 | — 85.9 | 131.6 |
| 1937 | *12,760 | 1,502.5 | 1,585.5 | —200.4 | 143.9 |
| 1938 | 14,512 | 1,751.5 | 1,973.6 | —333.5 | 148.6 |
| 1939 | 17,644 | 3,132.0 | 3,574.2 | —534.4 | 161.7 |
| 1940 | 21,995 | 4,351.2 | 4,744.5 | —644.7 | 170.2 |
| 1941 | 22,737 | 741.8 | 982.4 | —407.7 | 169.1 |
| 1942 | 22,726 | —10.3 | 315.7 | —458.4 | 125.4 |
| 1943 | 21,938 | —788.5 | 68.9 | —803.6 | 48.3 |
| 1944 | 20,619 | —1,319.0 | —845.4 | —459.8 | 35.8 |
| 1945 | 20,065 | —553.9 | —106.3 | —356.7 | 32.0 |
| 1946 | 20,529 | 464.0 | 311.5 | 465.4 | 51.2 |
| 1947—January | 20,748 | 219.3 | —16.8 | 196.1 | 7.6 |
| February | 20,330 | †—418.2 | 20.4 | —684.5 | 5.5 |
| March | 20,463 | 132.5 | 153.6 | 203.5 | 5.5 |
| April | 20,774 | 311.5 | 44.1 | 272.0 | 6.2 |
| May | 20,933 | 159.0 | 129.7 | 13.1 | 7.2 |
| June | 21,266 | 333.4 | 200.2 | 119.0 | 6.1 |
| July | 21,537 | 270.6 | 219.2 | 26.7 | 7.3 |
| August | 21,766 | 228.8 | 111.7 | 42.3 | 7.0 |
| September | 21,955 | 189.4 | 109.6 | 153.1 | 7.0 |
| October | 22,294 | 339.0 | ‖450.8 | —4.0 | ‡ |
| November | ‖22,615 | ‖320.4 | ‡ | §82.8 | ‡ |

*Includes gold in the Inactive Account amounting to 27 million dollars on Dec. 31, 1936, and 1,228 million on Dec. 31, 1937.

†Change reflects primarily gold subscription to International Monetary Fund.

‡Not yet available.

§Gold held under earmark at the Federal Reserve Banks for foreign account including gold held for the account of international institutions amounted to 3,573.8 million dollars on Nov. 30, 1947. Gold under earmark is not included in the gold stock of the United States.

‖Preliminary.

From *Federal Reserve Bulletin*, Dec. 1947.

Jan. 24, 1948, was a notable anniversary in the annals of the gold mining industry in the U.S. It was just 100 years earlier that gold was discovered at Sutter's Mill, Calif., a discovery which was the signal for the most excited gold rush in the country's history. (*See* also FEDERAL RESERVE SYSTEM.)

Table I shows the significant changes in the gold position of the U.S. in 1947 and the principal influences producing them. (E. H. Co.)

**World Production.**—Production data are lacking for so many countries in Europe, Asia, Africa and Oceania that world totals can be no more than rough estimates, but Table II shows outputs so far as they were available at the close of 1947 from the major producers.

Table II.—*World Production of Gold*

(Thousands of fine ounces)

| | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|
| United States | 4,832 | 3,583 | 1,381 | 1,022 | 929 | 1,462 |
| Canada | 5,345 | 4,841 | 3,651 | 2,923 | 2,697 | 2,833 |
| Mexico | 800 | 801 | 632 | 509 | 419 | 421 |
| Central America | 302 | 324 | 280 | 271 | 244 | 218 |
| South America | 1,747 | 1,604 | 1,442 | 1,354 | 1,259 | 1,202 |
| India | 286 | 260 | 252 | 188 | 168 | 132 |
| Belgian Congo | 561 | 500 | 439 | 364 | 341 | 331 |
| Gold Coast | 885 | 784 | 565 | 534 | 475 | 587 |
| Southern Rhodesia | 790 | 760 | 657 | 593 | 568 | 545 |
| South Africa | 14,407 | 14,127 | 12,804 | 12,280 | 12,225 | 11,918 |
| Australia | 1,497 | 1,154 | 751 | 658 | 635 | 2 |
| Total (est.) | 40,160 | 36,300 | 29,160 | 26,700 | 26,300 | 27,800 |

**United States.**—Mine production of gold increased from 954,572 oz. in 1945 to 1,574,505 oz. in 1946 and to 2,090,013 oz. in 1947. Monthly outputs were increasing regularly but had attained only half the rate prevailing in 1941.

**Canada.**—Canadian production rose from 2,696,727 oz. in 1945 to 2,832,554 oz. in 1946.

The improved output continued into 1947 with a total of 3,035,161 oz.

**South Africa.**—The production rate in 1947 was about the same as in 1946, slightly less than 1,000,000 oz. monthly.

(*See* also EXCHANGE CONTROL AND EXCHANGE RATES; MINERAL AND METAL PRODUCTION AND PRICES.) (G. A. Ro.)

**Gold Coast:** *see* BRITISH WEST AFRICA.

## Golf.

The United States enjoyed in 1947 one of its most successful golf years after 1934, as attested by an over-all total of 5,121 contestants in the 4 championships conducted by the United States Golf association. The Professional Golfers' Association of America practically covered the calendar in its tournament schedule. Meanwhile, public-links and daily-fee golfers were multiplying their prewar numbers by at least ten, World War II having stimulated interest among thousands of war-plant workers who found the game an ideal outlet for exercise.

Highlights of the year 1947 were the several successes scored by U.S. golfers in international play. Frank Stranahan, husky Toledo, O., amateur, missed winning the British open title by one stroke. Willie Turnesa and Dick Chapman, teammates on the victorious United States Walker cup team and both former holders of the U.S.G.A. amateur crown, went to the final of the British amateur, with Turnesa rallying from a five-hole deficit to beat Chapman in the final.

The United States Walker cup team normally would have met the British in the United States, but because of unusual conditions in the United Kingdom, the U.S.G.A. agreed to accept the responsibility of sending the U.S. golfers overseas. The matches at St. Andrews, Scotland, found the visitors no better than even after the Scotch foursomes at a 2–2 score. The Britons fought hard through the early stages of the singles, but the U.S. contestants, led by Marvin (Bud) Ward of Spokane, Wash., came back to win 6 of the 8 singles for an 8–4 triumph.

The U.S. men were not long home when the prodigious Mrs. Mildred (Babe) Didrikson Zaharias, later voted the woman athlete of the year, became the first woman of the U.S. to win the British women's championship. Her victory marked the 17th consecutive win for the gifted Texan, who shortly after resumed her professional status.

The international professional Ryder cup series appeared doomed to postponement until Robert A. Hudson, Sr., Portland, Ore., wholesale grocer and packer, bid for it and secured it for the Portland Golf club in November. Once again, the U.S. ran away with the contest, winning 11–1. Only Sam King, who defeated Herman Keiser of Akron, O., was able to score a point for the invaders.

While U.S. golfers were scoring overseas, two others were crossing the northern border and bringing back Canadian championships, Stranahan winning the amateur and Grace Lenczyk the women's. The Canadian open was captured by the remarkable Arthur d'Arcy (Bobby) Locke. The South African, having beaten Sam Snead of Virginia in an exhibition series in South Africa wherein he took 12 of 16 matches, accepted Snead's invitation to try U.S. courses. He won six tournaments, including the Goodall man-to-man competition and finished well up in such fixtures as the Masters' and the Western.

Leading money winner of the year was the popular and colourful Jimmy Demaret of Texas, whose total earnings of $27,936.83 topped Locke's $24,327.50. Demaret, who on Easter Sunday, became the third man in history to win the treasured Masters' championship twice, also captured the P.G.A.'s Vardon trophy for low-scoring average, beating out Ben Hogan by a fraction of a stroke.

LEW WORSHAM teeing off on the 17th hole during the U.S. national
golf tournament at St. Louis, June 15, 1947. Worsham won the title
Sam Snead by a single stroke on the last hole

Pacing all women golfers among the amateurs was 112
Louise Suggs of Atlanta, Ga. The little southerner first acc
plished what no other woman in the history of the Wom
Western Golf association ever had done—to win the west
open and amateur two years in a row. She encored the o
title by defeating her clubmate, Dorothy Kirby, 4 and 2
Atlanta, then came back later in the summer to run away f
young Carol Diringer of Ohio, 9 and 8, in the amateur. By
time she had become the favourite for the women's natio
title, and fulfilled the prediction by winning the champions
2 up, from Miss Kirby.

The U.S.G.A. open at St. Louis, Mo., produced the t
play-off in the last three years in which it was held. Lew W
sham, former sailor from Virginia, appeared to have the
won after Locke, Ward and Ed (Porky) Oliver had falte
Worsham, a comparative newcomer, finished with a regula
72-hole score of 282, which was tied by Snead.

In the 18-hole play-off, Worsham won 69–70 on the
green, by sinking his $29\frac{1}{2}$-in. putt after Snead had missed
$30\frac{1}{2}$-in. putt.

The U.S. amateur, which in 1947 returned to the British
match-play system employed in 1934–35–36, saw Robert (Sk
Riegel, sometime resident of both Los Angeles, Calif., and F
adelphia, Pa., beat out Johnny Dawson, 45-year-old Chicago
by a 2 and 1 margin, on Pebble Beach's foggy shores.
public-links title went to Wilfred Crossley, onetime New E
lander from Atlanta, Ga., who defeated Avery Beck of Rale
N.C., 6 and 5. They were the survivors of the largest U.S.
entry of the year, 2,633 golfers having sought admission.

The Professional Golfers' championship was won by
Ferrier, the Australian who had become a United States citi
Ferrier proved that the putter is mightier than the driver
winning the Detroit final from hard-hitting Melvin (Chi
Harbert, 2 and 1.

The national intercollegiate championships were captured
Dave Barclay of the University of Michigan and Shirley S
of Michigan Normal college. (C. Bt.

**onorrhoea:** *see* VENEREAL DISEASES.

**orizia:** *see* TRIESTE, THE FREE TERRITORY OF.

## overnment Departments and Bureaus.

he following are the leading officers of the more important overnment departments and bureaus of the United States. he date for the information is Dec. 31, 1947.

| Department or Bureau | Name | Post |
|---|---|---|
| epartment of State | *Marshall, George C. | Secretary |
| | *Lovett, Robert A. | Under-Sec'y |
| | Bohlen, Charles E. | Counselor |
| | Armour, Norman | Asst. Sec'y |
| | Thorp, Willard L. | Asst. Sec'y |
| | Norton, Garrison | Asst. Sec'y |
| | Saltzman, Charles E. | Asst. Sec'y |
| | Peurifoy, John E. | Asst. Sec'y |
| epartment of the Treasury | *Snyder, John W. | Secretary |
| | Wiggins, A. L. M. | Under-Sec'y |
| Bureau of the Comptroller of the Currency | Delano, Preston | Comptroller |
| Treasurer of the U.S. | Julian, William A. | Treasurer |
| Bureau of Customs | Johnson, William R. | Commissioner |
| Bureau of Internal Revenue | Schoeneman, George J. | Commissioner |
| Bureau of Narcotics | Anslinger, Harry J. | Commissioner |
| Bureau of the Mint | Ross, Mrs. Nellie Tayloe | Director |
| U.S. Savings Bonds Division | Clark, Vernon L. | Nat'l Director |
| *U.S. Coast Guard | Farley, Joseph F., Adm. | Commandant |
| ational Military Establishment | *Forrestal, James | Sec'y of Defense |
| Joint Chiefs of Staff | *Leahy, Wm. D., Fleet Adm. | |
| | *Eisenhower, Dwight D., Gen. of the Army[1] | |
| | *Denfeld, Louis E., Adm. | |
| | *Spaatz, Carl, Gen. | |
| War Council | *Forrestal, James | Chairman |
| Munitions Board | Hargrave, Thomas J. | Chairman |
| Research and Development Board | Bush, Dr. Vannevar | Chairman |
| Department of the Army | *Royall, Kenneth C. | Secretary |
| | Draper, William H. | Under-Sec'y |
| Women's Army Corps | Hallaren, Mary A., Col. | Director |
| Department of the Navy | *Sullivan, John L. | Secretary |
| | Kenney, W. John | Under-Sec'y |
| Chief of Naval Operations | *Denfeld, Louis E., Adm. | Chief of Naval Operations |
| Women's Reserve of the U.S. Naval Reserve | Hancock, Joy B., Capt. | Director |
| *U.S. Marine Corps Headquarters | Vandegrift, Alexander A., Gen.[2] | Commandant |
| Women's Reserve of the U.S. Marine Corps Reserve | Hamblet, Julia E., Maj. | Director |
| Department of the Air Force | *Symington, W. Stuart | Secretary |
| | Barrows, Arthur S. | Under-Sec'y |
| epartment of Justice | *Clark, Tom C. | Att'y-Gen. |
| Solicitor General | Perlman, Philip B. | Solic. Gen. |
| *Federal Bureau of Investigation | Hoover, J. Edgar | Director |
| Bureau of Prisons | Bennett, James V. | Director |
| Immigration and Naturalization Service | Miller, Watson B. | Commissioner |
| ost Office Department | *Donaldson, Jesse M. | Postmaster Gen. |
| epartment of the Interior | *Krug, Julius A. | Secretary |
| Bureau of Land Management | Johnson, Fred W. | Director |
| Office of Indian Affairs | Brophy, William A. | Commissioner |
| Geological Survey | Wrather, William E. | Director |
| Fish and Wildlife Service | Day, Albert M. | Director |
| Bureau of Reclamation | Straus, Michael W. | Commissioner |
| National Park Service | Drury, Newton B. | Director |
| Bureau of Mines | Boyd, James | Director |
| Division of Territories and Island Possessions | Davis, James P. | Director |
| epartment of Agriculture | *Anderson, Clinton P. | Secretary |
| | Dodd, Norris E. | Under-Sec'y |
| *Agricultural Research Administration | Lambert, W. V. | Administrator |
| Bureau of Animal Industry | Simms, Bennett T. | Chief |
| Bureau of Agricultural and Industrial Chemistry | Howard, L. B. | Chief |
| Bureau of Dairy Industry | Reed, O. E. | Chief |
| Bureau of Entomology and Plant Quarantine | Annand, P. N. | Chief |
| Bureau of Plant Industry, Soils and Agricultural Engineering | Salter, Robert M. | Chief |
| Bureau of Human Nutrition and Home Economics | Stiebeling, Hazel K. | Chief |
| Office of Experiment Stations | Trullinger, R. W. | Chief |
| Bureau of Agricultural Economics | Wells, O. V. | Chief |
| Extension Service | Wilson, M. L. | Director |
| *Farm Credit Administration | Duggan, Ivy W. | Governor |
| *Farmers Home Administration | Lasseter, Dillard B. | Administrator |
| Forest Service | Watts, Lyle F. | Chief |
| Office of Foreign Agricultural Relations | Wheeler, L. A. | Director |
| Production and Marketing Administration | Gilmer, Jesse B. | Administrator |
| Commodity Credit Corporation | Gilmer, Jesse B. | President |
| Federal Crop Insurance Corporation | Geissler, Gus | Manager |
| Rural Electrification Administration | Wickard, Claude R. | Administrator |
| Soil Conservation Service | Bennett, Hugh H. | Chief |
| epartment of Commerce | *Harriman, W. Averell | Secretary |
| | Foster, William C. | Under-Sec'y |
| Bureau of the Census | Capt, James C. | Director |
| Bureau of Foreign and Domestic Commerce | Taylor, Amos E. | Director |
| *National Bureau of Standards | Condon, E. U. | Director |
| *Coast and Geodetic Survey | Colbert, Leo O. | Director |
| Inland Waterways Corporation | Trimble, South, Jr. | Chairman of the Board |
| *Civil Aeronautics Administration | Wright, Theodore P. | Administrator |
| *Patent Office | Kingsland, Lawrence C. | Commissioner |
| Weather Bureau | Reichelderfer, Francis W. | Chief |
| Department of Labor | *Schwellenbach, Lewis B. | Secretary |
| | Morse, David A. | Under-Sec'y |
| Bureau of Labor Statistics | Clague, Ewan | Commissioner |
| Apprentice-Training Service | Patterson, William F. | Director |
| U.S. Employment Service | Goodwin, Robert C. | Director |
| Women's Bureau | Miller, Frieda S. | Chief |
| Division of Labor Standards | Connolly, William L. | Director |
| Wage and Hour and Public Contracts Divisions | McComb, William R. | Administrator |
| *Federal Security Agency | Ewing, Oscar R. | Administrator |
| U.S. Office of Education | Studebaker, John W. | Commissioner |
| U.S. Public Health Service | Parran, Dr. Thomas | Surgeon General |
| Social Security Administration | Altmeyer, Arthur J. | Commissioner |
| Food and Drug Administration | Dunbar, Paul B. | Commissioner |
| *Office of Vocational Rehabilitation | Shortley, Michael J. | Director |
| Bureau of Employees' Compensation | McCauley, William | Director |
| *Federal Works Agency | Fleming, Philip B., Maj. Gen. | Administrator |
| Public Buildings Administration | Reynolds, W. E. | Commissioner |
| Public Roads Administration | MacDonald, Thomas H. | Commissioner |
| Bureau of Community Facilities | Field, George H. | Commissioner |
| Independent Offices | | |
| Atomic Energy Commission | *Lilienthal, David E. | Chairman |
| Civil Aeronautics Board | *Vacancy* | Chairman |
| *Export-Import Bank of Washington | Martin, Wm. McC., Jr. | President |
| *Federal Communications Commission | Coy, Wayne | Chairman |
| *Federal Deposit Insurance Corporation | Harl, Maple T. | Chairman |
| *Federal Mediation and Conciliation Service | Ching, Cyrus S. | Director |
| *Federal Power Commission | Smith, Nelson Lee | Chairman |
| *Federal Reserve System, Board of Governors of the | Eccles, Marriner S. | Chairman |
| *Federal Trade Commission | Ferguson, Garland S.[3] | Chairman |
| General Accounting Office | Warren, Lindsay C. | Comptroller General |
| *Government Printing Office | Giegengack, A. E. | Public Printer |
| Housing and Home Finance Agency | Foley, Raymond M. | Administrator |
| Home Loan Bank Board | Fahey, John H. | Chairman |
| Federal Housing Administration | Richards, Franklin D. | Commissioner |
| Public Housing Administration | Egan, John Taylor | Act'g Commissioner |
| Indian Claims Commission | Witt, Edgar E. | Chief Commissioner |
| *Interstate Commerce Commission | Aitchison, Clyde B.[4] | Chairman |
| Library of Congress | Evans, Luther H. | Librarian |
| National Advisory Committee for Aeronautics | Hunsaker, Dr. Jerome C. | Chairman |
| *National Archives | Buck, Solon J. | Archivist |
| National Capital Park and Planning Commission | Grant, U. S., III, Maj. Gen. | Chairman |
| *National Labor Relations Board | Herzog, Paul M. | Chairman |
| *National Mediation Board | Douglass, Frank P. | Chairman |
| National Security Council | Souers, Sidney W. | Exec. Sec'y |
| Central Intelligence Agency | Hillenkoetter, Roscoe H., Rear Adm. | Director |
| National Security Resources Board | Hill, Arthur M. | Chairman |
| *Office of Selective Service Records | Hershey, Lewis B., Maj. Gen. | Director |
| Railroad Retirement Board | Kennedy, William J. | Chairman |
| *Reconstruction Finance Corporation | Goodloe, John D. | Chairman |
| U.S. Commercial Company | Schieck, DeWitt C. | President |
| Federal National Mortgage Association | Goodloe, John D. | President |
| *Securities and Exchange Commission | *Vacancy* | Chairman |
| *Smithsonian Institution | Wetmore, Alexander | Secretary |
| Tax Court of the United States | Turner, Bolon B. | Presiding Judge |
| *Tennessee Valley Authority | Clapp, Gordon R. | Chairman |
| U.S. Civil Service Commission | Mitchell, Harry B. | President |
| U.S. Maritime Commission | Smith, Wm. W., Vice Adm. | Chairman |
| U.S. Tariff Commission | Ryder, Oscar B. | Chairman |
| *Veterans' Administration | *Gray, Carl R., Jr. | Administrator |
| Executive Office of the President | | |
| Bureau of the Budget | Webb, James E. | Director |
| Council of Economic Advisers | Nourse, Edwin G. | Chairman |
| Office of Government Reports (in liquidation) | *Vacancy* | Director |
| Emergency Agencies | | |
| Office for Emergency Management (in Executive Office of the President) | | |
| Office of Defense Transportation | Johnson, J. M. | Director |
| Philippine Alien Property Administration | Henderson, James McI. | Administrator |
| Office of Housing Expediter | Woods, Tighe E. | Act'g Housing Expediter |
| Philippine War Damage Commission | Waring, Frank A. | Chairman |
| *United Nations Relief and Rehabilitation Administration | Rooks, Lowell W., Maj. Gen. | Director General |
| War Assets Administration | Larson, Jesse | Act'g Administrator |
| Quasi-Official Agencies | | |
| *American National Red Cross | O'Connor, Basil | Chairman, Central Committee |
| *Pan American Union | Lleras Camargo, Alberto | Director General |
| †National Academy of Sciences and National Research Council | Richards, Alfred N. | President, National Academy of Sciences |
| | Bronk, Detlev W. | Chairman, National Research Council |

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ee separate article.
esigned Feb. 7, 1947. Succeeded by Gen. Omar N. Bradley.
ucceeded by Maj. Gen. Clifton B. Cates, effective Jan. 1, 1948.

*See separate article.
†See Societies and Associations.
[3] Succeeded by Robert E. Freer, effective Jan. 1, 1948.
[4] Succeeded by William E. Lee, effective Jan. 1, 1948.

**Great Britain.**—His majesty's chief officers of state and the permanent officials of the more important of the government departments of Great Britain at the close of 1947 were these:

| Ministry or Department | Name | Post |
|---|---|---|
| Admiralty, Board of. . . . . . . . | Hall, Viscount<br>Lang, Sir John G. | First Lord<br>Permanent Secretary |
| Agriculture and Fisheries, Ministry of . | Williams, Thomas<br>Vandepeer, Sir Donald | Minister<br>Permanent Secretary |
| Air Ministry . . . . . . . . . . . | Henderson, Arthur<br>Barnes, Sir James H. | Secretary of State<br>Perm'nt Under-Sec'y |
| Assistance Board . . . . . . . . . | Soulbury, Lord<br>King, Sir Geoffrey | Chairman<br>Secretary |
| *Bank of England . . . . . . . . . | Catto, Lord<br>Nevill, W. H. | Governor<br>Secretary |
| Burma Office . . . . . . . . . . | Listowel, the Earl of<br>Monteath, Sir David | Secretary of State<br>Perm'nt Under-Sec'y |
| Cabinet Office . . . . . . . . . | Brook, Sir Norman | Perm'nt Sec'y and Sec'y of the Cabinet |
| Civil Aviation, Ministry of . . . . . | Nathan, Lord<br>Overton, Sir Arnold | Minister<br>Permanent Secretary |
| Colonial Office . . . . . . . . . | Jones, Arthur Creech<br>Lloyd, Sir Thomas<br>Calder, Sir John Alex.<br>Downie, Harold | Secretary of State<br>Perm'nt Under-Sec'y<br>Crown Agents |
| Commonwealth Relations Office. . . | *Noel-Baker, Philip<br>Machtig, Sir Eric<br>Carter, Sir Archibald | Secretary of State<br>Perm'nt Under-Sec'ys |
| Customs and Excise, Board of. . . . | Croft, Sir William | Chairman |
| Defence, Ministry of. . . . . . . . | Alexander, Albert V.<br>Wilson Smith, Sir Henry | Minister<br>Permanent Secretary |
| Duchy of Lancaster, Office of the . . | Pakenham, Lord | Chancellor |
| Education, Ministry of . . . . . . . | Tomlinson, George<br>Maud, Sir John | Minister<br>Permanent Secretary |
| Food, Ministry of . . . . . . . . | Strachey, John<br>Liesching, Sir Percivale | Minister<br>Secretary |
| Foreign Office. . . . . . . . . . | *Bevin, Ernest<br>Sargent, Sir Orme | Secretary of State<br>Perm'nt Under-Sec'y |
| Fuel and Power, Ministry of . . . . | Gaitskell, Hugh T. N.<br>Fergusson, Sir Donald | Minister<br>Secretary |
| Health, Ministry of . . . . . . . . | Bevan, Aneurin<br>Douglas, Sir William | Minister<br>Secretary |
| Home Office . . . . . . . . . . | Ede, James Chuter<br>Maxwell, Sir Alexander | Secretary of State<br>Perm'nt Under-Sec'y |
| Information, Central Office of . . . | Fraser, Robert | Director General |
| Inland Revenue, Board of . . . . . | Gregg, Sir Cornelius | Chairman |
| Labour and National Service, Ministry of | Isaacs, George<br>Ince, Sir Godfrey | Minister<br>Permanent Secretary |
| Law Officers' Department . . . . . | Shawcross, Sir Hartley<br>Soskice, Sir Frank | Attorney-General<br>Solicitor-General |
| Lord High Chancellor's Department . | Jowitt, Viscount<br>Napier, Sir Albert | Lord High Chancellor<br>Permanent Secretary |
| Lord Privy Seal . . . . . . . . . | Addison, Viscount | |
| National Insurance, Ministry of . . . | Griffiths, James<br>Phillips, Sir Thomas | Minister<br>Permanent Secretary |
| Paymaster-General's Office . . . . | Marquand, Hilary A. | Paymaster-General |
| Pensions, Ministry of . . . . . . . | Buchanan, George<br>Parker, Sir Harold | Minister<br>Permanent Secretary |
| *Post Office . . . . . . . . . . . | Paling, Wilfred<br>Birchall, Sir Raymond | Postmaster General<br>Director General |
| Privy Council Office . . . . . . . | Morrison, Herbert<br>Leadbitter, Sir Eric C. E. | Lord President<br>Clerk of the Council |
| Scientific and Industrial Research, Department of . . . . . . . . | Morrison, Herbert<br>Appleton, Sir Edward | Pres. of the Committee of Council<br>Secretary |
| Scottish Office. . . . . . . . . . | Woodburn, Arthur<br>Milne, Sir David | Secretary of State<br>Perm'nt Under-Sec'y |
| Stationery Office . . . . . . . . | Scorgie, Sir Norman | Controller |
| Supply, Ministry of . . . . . . . . | Strauss, George Russell<br>Rowlands, Sir Archibald | Minister<br>Permanent Secretary |
| Town and Country Planning, Ministry of . . . . . . . . . . | Silkin, Lewis<br>Sheepshanks, Sir Thomas | Minister<br>Permanent Secretary |
| Trade, Board of . . . . . . . . . | Wilson, James<br>Woods, Sir John H. E. | President<br>Permanent Secretary |
| Transport, Ministry of . . . . . . . | Barnes, Alfred<br>Jenkins, Sir Gilmour | Minister<br>Secretary |
| Treasury . . . . . . . . . . . . | *Attlee, Clement<br>*Cripps, Sir Stafford<br>Bridges, Sir Edward | First Lord<br>Chancellor of the Exchequer<br>Permanent Secretary |
| War Damage Commission . . . . . | Eve, Sir Malcolm Trustram | Chairman |
| War Works Commission . . . . . . | Eve, Sir Malcolm Trustram | Chairman |
| War Office. . . . . . . . . . . | *Shinwell, Emanuel<br>Speed, Sir Eric B. B. | Secretary of State<br>Perm'nt Under-Sec'y |
| Works, Ministry of . . . . . . . . | Key, Charles<br>Emmerson, Sir Harold | Minister<br>Permanent Secretary |

*See separate article.

**Government Expenditures and Government Receipts:** *see* BUDGET, NATIONAL.

**Government Printing Office:** *see* PRINTING OFFICE, U.S. GOVERNMENT.

**Governors and Premiers, British:** *see* BRITISH EMPIRE.

**Grain:** *see* BARLEY; CORN; OATS; RICE; RYE; WHEAT.

**Granite:** *see* STONE.

**Grapefruit:** *see* FRUIT.

**Grapes:** *see* FRUIT.

## Graphite.

Graphite production is rather widely distrib
with significant outputs in at least a dozen
ferent countries. The United States output is relatively
and the bulk of the supply is obtained by imports. The sa
data on the production and supply of natural graphite i
United States are as follows, in short tons:

| | 1942 | 1943 | 1944 | 1945 |
|---|---|---|---|---|
| Production . . . . . . . . . . . . | 7,120 | 9,939 | 5,408 | 4,888 |
| Shipments. . . . . . . . . . . . . | 7,253 | 9,597 | 5,768 | 5,334 |
| Imports. . . . . . . . . . . . . . | 43,752 | 28,713 | 26,053 | 36,132 |
| Flake . . . . . . . . . . . . . | 6,031 | 5,311 | 6,191 | 2,883 |
| Lump, chip, dust . . . . . . . . . | 4,152 | 1,012 | 1,568 | 5,207 |
| Amorphous . . . . . . . . . . . | 33,569 | 22,390 | 18,294 | 28,042 |
| Mexico. . . . . . . . . . . . . | 23,933 | 21,679 | 17,269 | 25,879 |
| Ceylon . . . . . . . . . . . . . | 13,209 | 480 | 1,688 | 2,166 |
| Madagascar . . . . . . . . . . . | 5,850 | 5,655 | 6,271 | 6,665 |
| Exports. . . . . . . . . . . . . . | 4,095 | 3,010 | 2,230 | 1,308 |

The graphite industry in the United States was never he
and even under war demand operated only with conside
difficulty. Peacetime outputs were negligibly small and
outputs covered only a fraction of the demand. While the
output was greater than in 1945, it was much less than in 1
and in addition shipments lagged well behind production.

(G. A. R

**Gravel:** *see* SAND AND GRAVEL.

## Gray, Carl R., Jr.

(1889– ), U.S. railway exec
and administrator of veterans' af
was born on April 14 in Wichita, Kan., and was educate
the University of Illinois. He worked for several railr
until the U.S. entry into World War I. He joined the arm
1917, and was mustered out in 1919 with the rank of lieute
colonel, after which he worked for Montgomery Ward and
eral other midwest firms in a managerial capacity until
when he became an industrial manager for the Chicago
North Western railway. By 1937 he was an executive
president of the Chicago, St. Paul, Minneapolis and Omaha

He was called into the armed forces in 1942 and the
lowing year went overseas to take charge of military tr
portation in the European theatre. In Sept. 1945, he was
vated to the rank of major general and made director ge
of the military railway service, European theatre. With
war over, he was relieved of duty in Feb. 1946 and returne
his old civilian post until Nov. 21, 1947, when Pres. Harr
Truman announced that Gray had accepted the governm
post of administrator of veterans' affairs.

**Gray Markets:** *see* BLACK MARKETS.

**Great Books:** *see* HUTCHINS, ROBERT MAYNARD.

## Great Britain & Northern Ireland, United Kingdom of.

An independent kingdom in no
western Europe, the United K
dom comprises the main island of Great Britain, with nume
smaller islands off the English and Scottish coasts, and the
northeastern counties of Ireland. It is a constitutional m
archy, with a king and parliament of two houses, the house
lords consisting of about 800 hereditary peers, 24 spiritual pe
16 Scottish representative peers, a number of Irish represe
tive peers (in 1947, 8; vacancies no longer filled) and a
life peers who have held high judicial office; and the house
commons, numbering 640 members, elected by universal
frage. Area: 93,371 sq.mi. (excluding Channel Islands, 75 sq.m

le of Man, 221 sq.mi.); pop. (est. June 30, 1947, members : the armed forces excluded): 48,367,000; England and Wales 2,006,000; Scotland 5,022,000; Northern Ireland 1,339,000. ap.: London (pop. est. June 30, 1947): city and metropolitan olice districts 8,244,370; city and metropolitan boroughs only, 862,000. Chief towns: Glasgow (June 30, 1938) 1,131,500; irmingham (est. 1945) 1,001,600; Liverpool (est. 1939) 864,- 00; Manchester (est. 1945) 624,300; Sheffield (est. 1938) 520,- 00; Leeds (est. 1938) 494,000; Edinburgh (June 30, 1946) 53,100; Belfast (Jan. 1, 1939) 443,500; Bristol (est. 1938) 15,000; Hull (est. 1938) 318,700. Language: English is almost niversally spoken, but in Wales (according to the 1931 census) % of the population spoke Welsh only and 31% spoke both nguages; in Scotland 15% spoke Gaelic only and 2.7% spoke oth languages; in the Isle of Man 528 spoke English and lanx. Religion: National Episcopal established church in ngland, Presbyterian established church in Scotland. King: eorge VI; prime minister: Clement R. Attlee.

**History.**—The year 1947 was one of repeated disappoint- ients and steady perseverance, introduced by a winter of excep- onal cold aggravated by a breakdown in fuel and electricity upplies. It ended on a note of almost unrelieved austerity. upplies to the home consumer were cut to the minimum as a esult of the virtual exhaustion of the nation's dollar resources, nd an energetic production drive was initiated. All political arties were as one in demanding a return to the "Dunkirk pirit" of sacrifice and in promising the country a long period f hard exertion and small reward. The marriage of Princess lizabeth to Prince Philip, duke of Edinburgh, on Nov. 20, hough celebrated with restrained festivity, came as a welcome onic to the public spirits and was an occasion of joy through- ut Britain.

*The Dollar Crisis.*—On Feb. 22 the government issued a Vhite Paper on the economic state of the country. At the end f 1946 Britain was exporting at the rate of about 115% of the 938 level and importing at the rate of about 70%. Neverthe- ess, the adverse balance of trade, principally because of the lmost complete disappearance of invisible exports, amounted o £450,000,000. In 1947 imports were to be increased to be- ween 80% and 85% of the 1938 level. The government set an xport target of 140% of the 1938 level to be achieved by the nd of 1947. On March 27 the prime minister announced that n interdepartmental planning staff would be formed under Sir Edwin Plowden as chief planning officer. His powers were con- ined principally to the collection and distribution of informa- ion.

During the year exports fell far short of the government's opes. During the first six months they never rose above 102% f the average quarterly volume for 1938, and in the third uarter they rose only to 114%. Meantime prices of U.S. raw aterials increased with the demand and the government's im- ort program proved far more costly than had been expected. British political commitments overseas were also a heavy bur- en. Finally, on July 15, Britain's commitment, under the erms of the Anglo-American loan agreement, to convert sterling t request into any currency specified by the holder, came into peration.

In May Hugh Dalton, the chancellor of the exchequer, re- ealed that Britain's war debts amounted to £3,000,000,000. The danger that these immense sterling assets would be with- rawn and converted into dollars made it necessary to conclude greements with the principal creditor countries, Argentina, Brazil, Egypt, India and Iraq. These agreements provided in ll cases for the freezing of a large part of the accumulated terling assets, and for the release of small amounts for current xpenditure. They did not affect the obligation to convert sterling not frozen, and on July 15 a run on sterling began. Since the dollar shortage was universal most holders of sterling sought conversion into dollars. The government was accordingly forced on Aug. 20 to suspend the entire Anglo-American loan agreement, including the convertibility clause. Out of £1,100,000,000, £1,000,000,000 were used up to Aug. 29, when the remainder was frozen. On Dec. 5 the remainder of the loan was made available to Britain.

LONDONERS queued up for coal rations in Feb. 1947. Lowered coal output, one of the greatest single factors in Britain's economic crisis, was further decreased by wildcat strikes in September

*New Economic Policy.*—On Aug. 13 a bill was passed enabling the government to extend the powers conferred by the Supplies and Services (Transitional Powers) act of 1945, to deal with the dollar crisis. On Sept. 29 Sir Stafford Cripps was appointed minister for economic affairs, with the duty of directing and coordinating the activities of the ministries concerned with production. On Oct. 7 Clement R. Attlee announced a complete reshuffle of his cabinet. From Aug. 6 onward new import cuts were announced, including a total suspension of imports of food, films and tobacco from the U.S., and new export targets were fixed. Britain was to aim at exporting at the rate of 143% of the average monthly volume of exports in 1938 by the middle of 1948, and at 164% by the end of 1948. The new program was intended to reduce the dollar deficit to £250,000,000 annually by the end of 1948. Raw materials were to be strictly rationed under a scheme which would give a high priority to the export industries. On Aug. 21 the minister of agriculture announced a plan for increasing home agricultural production by £100,000,000 by the year 1951–52.

*Trade Discrimination.*—In pursuit of the policy of nondiscrimination, laid down by the Anglo-American loan agreement, Britain agreed in August to the terms of the draft charter of the International Trade and Employment organization, and concluded a number of trade agreements embodying the most-favoured-nation clause. It was, however, possible for the government to divert trade, by means of bulk purchases, to the soft-currency countries, and ministers stressed that this policy was necessary until the dollar crisis was over. Early in September talks were held between commonwealth representatives in London. Dominion governments announced plans for saving dollars and increasing production in order to help Britain, and on Oct. 9 South Africa announced a loan of £80,000,000 in gold.

*Fiscal Policy.*—The first budget of 1947, introduced by Dalton on April 15, was balanced at £3,451,000,000, and showed a surplus of £269,633,000; but this was composed largely of nonrecurring assets (*e.g.,* sales of war material, etc.). The only direct dollar-saving expedient in the budget was an increase of 50% on the tobacco duty. By the autumn it was clear that a more stringent fiscal policy was necessary, and Dalton introduced an emergency budget on Nov. 12. Its chief purpose was to put some check upon inflation, by retaining the existing scale of subsidies of food and clothing, increasing the purchase tax on a large range of articles, raising the price of beer and spirits and doubling the profits tax. In October Sir Stafford Cripps revealed plans by which capital expenditure was to be cut by £200,000,000, so that labour and materials could be diverted into the export industries.

The day after introducing his supplementary budget, Dalton resigned from his position as chancellor of exchequer, and Sir Stafford Cripps, minister for economic affairs, was appointed to succeed him. This unexpected change was announced a few hours after Dalton had apologized to the house of commons for what he described as "a grave indiscretion" on his part. In answer to a question about a newspaper (the *Star*) forecast on the budget, he said that as he was entering the chamber to make his budget speech he replied to questions put to him by the lobby correspondent of that newspaper.

*Coal.*—On Jan. 1 the mines became national property under the Coal Industry Nationalization act of 1946. A long period of exceptionally cold weather in February and March disorganized the transport of coal, and stocks proved inadequate. On Feb. 10 the government suspended supplies of industrial electricity over a large part of England for about a fortnight. It was estimated that the breakdown of industry involved resulted in a loss of £300,000,000 in national production. On May 5 the five-day week in the mines promised by the government in 1946 came into operation. By the middle of October 159,000,000 long tons of coal had been produced, as compared with 155,000,000 in 1946. This left the nation about a week behind its target of 200,000,000 long tons for 1947. The weekly average figur output per manshift rose from 1.03 in 1946 to 1.11 in Oct. The net increase in the number of persons employed i mines was 23,100. On Oct. 14 the government's coal prod target for the six months (Nov. 1, 1947–May 1, 1948) w nounced as 101,250,000 tons, as compared with a producti 97,500,000 tons the previous winter. In August a protracte official strike in south Yorkshire pits revealed considerabl satisfaction with the administration of the Coal board eventually ended in the miners' favour. Further disputes out in Scotland and south Wales, and the government c ered the advantages of a greater measure of decentralizati the control of the mining industry. The target, however practically reached, the output for 1947 being 199,700,00 tons as compared with 191,790,000 in 1946. Throughout the Emanuel Shinwell, minister of fuel and power, was subject intense criticism from the opposition, until he left the ca on Oct. 7 to become minister of war.

*Housing.*—The original housing target of 240,000 was doned as a result of the coal crisis; 125,513 houses were pleted by Sept. 30 and 267,100 were under construction. government announced its intention to complete the latt soon as possible, but could set no new target because of c the import of timber.

*Palestine.*—On Feb. 14 the London conference betwee government and representatives of the Arab states ended i rejection of Ernest Bevin's proposals for a five-year transi British administration in Palestine, accompanied by the gra transfer of power to local and democratically elected assem The Jewish agency had refused to participate in the confer Faced with this deadlock the government referred the que to the United Nations assembly, which in May appointed a mittee of nine to report on the position in Palestine. The mittee presented a majority and a minority report to the as bly in September, the former recommending partition an latter the creation of a federal state in Palestine. The Je agency agreed in principle to partition but both proposals rejected by the Arabs. In a speech to the assembly on Sep Arthur Creech Jones, the British colonial secretary, annou Britain's intention to terminate the mandate and withdraw Palestine at the earliest practicable date. Speaking in the h of commons on Dec. 12, Foreign Secretary Bevin stated May 15, 1948, was the latest date Britain would accept fo surrender of the mandate. (*See* PALESTINE.)

*Commonwealth and Empire.*—On July 2 Attlee annou

BRITISH TRUCKS, used in carrying mail, are shown lined up at a London post office during the teamsters' strike which halted shipments of food and mail in Jan. 1947 at the dominions office would be renamed the commonwealth lations office. On June 25 the colonial secretary announced e creation of a colonial development corporation with borrow-g powers up to £100,000,000. One of its chief objects was to the encouragement of food production in the colonies. (*See* so BRITISH EMPIRE and separate articles.)

*Foreign Affairs.*—On March 4 an Anglo-French military alli-ce was signed at Dunkirk, pledging both countries to assist ch other in resisting German aggression and in preventing ermany from preparing for aggressive war. On Jan. 27 Bevin nounced the breakdown of the Anglo-Egyptian negotiations r the revision of the 1936 treaty, resulting from the failure of e two governments to agree on the meaning of the clause in e draft treaty which related to the Sudan. In September gypt denounced the 1936 treaty and appealed to U.N. to secure e immediate withdrawal of British forces. The U.N. Security ouncil failed to reach any decision and the dispute remained n the agenda.

The main preoccupation of British foreign policy during the ear was Germany. On April 17 Lord Pakenham was appointed ancellor of the duchy of Lancaster, with responsibility for ritish administration in Germany, and the control commission as incorporated in the foreign office. On Aug. 29 it was an-ounced that the British and U.S. authorities had decided to crease the level of steel production permitted in western Ger-any to 10,700,000 metric tons. The level agreed upon for the hole of Germany in 1946 was 5,800,000 tons. The Soviet nion persistently accused the western powers of trying to tablish a western German state under their protection. Bevin plied that no decision of this kind would be taken until every hance of reaching agreement on a central authority for Ger-any was exhausted.

Throughout the year Britain and the U.S. consistently pro-sted against undemocratic conduct by eastern European gov-rnments, and in September the U.S.S.R. protested to U.N. gainst "war-mongering" by Britain, the U.S., Turkey and reece. In July the British and French governments summoned European economic conference in Paris to assess Europe's eed for U.S. economic aid under the Marshall plan and to dis-uss plans for economic co-operation. The conference ended in he appointment of a series of technical committees. On Sept. 1 ach of the powers represented at the conference informed the .S. government of its needs. Pre-occupation with the imme-iate dollar crisis made it impossible to formulate any long-term lans for co-operation.

The winding-up of the Indian empire and the creation of the wo dominions of India and Pakistan (*qq.v.*) was attended by assacres in the Punjab so bloody as to obscure the relative ase with which the change had been brought about in the rest f the country.

*Parliament.*—The following important legislation was passed uring the year: a bill for the nationalization of the electricity ndustry; a bill for the nationalization of transport; a town and ountry planning bill giving the government and local authori-es increased power over the use to which land is put; a national ervice bill, imposing one year's compulsory national service on l men between the ages of 18 and 26; and a bill enabling a ubject to sue the crown. (T. E. U.)

**Education.**—In 1945–46: primary (up to 11 years): England and ales: departments maintained and assisted by local authorities 23,991, cholars 3,735,680; Scotland: schools 2,087, scholars 375,757; Northern eland: schools 1,649, scholars 186,664; secondary: England and Wales: hools 4,366, scholars 1,268,531; direct grant secondary schools 189, cholars 85,372; Scotland: schools 983, scholars 354,286; Northern Ire-nd: schools 76, scholars 21,021; universities (1945) students: England ,443; Wales 2,750; Scotland 10,571; Northern Ireland 2,663.

**Finance.**—Budget (est. 1947–48): revenue £3,451,000,000; expenditure ,181,367,000. Actual 1946–47: revenue £3,341,223,358; expenditure £3-7,345,955. Notes in circulation (Sept. 1947) £1,359,000,000. Public bt (internal and external, Dec. 31, 1946) £24,785,000,000. Gold and U.S. dollar reserves (June 1947) £591,000,000. Exchange rate (1947) £1=402.7 U.S. cents.

Table I.—*Estimated Revenue and Expenditure 1947–48*

Revenue

| | £ | £ |
|---|---|---|
| Income tax | 1,073,000,000 | |
| Surtax | 80,000,000 | |
| Death duties | 155,000,000 | |
| Stamp duties | 57,000,000 | |
| Profit tax and excess profits tax | 202,000,000 | |
| Other duties | 1,000,000 | |
| Total inland revenue | | 1,568,000,000 |
| Customs | 736,960,000 | |
| Excise | 634,040,000 | |
| Total customs and excise | | 1,380,000,000 |
| Motor vehicle duties | 50,000,000 | |
| Sale of surplus war stores | 95,000,000 | |
| Surplus receipts from certain trading services | 55,000,000 | |
| Wireless licences | 11,000,000 | |
| Crown lands | 1,000,000 | |
| Receipts from sundry loans | 21,000,000 | |
| Miscellaneous | 270,000,000 | |
| Total other revenue | | 503,000,000 |
| Total revenue | | 3,451,000,000 |

Expenditure

| | | £ | £ |
|---|---|---|---|
| Interest and management of national debt | | 525,000,000 | |
| Payment to Northern Ireland exchequer | | 23,000,000 | |
| Miscellaneous consolidated fund services | | 8,000,000 | |
| Total | | | 556,000,000 |
| Supply services | | | |
| Defense | Army | 372,972,000 | |
| | Navy | 182,935,000 | |
| | Air | 211,482,000 | |
| | Ministry of Supply | 100,300,000 | |
| | Total | | 867,689,000 |
| Pensions | Army | 15,028,000 | |
| | Navy | 13,765,000 | |
| | Air | 2,518,000 | |
| | Total | | 31,311,000 |
| Civil | | | |
| | Central government and finance | 13,150,000 | |
| | Foreign and imperial | 61,832,000 | |
| | Home department, law and justice | 34,386,000 | |
| | Education and broadcasting | 183,976,000 | |
| | Health, housing, town planning and national insurance | 387,647,000 | |
| | Trade, industry and transport | 188,784,000 | |
| | Works, stationery, etc. | 79,211,000 | |
| | Pensions | 100,609,000 | |
| | Contribution to local revenues | 66,412,000 | |
| | Supply, food and miscellaneous services | 582,019,000 | |
| | Total | | 1,698,026,000 |
| Post office vote (excess over revenue) | | 2,688,000 | |
| Tax collection, customs and excise and inland revenue (including pensions £1,988,000) | | 25,653,000 | |
| Total | | | 28,341,000 |
| Total expenditure | | | 3,181,367,000 |
| Surplus of revenue over expenditure | | | 269,633,000 |
| | | | 3,451,000,000 |

**Trade, Communication, Agriculture.**—Roads (March 31, 1938): England and Wales (class I) 20,627 mi., (class II) 13,070 mi.; Scotland (class I) 6,632 mi., (class II) 3,967 mi.; Northern Ireland (class I) 1,273 mi., (class II) 1,933 mi. Railways (Dec. 31, 1938): Great Britain, track open to traffic excluding sidings 20,007 mi.; Northern Ireland, standard gauge 633 mi., narrow gauge 121 mi. Freight (1946) 285,373,900 short tons; passengers (1946) 1,221,600,000. Airways (1946): British Overseas Airways corporation: passengers carried 150,000; freight and mail ton mi. 59,365,788; British South American airways, passengers carried 5,041; freight and mail ton mi. 1,143,501; British European airways: (Aug.–Nov. 1946), passenger mi. flown 18,341,911; aircraft mi. 1,458,404. Shipping (excluding foreign-owned vessels on bareboat charter or requisition): vessels of 1,600 gross tons or more (Sept. 1947) 17,-

Table II.—*Overseas Trade 1939–47*

(In million £)

| | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | 1947 |
|---|---|---|---|---|---|---|---|---|---|
| Imports | 885.5* | 1,152.1* | 1,145.1 | 996.3 | 1,232.6 | 1,306.9 | 1,103.7 | 1,297.7 | 1,787.5 |
| Exports | 439.5 | 411.1 | 365.4 | 269.4 | 232.2 | 265.0 | 399.2 | 911.7 | 1,137.1 |
| Re-exports | 46.0 | 25.9 | 12.7 | 4.6 | 6.1 | 15.7† | 50.3 | 50.3 | 59.2 |

*Including munitions.
†Including relief to liberated countries.

Table III.—*Agricultural Crops and Acreage*

(In thousands)

| | 1939 | | 1946 | | 1947 | |
|---|---|---|---|---|---|---|
| Crops | Short tons | Acres | Short tons | Acres | Short tons | Acres |
| Wheat | 1,842 | 1,766 | 2,061 | 2,066 | 1,884 | 2,162 |
| Barley | 999 | 1,013 | 2,000 | 2,211 | 1,832 | 2,059 |
| Oats | 2,243 | 2,427 | 3,025 | 3,570 | 2,755 | 3,309 |
| Rye | 11 | 14 | 44 | 55 | 24 | 36 |
| Potatoes | 5,854 | 704 | 11,164 | 1,423 | 9,029 | 1,330 |
| Sugar beets | 3,942 | 345 | 5,004 | 437 | 5,064 | 395 |
| Turnips and swedes | 11,285 | 712 | 11,362 | 758 | 10,200 | 725 |
| Mangolds | 4,557 | 216 | 6,776 | 305 | 4,908 | 272 |
| Hops | 15 | 19 | 17 | 21 | 66 | 32 |
| Flax | 54 | 23 | 115 | 53 | — | — |

312,000 gross tons; vessels of 500–1,599 gross tons 878,000 gross tons; under construction (100 gross tons and more) 1,904,000 gross tons. Shipping (net tonnage with cargo, first eight months of 1947): entered 1,182,000; cleared 1,261,000. Motor vehicles licensed (May 1947): cars 1,859,000; cycles and tricycles 469,000; buses, coaches and taxis 108,600; tram cars 5,800; vans and lorries 578,000; general haulage tractors 2,800; other goods vehicles 5,300; agricultural vans and trucks 32,800; agricultural tractors and engines 160,200; vehicles exempt from duty 70,400; total 3,292,000. Wireless receiving set licences (May 1947): radios 10,782,000, television 18,850. Telephone (March 1945): exchanges 5,574; call offices 52,169; telephones 3,888,626. Livestock on agricultural holdings (June 1947): cattle 9,559,000; sheep 16,754,000; pigs 1,629,000; poultry 69,900,000.

**Table IV.—*Commodity Production***

(In thousand short tons)

| Product | 1938 | 1945 | 1946 | 1947 |
|---|---|---|---|---|
| Coal | 253,518 | 203,840 | 212,343 | 214,805 |
| Iron ore* | 13,269 | 15,900 | 13,628 | 12,172 |
| Steel | 11,648 | 13,220 | 14,792 | 13,978 |
| Aluminum (virgin) | 25.8 | 35.7 | 35.2 | 32.1 |
| Superphosphate | 476 | 1,016 | 1,077 | 1,073.8 |
| Wool | 55 | 40.8 | 43.4 | 36.2 |
| Sea fisheries | 1,172 | 550 | 996 | 1,086.2 |
| Beef and veal | 681 | 617 | 630 | 564.9 |
| Mutton and lamb | 239 | 151 | 166 | 128.1 |
| Pork, bacon and ham | 367 | 136 | 128 | 82.1 |
| Butter | 22.7 | 8.7 | 12.0 | 7.6 |
| Cheese | 48 | 25 | 27.9 | 18.6 |
| Margarine | 233 | 455 | 369 | 393.1 |

*Average metal content 30%.

(*See* also BUSINESS REVIEW.)

**Great Lakes Traffic:** *see* CANALS AND INLAND WATERWAYS.

**Greece.** A kingdom in the southern part of the Balkan peninsula. Area (without Dodecanese): 50,147 sq.mi. (41,328 mainland); pop. (Oct. 1940): 7,344,860; (est. Dec. 31, 1946): 7,150,000. Chief towns (1940 census): Athens (cap. 481,225); Peiraeeus (205,404); Salonika or Thessalonike (226,147); Patras (79,570); Volo (54,919). Languages (1940 census): Greek 7,065,716; Turkish 133,671; Macedonian Slav 99,946. Religions (1940 census): Greek Orthodox 7,090,192; Roman Catholic 29,136; Moslem 134,722. King: Paul I; prime ministers: Demetrios Maximos (Jan. 24–Aug. 29, 1947); Constantin Tsaldaris (Aug. 30–Sept. 7, 1947); Themistocles Sophoulis.

**History.**—The outstanding events during 1947 were the enunciation in the United States of the Truman doctrine and the publication of the report of the United Nations Balkans Investigation commission. The consequence of these two events was the transfer from Great Britain to the U.S. of the main burden of financial aid to Greece. Great Britain continued to maintain in Greece a military mission for the training of the Greek army and a police mission for the training of the police and gendarmery. The U.S. mission for aid to Greece advised the Greek government on all economic matters and supervised the spending of the sums voted by the U.S. congress for general relief, reconstruction and the equipment of the Greek forces. A military mission headed by Maj. Gen. William C. Livesay cooperated with the Greek army command in an advisory capacity.

The U.N. Balkans Investigation commission, established by the resolution of the Security council Dec. 19, 1946, assembled in Athens on Jan. 29, 1947, and subsequently visited various places and examined a large number of witnesses in Greece, Yugoslavia, Bulgaria and Albania, proceeding on April 7 to Geneva, Switzerland, where it drafted its final report. This report, which was submitted to the Security council on June 25, was approved by eight countries (Australia, Belgium, Brazil, China, Colombia, Great Britain, Syria and the U.S.) but rejected by the U.S.S.R. and Poland. France, while accepting the facts as stated in the majority report, did not subscribe to the conclusions on the ground that the drawing of conclusions was a matter for the Security council. The findings of the majority on the commission were: (1) that Yugoslavia, and to a lesser extent Albania and Bulgaria, supported the guerrilla warfare in Greece; (2) that Yugoslavia had established a camp at B
where Greeks were subjected to political indoctrination ai
at overthrow of the Greek government, and were sent ba
Greece to join the rebels after receiving political and mil
training; (3) that Albania had established a camp at E
where political and military training for Greek refugees
provided; (4) that Bulgaria facilitated the crossing of fro
by Greek guerrillas, provided hospital facilities for them
supplied them with arms; (5) that Yugoslavia and Bul
openly supported a Macedonian separatist movement (th
port qualified this finding with the comment that Greek p
cution of Macedonian Slavs provided "a fertile breeding gro
for such a movement). The report blamed both sides fo
merous minor violations of frontiers and made a numb
recommendations, including the establishment of a perma
commission in the troubled area.

In the discussion of the report by the Security council
U.S. resolution supporting the implementation of the com
sion's recommendations was finally put to vote on July 29.
countries supported it, with Poland and Russia voting again
The U.S. reaction to this use of the veto by the U.S.S.R.
the inclusion of the Greek question on the agenda of the
general assembly, which on Oct. 21 adopted (by a vote of
6, with 10 abstentions) a U.S. resolution calling upon Alb
Bulgaria and Yugoslavia on the one hand and Greece on
other to: (1) establish normal diplomatic and good-neighbo
relations among themselves; (2) establish frontier conven
for the control of frontiers and the pacific settlement of
tier disputes; (3) co-operate in the settlement of prob
arising from the presence of refugees in the four states,
(4) study the practicability of concluding agreements for
voluntary transfer of minorities. This resolution also prov
for the establishment of a commission with headquarter
Salonika to observe compliance by the four governments
cerned with the recommendations, and to assist these gov
ments in the implementation of such recommendations.
commission held its first meeting in Athens on Nov. 25.

In the economic sphere, active U.S. interest in Greek af
was initiated by the dispatch to Greece in January of a mis
headed by Paul Porter to examine economic conditions
erally, and to consider what measures were necessary for re
struction of the country. On March 3, the Greek govern
sent to the U.S. government an urgent appeal for financial
and for equipment for the armed forces. On March 12,
speech to a joint session of congress, President Truman
nounced that "Greece must have assistance if she is to bec
a self-supporting and self-respecting democracy. The Un
States must supply that assistance." For this reason, Presi
Truman asked congress to grant $350,000,000, and to give
mission for U.S. military and civil personnel to go to Gre
President Truman's proposal was approved by congress
May 22; a U.S. mission headed by Dwight P. Griswold arr
in Athens on July 14, 1947, and took up the task of the adm
tration of this aid. A number of agreements were subseque
signed between the mission and the Greek government r
lating execution of the aid program. On Nov. 17 it was
nounced that a joint U.S.-Greek general staff would be for
to direct military operations against the rebels and that
officers would be attached in an advisory capacity to G
operational units.

The political situation in Greece went through a numbe
significant developments during the year. On Jan. 24, the
clusively Populist government of Constantin Tsaldaris gave
to a broad-based coalition under the premiership of Deme
Maximos in which all the other parties represented in the ch
ber of deputies were included with the exception of the Lib

bove: TROOPS building military emplacements at a Greek army outpost established ar the Bulgarian border during the summer of 1947

ght: CAPTURED GUERRILLAS, under surveillance by troops of the regular Greek my, being transported to Kozànē in western Macedonia, after large-scale raids at revena in Aug. 1947

elow, left: ATHENIAN WOMEN waiting outside Parliament house for latest casualty sts from the fighting areas of northern Greece in July 1947

elow, right: GREEK RESIDENTS of Levkohori, near the Bulgarian border, amid the bble of the eighth raid on their village by guerrilla bands in 1947

party, which remained in opposition. This opposition broke up on Aug. 29 as the result of dissensions between the co-operating parties, and was succeeded for a brief period by another one-party government under Tsaldaris. The Liberal leader, Themistocles Sophoulis, was eventually prevailed upon by the British and U.S. representatives in Athens to agree to participate in the government, and on Sept. 7 a Liberal-Populist coalition government was formed under the premiership of Sophoulis, with Tsaldaris as deputy premier and minister of foreign affairs.

On Sept. 14, this government enacted a new amnesty act by which any rebel surrendering to the authorities within 30 days would not be prosecuted for offenses committed by him in so far as they related to rebellion or sedition, and would be immediately set free. The response to this amnesty, which was subsequently extended for a further month to Nov. 14, was not encouraging—the total number of persons who gave themselves up amounted to 9,066—and on the expiry of the amnesty the government announced that vigorous military measures would be taken to suppress the rebellion.

Despite the improved political situation, the internal state of Greece deteriorated considerably during the year from the point of view of security and public order. Guerrilla activities increased, and several large-scale attacks were launched by armed bands on many frontier towns. The most serious of these attacks was made on July 13 by a band of about 1,500 rebels which entered Greek territory from Albania and attacked Konitsa. The attack was eventually driven back across the frontier by Greek armed forces sent to that area. At the same time the Athens police found evidence of a communist plot to create disturbances in the capital, and a large number of arrests were made, about 15,000 people being deported to the Aegean Islands as a preventative measure under the emergency powers accorded to the government by parliament. In October an emergency press law was passed giving the judicial authorities power to order the suspension of any newspaper inciting to rebellion; the communist newspapers *Rizospastis* and *Eleftheri Ellada* were suspended.

On Dec. 24 a broadcast proclamation (coming, according to the Greek government, from Belgrade) announced the formation of the "provisional democratic government of Free Greece" with Gen. Markos Vafeiades as prime minister. The aim of the rebel government was to achieve a "speedy liberation of the country from foreign imperialists and their lackeys." All the ministers of the rebel government were known members of the Greek Communist party. On Dec. 26 the Greek government outlawed the Communist party and all its organizations; about 500 communists were arrested in the Athens area.

On April 1 King George II died suddenly of a heart attack and was succeeded by his brother Paul. The smoothness with which the change of reign was effected showed that the question of the monarchy was generally regarded as having been finally settled.

In October the peace treaty with Italy was ratified, with effect as from Oct. 28. The ratification marked the formal incorporation of the Dodecanese Islands (*q.v.*) into the kingdom of Greece. The peace treaty with Bulgaria was also ratified by Greece in October. (A. A. P.)

**Education.**—(1938) Primary schools 8,339, scholars 985,018; high schools 407, scholars 92,687; universities 2, students 7,230; institute of technology, students 521.

**Banking and Finance.**—Budget (est. April 1, 1946–March 31, 1947): revenue Dr.1,401,783,000,000; expenditure Dr.1,576,714,000,000; (est. April 1, 1947–June 30, 1948, 15 months) revenue Dr.2,753,000,000,000; expenditure Dr.2,960,000,000,000. Bank note circulation rose from Dr.364.000,000,000 (April 1946) to Dr.779,000,000,000 (April 1947). Exchange rate (official): $1 = 5,000 drachmas.

**Trade and Communications.**—(1946) Imports Dr.435,444,000,000; exports Dr.201,174,000,000. Total amount of United Nations Relief and Rehabilitation administration supplies (July 1, 1945–June 30, 1947) $350,500,000 ($46.7 per head of population). Railways open to traffic
(Dec. 31, 1946) 1,388 mi. Motor vehicles licensed (trucks, Dec. 31,
10,450. Gross tonnage of shipping (Dec. 1946) 556,601. Greece
43,000 telephones, 8,694 mi. of telegraph lines and 45,000 radi
ceiving sets in 1946.

**Agriculture.**—Production in thousands of short tons (1946):
848; rye 55; barley 176; oats 110; maslin 44; maize 176; ric
pulses 57; potatoes 168; sesame seed 3.3; cotton 44; tobacco 44;
oil 90; currants and raisins 88. Livestock pop. (Dec. 1946): horses
000; mules 115,000; cattle 600,000; sheep 6,000,000; goats 3,13
pigs 400,000; donkeys 325,000; water buffalo 56,000; poultry 7,50

### Green, William

(1873– ), U.S. labour leader, was
March 3, in Coshocton, O. He spent
of his youth as a miner, and at the age of 27 was a subdis
president of the United Mine Workers of America. He
elected president of the American Federation of Labor,
Under Green's administration, the A.F. of L. remained pred
nantly a crafts union. When the Committee for Industrial
ganization (later known as the Congress of Industrial Orga
tions), a group of ten unions affiliated with the A.F. o
opened its campaign to establish industrial unions, Green
fused to sanction the operation. This led the C.I.O., then u
the guidance of John L. Lewis, to break away from the pa
body in 1937.

During World War II, Green abided by the promise he
made to President Franklin D. Roosevelt to observe la
peace for the duration. After the war, he took violent ex
tion to the "monstrous" Case strike-control bill in 1946
to the Taft-Hartley law in 1947. He called the latter la
"tragic mistake" (July 9) and predicted that labour would
the Republicans their "worst defeat" in the 1948 preside
elections if Robert A. Taft were the party's candidate. On S
1, 1947, Green urged all U.S. workingmen to defeat in the
federal elections all candidates with an antilabour record
implement this program, the A.F. of L. organized (Dec
Labor's Educational and Political League, a group simila
C.I.O.'s Political Action committee, and supported by volun
contributions. On Oct. 13, Green rejected C.I.O. Presi
Philip Murray's bid for joint political action, asserting
agreement on "organic unity" must come first.

### Greenland.

The world's largest island (839,782 sq.mi., al
705,000 sq.mi. covered by an ice cap), in
North Atlantic ocean, northwest of Iceland. A Danish pos
sion, it came under temporary United States protection in
Capital, Godthaab. A population of 21,066 (Dec. 31, 1944
scattered in small settlements on the west coast, with a
1,000 on the east coast; 492 in all are listed as Europ
(largely Danes) and the rest are native Greenlanders. S
of the governors are Godthaab in the south and Godhavn in
north.

**History.**—The year 1947 was filled with rumours and de
and suspicions regarding Greenland. It was rumoured that
United States wanted to buy the island, and that the Da
request for discussion with Norway of their 1924 Greenl
treaty was related to the question of sale to the United Sta
Copenhagen denied that there had been any such discussion,
Washington denied it. It was rumoured that uranium had
found in Greenland, and the rumour was given some sig
cance because it was mentioned by Comm. Donald B. Mac
lan, veteran Greenland explorer who had led his 25th trip to
far north during the summer. It was rumoured that the Un
States was establishing a new defense base in Greenland;
state department denied it.

Only a few facts were clear. The basic fact was that
arctic was of primary strategic importance in the new air
and in a time of Russian-U.S. tension. The communists bot
Russia and in Denmark were forcing discussion of Greenla
and of the United States-Danish treaty of 1941 by which

nited States had assumed certain responsibilities in the island, ined certain rights and protected Danish sovereignty there ring World War II. In May a request was made by Denmark the United States for talks about a revision of this treaty. his reply Secy. of State George C. Marshall renewed a pledge willingness to consider revision, and stated specifically: Greenland remains of the greatest importance as a link in the fensive system of the United States and of the Western emisphere." Experiments of an undisclosed nature were conicted on the island by the United States during the summer. mid-October the Danish foreign minister, Gustav Rasmussen, rived in the U.S. to discuss withdrawal of U.S. troops. On ov. 17 Eske Brun, of the Greenland office in Copenhagen, anounced that U.S. soldiers had evacuated their air base at ngmassalik, Greenland.

**Trade and Finance.**—Greenland's most important export is cryolite, ich is used in the manufacture of aluminum; the world's only large mmercial mine is in southern Greenland (62,231 short tons exported 1939). There are 16,000 sheep and a meat factory at Julianehaab, and ring 1947 about 350,000 kr. was spent to build a shrimp plant there; so 120,000 kr. to improve salt fishing. One wooden ship was in service tween Greenland and Denmark, and a steel ship was being built, to be ady in 1949. The Greenland administration was allowed 5,000,000 kr. the tentative Danish budget for 1948–49. (1 krone = 20.877 U.S. nts in 1947.) (F. D. S.)

**renada:** *see* WINDWARD ISLANDS.

**rindstones:** *see* ABRASIVES.

**riswold, Dwight Palmer** (1893– ), U.S. government official and politician, as born on Nov. 27 in Harrison, Neb. After having been raduated from the University of Nebraska in 1914, he worked his father's bank. Griswold was an army captain during World War I, serving in the Mexican border patrol. After the ar, he returned to banking until 1922 when he became editor nd publisher of the *Gordon Journal*, a weekly, in Gordon, Neb. 1940, running on the Republican ticket, he was elected govrnor of Nebraska. He was twice re-elected, but lost his party's omination for a fourth term in 1946. He then went to Germany as civilian director of internal affairs and communications the U.S. zone.

On June 5, 1947, Pres. Harry S. Truman named Griswold to ead the Greek aid program. Arriving in Greece on July 14, he et to work immediately to patch up the Greek economy. But his task was complicated by political dissension in the country. However, after the formation on Sept. 7 of a Liberal-Populist oalition government headed by the aged Themistocles Sophouis, Griswold stepped up the flow of supplies to the Greek army nd also gave strong support to the Sophoulis policy of conciliation and amnesty for guerrillas.

However, Griswold was not entirely satisfied with the Greek rmy's conduct of the war against the guerrillas as was evilent in his statement of Nov. 7 that the regular army had reeived sufficient arms and matériel to end the rebellion.

**Gromyko, Andrei A.** (1909– ), soviet diplomat, was born July 5 in the village of Stayre Gromyki in the Gomel region of the U.S.S.R. He graduated rom the Minsk Institute of Agricultural Economics in 1934, nd in 1939 he became counsellor in the U.S.S.R. embassy in Washington. Gromyko succeeded Maxim Litvinov in Aug. 1943 s soviet ambassador to the United States and also to Cuba. He headed the U.S.S.R. delegation at the Dumbarton Oaks conference in 1944, attended the San Francisco conference in 1945 nd was named chief soviet delegate to the United Nations rganization.

One of the U.N.'s "stellar" attractions, by virtue of his steadast role as the "lone dissenter," Gromyko staged his celebrated walkout (March 27, 1946) from the council sessions during the Iranian debate. On April 10, he was made permanent soviet delegate to the security council, and on Dec. 29 it was disclosed that he had been promoted to deputy foreign minister.

In 1947, Gromyko took issue with the U.S. plan for international control of atomic energy, contending (March 5) that it was directed against the independence of other nations. On May 19, he said the U.S. monopoly in atomic energy development was an "illusion" and predicted that other nations in time might also achieve dominance in production of atomic weapons.

He was equally vehement in his denunciations of attempts made by the western powers to limit use of the veto in the U.N. security council. He also opposed the so-called Truman doctrine, warning Sept. 27 that U.S. policy in the Balkans might lead to a collapse of the United Nations, and the U.S. "Little Assembly" plan, declaring on Oct. 17 that "the word compromise is not in the Soviet glossary on this issue."

**Guadeloupe:** *see* FRENCH OVERSEAS TERRITORIES.

**Guam.** Largest island of the Marianas group in the Pacific, Guam is in 13° 26′ N. lat. and 144° 39′ E. long. and is about 5,100 mi. from San Francisco and 1,350 mi. from Yokohama. Area, 206 sq.mi.; pop. (1947), 24,139; military and civil service personnel totalled 36,388. Capital, Agaña (10,004).

Guam is administered by the U.S. navy. The governor is a naval officer appointed by the president of the United States. The congress of Guam, a popularly elected two-house legislature, has advisory powers only. Natives serve as associate justices of the court of appeals and as commissioners of municipalities. Guam has unorganized territorial status, and the native Chamorros are nationals of the United States. Rear Adm. Charles A. Pownall was governor in 1947. In May 1947 a civilian committee appointed by the navy department recommended citizenship for the natives and advised that consideration be given toward establishment of a civilian agency for administration of Guam and other Pacific possessions.

**Industry and Trade.**—Copra production, formerly the main industry, had not recovered in 1947 from heavy damages suffered during World War II. Fruits, vegetables and grains are grown for home consumption. All manufactured products are imported from the United States. Of the natives 25% were employees of the U.S. government in 1947. The 587 small business enterprises owned by Guamanians had gross sales of $938,600 in 1946.

**Finance and Education.**—Government receipts from May 31 through Dec. 31, 1946, amounted to $178,261.87, while government pay rolls for the last six months of 1946 aggregated $1,117,026.40.

Of the children of school age 95% (est.) were enrolled in school. There were 19 elementary schools, 1 junior high school and 1 senior high school. A small number of natives are sent to the United States at the expense of the naval government for higher education.

Little progress was made in the reconstruction of towns and villages damaged by the war. Plans called for improved housing and modern sanitation. Claims for war damages totalled $7,859,770.50.

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**Guatemala.** A Central American republic bounded by Mexico, British Honduras, Honduras and El Salvador. Area: 45,452 sq.mi.; pop. (1945 est.), 3,546,624, of whom more than half were Indians, the remainder largely of mixed blood. Capital, Guatemala City (1946 est. pop.), 225,000. Other urban centres (1940 census) are: Antigua Guatemala (12,601), Chiquimula (10,868), Comalapa (10,461), Mazatenango (14,227), Puerto Barrios (15,784), Quezaltenango (33,538) and Zacapa (14,443). Language: Spanish; religion: predominantly Roman Catholic. President in 1947: Juan José Arévalo.

**History.**—The Arévalo administration weathered a stormy year in 1947 by resorting to drastic political measures. The cabinet was reorganized twice, in January and in June, because of ministerial resignations; a public demonstration in March protested the new electoral law (under which the administration secured majorities in the January congressional elections) and an attempt to overthrow the government in September was discovered and immediately crushed. All opposition was effectively throttled as the result of new legislation restricting political activities considered by the government as dangerous to public security.

The ministry of national defense, on March 4, cancelled all licences for carrying firearms. The alien act was modified on March 16 to give the president increased authority to deport foreign agitators; and a new law, effective April 30, imposed stringent censorship on public expression through the press and radio. The death penalty, affecting persons attempting to overturn the government, was abolished by congress on Sept. 13. On Sept. 17, however, constitutional liberties affecting freedom of the press and assembly were suspended by presidential decree when an alleged plot against the existing administration was discovered. Two soldiers and a civilian were arrested. Charges that the Communist party was behind the attempt were denied in October by President Arévalo.

In its foreign affairs Guatemala accepted a British proposal to submit the dispute over British Honduras (Belize) to the jurisdiction of the International court, but on condition that the case be judged on its equity rather than on its purely legal merits. The new government in Nicaragua was denied recognition in June, and in July diplomatic relations were suspended with the Trujillo administration of the Dominican Republic. Ratification of an agreement with El Salvador for the construction of an international bridge over the Paz river (signed May 25, 1946) was published on March 18. Fifteen hundred Salvadorean families were invited by President Arévalo to settle on and develop assigned farm lands in Guatemala.

**Education.**—The government's program of expanding educational facilities (2,784 schools enrolled 152,274 students in 1943) continued in 1947 with the extension of compulsory military training from one to two years. The first year was being used mainly in teaching draftees to read, write and speak Spanish. The University of San Carlos had an enrolment of 1,620 students under 250 professors in 1945. For public education during the fiscal year 1946–47, the national budget allocated $3,609,821. There were 39 motion picture theatres in the country with a total seating capacity of 16,500 as of Jan. 1, 1947.

**Finance.**—The monetary unit is the quetzal, maintained at par with the U.S. dollar. The budget for 1946–47 estimated revenues at $28,125,174, including a treasury surplus of $625,000 from the previous year and a reserve of $1,000,000 in U.S. war bonds. As of Jan. 1, 1947, the public debt was $2,186,735, while the margin of income over expenditures during the first three months of 1947 was $2,469,111.

**Trade and Resources.**—Exports for 1946 totalled $36,678,000 ($30,436,000 in 1945), and imports were valued at $36,201,000 ($23,349,000 in 1945). About three-quarters of the trade was with the United States. The leading shipments in 1946 were: coffee (829,272 bags of 132 lb.), bananas (10,649,313 stems), chicle (3,296,000 lb.), cabinet woods, chiefly mahogany (2,250,000 bd.ft.), ordinary woods, chiefly pine (3,650,000 bd.ft.), cinchona bark (495 tons), essential oils, chiefly citronella and lemon grass, (327,431 lb.). Livestock in 1945 included 640,063 cattle, 365,912 sheep and 40,317 goats. Coffee production for the 1947–48 crop year was estimated at 1,080,000 bags. Permission for petroleum exploration in more than 1,200,000 ac. in Petén province was granted to a private company in July 1947.

**Communications.**—In 1945 railroad lines, mostly public, totalled 723 mi., and of the 4,800 mi. of highways, 2,400 mi. were improved. There were 2,373 automobiles, 322 buses and 2,016 trucks. In 1947 air transportation continued to expand, and the government laid plans for river traffic development. Rail transportation between Puerto Barrios and the interior bogged down, however, causing severe congestion in that port during the early months. There were 4,079 mi. of telegraph lines, 2,327 telephones and 8 government radio broadcasting stations serving about 5,000 receiving sets. (*See* also BRITISH HONDURAS.)

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**Guggenheim Memorial Foundation:** *see* SOCIETIES AND ASSOCIATIONS.

**Guiana, British:** *see* BRITISH GUIANA.

**Guiana, Dutch:** *see* SURINAM.

**Guiana, French:** *see* FRENCH OVERSEAS TERRITORIES.

**Guinea:** *see* FRENCH OVERSEAS TERRITORIES; PORTU COLONIAL EMPIRE; SPANISH COLONIAL EMPIRE.

**Gustavus V** (1858– ), king of Sweden, of whom graphical account will be found in the *En pædia Britannica,* ascended the throne in 1907 and long 1947 had attained the rank of Europe's oldest living mo In June he celebrated his 89th birthday and in December much ceremony, the 40th anniversary of his reign.

Gustavus was the grand old king, still interested in sp well as in statecraft (he hooked two 15-lb. pike on his day). On Jan. 26 the king's eldest grandson, Prince Gus Adolphus, 40, was killed in an aeroplane crash in Copenh Denmark. This prince's father, Crown Prince Gus Adolphus, is next in line for the throne, and after him, the prince's one-year-old son, Prince Carl Gustav (there are older sisters). The king's youngest brother, artist Prince E (82) died on Aug. 18 in Stockholm, Sweden—which left brothers: Carl (86), Oscar Bernadotte (88) and the king. (F. D.

**Gymnastics.** Already a veteran of two previous Oly games, Frank Cumiskey of Union City, advanced toward a third berth by winning the all-around c pionship in the A.A.U. gymnastic tournament. Cumis dominance led the Swiss Gymnastic society of Union Ci its 17th national team title with 56.5 points. The Acroth team from the University of Chicago finished second wit The nationals, held at Dallas, Tex., attracted 175 men an women entries and brought a new record of 3.4 seconds i 20-foot rope climb by Garvin E. Smith of Los Angeles college.

Helen Schifano of the Elizabeth, N.J., Turners dethr Philadelphia's Clara Schroth as the women's champion. scored 230.6 points to Miss Schroth's 225. (M. P. W

**Gynaecology and Obstetrics.** The use of caudal, dle block and block analgesias in obstetrics continued to have their advo during 1947, but their popularity seemed to be waning. Den as an obstetric analgesic and mild amnesic agent for the and second stages of labour continued to find new followe

The routine use of prenatal vitamin K to counteract bleeding tendency of the newborn was dealt a severe blo Edith L. Potter, who presented the seemingly justified co sion that no decrease in infant or foetal mortality coul expected to result from the routine administration of vitami to all women during labour.

Electrotherapy for various gynaecological and obstetrical ditions such as control of labour, treatment of cervical sten restoration of postpartum muscular tone, development o fantile uteri, etc., continued to have many advocates in fo literature, especially French. Few others, however, had f convincing reason to adopt these measures.

The toxaemias of late pregnancy, although occurring less frequently in most clinics, were often discussed during year. The most logical explanation for the decreased incid of late pregnancy toxaemias was better prenatal care; not the better medical management of pregnancies but also importance of proper diet was more generally understood the public. With reference to the aetiology of late toxaem the weight of evidence now pointed to a dietary deficiency, only during pregnancy but also during the years preceding p nancy. High protein and high vitamin (especially the B c plex) diet apparently plays a role in preventing and trea late toxaemias. This undoubtedly was not the last word seemed established as one of the major factors in toxaemias

General use of the antibiotics caused a further decrease in naternal mortality caused by infection. In spite of plasma and he availability of blood for transfusion, haemorrhage was the eading cause of maternal mortality in most statistics presented on this subject during 1947.

Meigs' syndrome, originally thought to be characteristic of ibroma of the ovary, was found also in association with other olid ovarian tumours. Cases were described with carcinoma (without pleural metastasis), granulosa cell tumour, thecoma and Brenner tumour. There was still no clear-cut knowledge of he mechanism involved, although there had been much conecture and experimental work on the problem.

The efficacy of penicillin in the treatment of syphilis in the pregnant woman rendered the use of the arsenicals and heavy netals obsolete. Mary S. Goodwin and J. E. Moore and others pointed out that the incidence of abortion in women under penicillin therapy was no greater than in clinic patients generally. The concentrated seven to ten day treatment program, n addition to a hitherto unsurpassed efficacy as agreed by yphiologists and pediatricians alike, had immeasurably greater value from a social and practical standpoint than did the old prolonged therapy.

M. E. Davis and Edith L. Potter demonstrated intrauterine espiration by injecting thorotrast into the amniotic fluid and lemonstrating it in the lungs of the foetus as found on X-ray. This supported the classic work of Franklin F. Snyder and Morris Rosenfeld on foetal respiratory movements.

Herbert Thoms, one of the leading exponents of external pelvimetry, had discarded his previous opinions and decided that even outlet digital measurements were unreliable. This, with his previous opinion that inlet measurements were often nisleading, suggested that no external digital measurement was of much value. He suggested a general pelvic survey including careful palpation and two flat X-ray films, one showing the birth canal from above, downward from which certain inlet and nidplane measurements may be determined, and a second film taken laterally, from which certain inlet, midplane and outlet neasurements may be obtained.

Major defects in congenitally anomalous babies born of mothers who suffered rubella (German measles) in the first three months of pregnancy were associated with only one constant ocus of anomaly, a hypoplastic adrenal cortex. This suggested but did not prove that the deficiency of adrenal cortex is responsible for all developmental anomalies secondary to maternal rubella. Other filterable virus diseases were being incriminated as a cause for congenital anomalies, but none with such frequency as rubella.

D. N. Danforth pointed out that the cervix is predominantly fibrous in nature, being composed of only about 15% smooth muscle, but the uterine tissue above the cervix is predominantly smooth muscle. He believed that it is this fibrous nature of the cervix which explains why it is refractory to stimuli which cause such tremendous growth and contractile response elsewhere in the same uterus.

Increased knowledge of the Rh factor and of the sensitivity of negative mothers to the antigen suggested to several workers that it might be possible to desensitize the mothers to this antigen. Experimental work in progress was not reported, but high hopes were held for favourable results.

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(P. T.)

## Gypsum.

Gypsum production is widely scattered in small amounts among approximately 50 different countries, but the United States produces nearly half the total and Great Britain, Canada and France account for more than another third. World production is estimated to have been 11,400,000 short tons in 1946, about the same as in 1937, as compared with a peak of 14,300,000 tons in 1929 and a war period low of 7,700,000 tons in 1945.

**United States.**—The basic data of the gypsum industry of the United States are shown in the following table in thousands of short tons.

*Data of Gypsum Industry in the U.S., 1940–46*

(Thousands of short tons)

| | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|---|
| Mine output | 3,669 | 4,789 | 4,698 | 3,878 | 3,761 | 3,812 | 5,629 |
| Imports | 1,405 | 1,348 | 394 | 231 | 342 | 509 | 1,457 |
| Supply | 5,104 | 6,136 | 5,092 | 4,109 | 4,104 | 4,320 | 7,087 |
| Sales | 4,632 | 5,760 | 4,953 | 4,186 | 3,838 | 3,987 | 6,381 |
| Crude | 929 | 1,321 | 1,458 | 1,234 | 1,056 | 1,148 | 1,641 |
| Industrial | 123 | 152 | 145 | 164 | 200 | 158 | 207 |
| Building | 3,580 | 4,287 | 3,360 | 2,788 | 2,582 | 2,681 | 4,532 |

Demand for gypsum was sharply increased in 1946 by the revival of building activity and the domestic production jumped to 18% above the war construction peak and failed to equal the 1925 record high by only a few thousand tons. The 1946 output advanced 48% over 1945 and 50% over the low of 1944. Imports expanded even more sharply, almost doubling in 1946, and exceeding the former 1929 high by 41%. The combined domestic output and imports gave an available supply which topped all previous records.

The building trades took 69% more gypsum in 1946 than in 1945 while sales of crude gypsum increased 43% and industrial gypsum 31%.

**Canada.**—Gypsum production more than doubled in 1946, increasing from 839,717 short tons in 1945 to 1,833,717 tons in 1946.

The rate of production continued to increase in 1947, the total through August being 1,480,973 tons. (G. A. Ro.)

## Haakon VII

(1872– ), king of Norway, of whom a biographical account will be found in the *Encyclopædia Britannica,* was born Prince Charles of Denmark, second son of Frederick VIII (and brother of Christian X). Upon the separation of Norway from Sweden he was elected king by the Norwegian storting (Nov. 18, 1905) and took the old Norse name of Haakon, and that of Olav for his son, the crown prince. Haakon married Maud (1869–1938), youngest daughter of King Edward VII of England.

As usual, King Haakon held himself in the background during 1947, but he worked diligently at the problems of reconstruction of Norway and was a steadfast rallying point for citizens of all parties. He received a royal visit in October from his nephew Frederick IX of Denmark and Queen Ingrid. In November, he journeyed to London for the marriage of Princess Elizabeth. Like many a simple citizen, he had his salary raised to help meet rising costs of living—from 700,000 kroner to 1,000,000 kroner (about $220,000). Haakon's 75th birthday (Aug. 3) was celebrated both in Norway and by Norwegians around the world; especially impressive was the festival arranged by the storting at famous Eidsvold in September. A popular contribution was taken to buy the king a yacht—but only after the king had indicated he would give the money to charity and the people demanded that this gift should be really for Haakon himself.

(*See* also NORWAY.) (F. D. S.)

**Haiti.** A West Indian republic occupying the western third of the island of Hispaniola or Haiti. Area, 10,748 sq.mi.; pop. (1941 est.) 2,719,000. Racial distribution is estimated to be 95% Negro and almost all of the remainder mulatto. An estimated 1,600 foreigners, approximately 575 of whom were North Americans, lived in the country in 1946. The capital is Port-au-Prince (pop. est., 125,000); other cities are Gonaïves (20,000), Les Cayes (15,000), Cap Haïtien (15,000), Jacmel (10,000), St. Marc (10,000), and Jeremie (8,000); only about 10% of the total population is urban. French is the official language, but a patois called creole is widely spoken. The official religion is Roman Catholicism but many persons in remote areas practise the folk religion of voodoo. President in 1947: Dumarsais Estime, inaugurated Aug. 16, 1946.

**History.**—The year 1947 began almost simultaneously with the taking effect of Haiti's 11th constitution, which went into operation Dec. 23, 1946. The new law provided for a unitary government subdivided into five territorial departments. The legislative branch is bicameral, including a chamber of deputies of 37 members elected on a population basis, and a senate of 21 members chosen by departments; deputies and senators serve, respectively, for four and six years. The executive branch is headed by a president, elected by the chamber of deputies and the senate joined in national assembly, serving a six-year term and not eligible for immediate re-election. He is assisted by secretaries of state, who must be at least five in number.

The United States and Haiti on Jan. 3, 1947, agreed to extend to June 30, 1948, the program of aid to agriculture begun in 1944. Under terms of the extended agreement, the United States would contribute $50,000 and technical and administrative assistance to the extent of $175,000 and the Haitian government would contribute $175,000. President Estime on April 12 swore in a new cabinet. Some suggestions of political discontent were heard during 1947 but the administration remained in control.

**Education.**—Literacy is estimated at only 8% of those more than ten years of age. Educational statistics are of doubtful accuracy. Figures for 1946 indicated about 850 primary schools with approximately 85,000 pupils, 35 intermediate schools with about 6,000 enrolled and 6 schools of higher education, though these latter were not organized as a university.

**Finance.**—The monetary unit is the gourde, fixed by law at 20 cents U.S. currency. Government receipts in the first ten months of the fiscal year beginning Oct. 1, 1946, were 54,437,854 gourdes; expenditures in the same period were 48,172,294 gourdes. The unobligated treasury balance July 31, 1947, was 9,319,473 gourdes compared with 5,250,306 gourdes one year earlier. The government early in the year announced a new sugar export tax amounting to 17.4% ad valorem; the previous tax had averaged 13.2%. President Estime on May 19 announced an internal loan designed to pay off United States bondholders; this was followed by passage of a "financial liberation law," published in *Le Moniteur* July 14, to implement the government's policy. It authorized the floating of an internal loan of $10,000,000 in order to retire all outstanding A and C bonds of United States loans of 1922–23, the balance to be used for a program of economic rehabilitation. It was assumed that completion of the retirement would terminate the executive agreement of Sept. 13, 1940, with the United States. The above-mentioned obligations, as of June 30, 1947, amounted to 26,924,051 gourdes. The only remaining regular foreign debt was a public works contract of 1938, with a 1947 balance of 13,350,000 gourdes; in addition Haiti had a contingent obligation in connection with an Export-Import bank loan of $5,000,000 in 1941 to S.H.A.D.A. (Société Haitiano-Américaine de Developpement Agricole) for agricultural development.

**Trade.**—Exports from Oct. 1, 1946, to June 30, 1947, were valued at 120,136,000 gourdes compared with 114,117,000 for the entire fiscal year 1945–46. Imports during the same nine months were valued at 100,826,000 gourdes compared with 79,608,000 for the whole year 1945–46.

**Agriculture.**—Sugar production in 1946–47 was 49,284 short tons, of which 20,519 tons were allocated for domestic consumption; the balance was earmarked for sale to Great Britain. Production of molasses in 1946–47 was 2,510,958 gal., of which all but about 150,000 gal. was designed to be sold to the United States. Production of lint cotton in 1947 was 1,680,000 kg. compared with 2,447,715 kg. in 1946; the large drop was accounted for by excessive rainfall and extensive boll weevil damage; the 1936–46 annual average was 3,441,594 kg. The rice crop in 1947 was expected to be normal and corn prospects were considered good. Sisal production in the first six months of 1947 was 19,040,111 lb.; that figure included 14,469,627 lb. of line fibre, 463,418 lb. of white tow and 4,107,066 lb. of flume tow. Anticipated production of sisal for the second half of 1947 was 23,175,000 lb. The estimate of coffee production for 1947–48 was 403,600 bags of 60 kg. (1946–47: 400,000 bags)

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(R. H. F

**Hammer Throw:** *see* Track and Field Sports.

**Hand-ball.** The annual national A.A.U. four-wall cham ship was held in 1947 at the St. Louis, Y.M.C.A. A great array of past and defending champions peted, but it remained for comparative youngsters to dis the older stars thus bringing to an end a great era of p champions. Gus Lewis, formerly of Buffalo, but in 1947 resenting the Hollywood, Calif., Athletic club won first by defeating Robert Brady of the Elks club, San Francisc the singles, and Sam Haber and Joe Samson of Brookly throned Frank Coyle and Edward Linz of New York i doubles.

*National Four-Wall Rankings for 1947*

| Singles | Doubles |
|---|---|
| 1. Gus Lewis, Hollywood, Calif. | 1. Sam Haber and Joe Samson, Brooklyn, |
| 2. Robert Brady, San Francisco, Calif. | 2. Frank Coyle and Edward Linz, New Yor |
| 3. Walter Plekan, Buffalo, N.Y. | 3. Milton Lappin and Leo Dressler, Detroit, |

*National One-Wall Rankings for 1947*

| | |
|---|---|
| 1. Victor Herschkowitz, Brooklyn, N.Y. | 1. S. Geller and S. Gluckler, New York, N. |
| 2. Morton Alexander, Brooklyn, N.Y. | 2. R. Banks and L. Lassman, New York, N.Y |
| 3. M. Rosenfeld, New York, N.Y. | 3. V. Levy and A. Schwartz, New York, N. |

(Fr. R

**Harbours:** *see* Rivers and Harbours.

**Harriman, William Averell** (1891– ), U.S. dipl tist and government off was born on Nov. 15, the son of E. H. Harriman, rail magnate. After graduating from Yale university in 1913, he tered railroading, eventually becoming chairman of the Ill Central and the Union Pacific railroads as well as a partn Brown Brothers, Harriman and Co. He entered the govern in the early New Deal days, serving in a number of agen In March 1941 he was sent to Great Britain as lend-lease ministrator, and he was ambassador to the U.S.S.R. from 1943 until his resignation in Feb. 1946. Appointed ambass to Great Britain on March 23, he served in this post Sept. 22 when Pres. Harry S. Truman named him successo Henry A. Wallace as secretary of commerce. The follo day, Harriman expressed the view that his department sh remain out of foreign politics. On June 22, 1947, Harri was named by the president to head one of three commit formed to study the effect of the foreign aid program on U.S. domestic economy. The 19-man group of civilians hea by Harriman in its reports issued Nov. 8, estimated that cost of the European recovery program through 1951 w range from $12,000,000,000 to $17,000,000,000, and warned insistence by the U.S. that recipient nations adopt the U.S. enterprise system would constitute "unwarranted interfere in their internal affairs.

**Hartley, Fred Allan, Jr.** (1903– ), U.S. politic was born on Feb. 22 in H son, N.J., and attended Rutgers university, New Brunsw N.J. A Republican, Hartley entered politics at the age of Six years later, he was elected to the house of representati the youngest member of the 71st congress.

Re-elected nine consecutive times, Hartley became chair of the powerful house education and labour committee after G.O.P. victory in the 1946 national elections. At the time declared that the party victory in 1946 had given the Repu n leaders a mandate "to protect the public from violence, ss of output and class hatred due to increasing labour disites . . ."

In line with this philosophy, he submitted to congress the artley labour bill. Although passed by the lower house in pril 1947, it was criticized as unnecessarily harsh in the senate id after innumerable debates in joint committees, a comomise measure, known as the Taft-Hartley labour law, nerged.

Although voted by both houses, the Taft-Hartley bill was toed June 20 by Pres. Harry S. Truman who contended the easure would increase rather than lessen labour strife. Howver, the house promptly overrode the veto the same day, and e senate, on June 23.

Some time later, Hartley announced his decision to retire om politics after the close of the 80th session, but he denied uly 29) that fear of a defeat at labour's hands had impelled s decision.

## arvard University.

Founded in 1636, Harvard university in Cambridge, Mass., is the oldt institution of higher learning in the United States.

In 1947, all nine faculties were teaching about 50% more udents than normally. Three-fourths of these students were terans. During the year, the university was concerned with veral new educational programs. Harvard college was applyg experimentally the principles of a faculty committee report "General Education in a Free Society" (1945). In the fall 366 students were participating voluntarily in 15 courses conrned primarily with the students' preparation for responsible tizenship.

The faculty of arts and sciences created two new departents: social relations, to promote closer collaboration among ciologists, social and clinical psychologists and social anthrologists; and engineering sciences and applied physics, to bring e knowledge of pure physics to bear on problems of practical gnificance. The new departments serve both undergraduates d graduate students.

New projects started or completed during 1947 included: e Lamont library for undergraduates; a new cyclotron; the omputation laboratory, to house large-scale calculating maines. Gifts during the academic year 1946–47 totalled $7,648,48.18. (For statistics of endowment, enrolment, faculty, library lumes, etc., *see* UNIVERSITIES AND COLLEGES.) (W. M. PN.)

## awaii.

The territory of Hawaii consists of a group of eight large islands and numerous islets in the Pacific ocean etween latitude 18° 55′ and 22° 15′ N. and between 154° 50′ nd 160° 30′ W. longitude. The total area is 6,433 sq.mi. The lands are of volcanic origin. From southeast to northwest, ey are Hawaii, Kahoolawe, Maui, Lanai, Molokai, Oahu, auai and Niihau. In addition, stretching northwestward beond Niihau more than 1,100 mi. is an archipelago of rocks, eefs and shoals which includes Midway (longitude 177° 22′ .). Likewise, 960 mi. south of Honolulu and included as a art of the city and county of Honolulu lies Palmyra, a coral toll consisting of 55 islets, 5 mi. long and 2½ mi. wide. The rgest island in the territory and the youngest, geologically, is awaii, with an area of 4,021 sq.mi. The capital of the terriory is Honolulu, situated on the island of Oahu. It is a comletely modern city with a population (1947 est.) of 268,913, xclusive of military and naval personnel. The population of e territory in 1940 was 423,330 and had expanded to an estiated 525,477 in 1947, exclusive of military and naval personel. The racial composition of this population, in addition to e native Hawaiians and the Caucasians from the mainland, is Japanese, Chinese, Korean, Filipino and Portuguese. However, 86% of the population is native-born. Hawaii's chief crops and the bases of its industry are sugar and pineapples.

Ingram M. Stainback took office as governor on Aug. 24, 1942, and was reappointed July 13, 1946. Joseph R. Farrington was territorial delegate in congress in 1947.

**History.**—On March 19, 1947, the U.S. house public lands committee unanimously approved Hawaii's statehood bill; on June 30 the house of representatives passed it by a vote of 196 to 133 and sent it to the senate.

Early in December the senate public lands committee directed the chairman of the subcommittee on territories and insular affairs, Senator Guy Cordon of Oregon, to hold hearings in Hawaii on the subject of statehood and report findings to the second session of the 80th congress as soon as possible.

The Sugar act of 1948 passed in the 80th congress would permit sugar plantations to schedule operations with confidence, for the annual quota for Hawaii of 1,052,000 tons of sugar gives the territory a level of production upon which to base sound economic practices of planting and harvesting. Hawaii's normal production is about 1,000,000 tons. Three marginal sugar plantations were closed during the year.

**Finance.**—The net bonded debt of the territory on June 30, 1947, was at a record low mark of $10,996,000, a reduction during the fiscal year of $3,741,000. Sinking fund assets totalled $2,973,326, leaving a net indebtedness of $8,022,674, a 72% reduction in eight years.

On the basis of gross income-tax collections, total business transacted in the territory in the first six months of 1947 was $545,722,854, while in the like interval of 1946 the total was $480,132,492. Cash on hand and in banks on June 30, 1947, amounted to $34,857,363, as compared with $36,331,622 on the same date in 1946.

**Production.**—Hawaii's production of sugar for the first 11 months of 1947 totalled 853,965 tons. This represented an increase of 211,248 tons over the same period of 1946. The number of cases of solid pineapple packed during the year ended May 31, 1947, increased about 13% over the 1946 fiscal year. The juice packed was approximately 5% less.

**Trade and Commerce.**—For the first 10 months of 1947, bank clearings were up 13.2% and retail sales 15.1%.

Shipment of goods to the continental U.S. for the first six months of 1947 was valued at $87,290,063. Goods purchased from the mainland in the same period amounted to $183,715,499. Total trade with the continent from January to June was $271,005,562. (I. M. S.)

## Hay.

The U.S. crop of all kinds of hay in 1947 was larger in total tonnage and in yield than in 1946 and exceeded the 10-year (1936–45) average. Total production was estimated at 102,500,000 tons, compared with 100,739,000 tons in 1946 and a 10-year average of 94,490,000 tons. Acreage harvested was 75,291,000 in 1947; 74,173,000 in 1946 and 72,373,000 average during 1936–45. Average yield in 1946 was 1.36 tons per acre.

About one-third of the total crop was alfalfa, another third mixed clover and timothy and about one-eighth wild hay.

The large new crop together with the large carry-over on farms provided one of the largest supplies of hay on record. The quality of the new crop, however, especially alfalfa, was low because of rains during the harvest season. Late cuttings were better, especially in the far western states. The leading hay states were: Wisconsin 6,918,000 tons, New York 6,300,000 tons, California 6,098,000 tons, Minnesota 5,687,000 tons and Iowa 5,154,000 tons.

The price of hay at the farm stood at an average of $17.50 per ton in Jan. 1947, declined slowly to $15.10 in July, then advanced to $18.10 in December. The price for all hay varied greatly in different regions, from $29.00 per ton in North Carolina in December to $9.90 in North Dakota. Alfalfa prices varied from $38.00 per ton in North Carolina to $14.50 in North Dakota.

**Hayseed.**—Production of the six major seed crops (alfalfa, red, alsike and sweet clover, lespedeza and timothy) was estimated at 457,300,000 lb. in 1947, 20% less than was harvested in 1946.

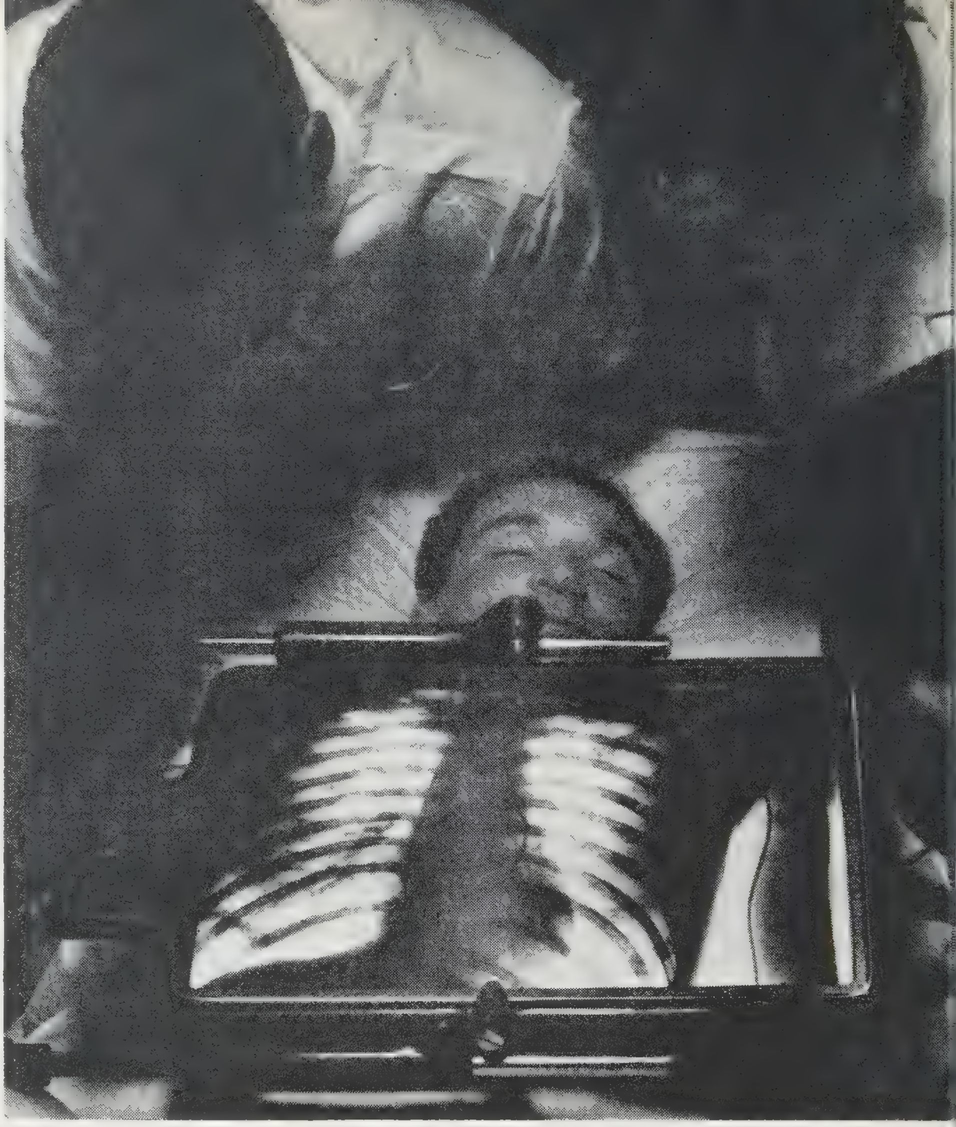
The alfalfa seed crop at 1,699,400 bu. was the second largest on record, exceeded only in 1946. Red clover seed output was the smallest in five years, 1,194,800 bu. compared with 2,141,800 bu. raised in 1946. Alsike clover yielded 366,200 bu. of seed, about 18% less than in 1946 but above average. Sweet clover returned the second smallest crop in 24 years, amounting to 564,400 bu. The lespedeza seed crop of 153,960,000 lb. was the smallest in seven years. Timothy returned a large crop of 1,641,400 bu., 24% above that of 1946 and 10% above average. The Sudan grass seed crop was small, only two-fifths of the ten-year average of 50,302,000 lb.

Redtop grass seed, mostly grown in Illinois and Missouri, yielded a crop of 15,900,000 lb. The strong demand for all kinds of hay tended to reduce seed harvest of all varieties. (*See* also ALFALFA; SOYBEANS.)

(J. C. Ms.)

**Health, Industrial:** *see* INDUSTRIAL HEALTH.

**Hearing Aids:** *see* DEAFNESS.



X-RAY FLUOROSCOPE, showing a venous catheter fed into a patient's
through his left arm (right). Perfected at Bellevue hospital, New Yor
device was used in 1947 to draw blood from inside the heart to obtain
accurate diagnoses in circulatory diseases

## Heart and Heart Diseases.

The scientific exhibit of the centennial meeting of the American Medical association in 1947 presented late advances in knowledge of the heart and of its diseases. A notable exhibit dealt with the most common noncyanotic kinds of congenital defects—chiefly, opened ductus arteriosus and aortic coarctation, both of which could now be corrected surgically in youth. Another booth was devoted to cyanotic types of congenital defects, in particular the tetralogy of Fallot. The pioneers in this field, Alfred Blalock and Helen Taussig of Baltimore, had operated successfully on hundreds of children, now pink, who had been blue before operation.

The serious problem of rheumatic heart disease continued to point up the need for adequate, world-wide community programs to put into effect what was already known about the disease. Many researches were in progress during 1947. Remarkably encouraging results were secured by the curative effects of adequate amounts of penicillin in the great majority of cases of subacute bacterial (malignant) endocarditis, a disease implanted on many cases of congenital and rheumatic heart defects and formerly almost always fatal.

Cardiovascular syphilis fortunately had already begun to yield to advances in the prevention and early treatment of syphilis itself. The cardiovascular diseases of middle age and older were attacked by studies of changes in the coronary arteries. Other research concerned hypertension and hypertensive heart disease and their management by diet and sympathectomy.

The two chief laboratory methods of cardiovascular examination, electrocardiography and X-ray study, were improved by the use of the unipolar and precordial leads in electrocar
raphy and with catheterization of the heart, diodrast studies
electrokymography. The last-named technique opened a
field of investigation. Devised by George C. Henny, Be
Boone and W. Edward Chamberlain of Philadelphia, it re
by "magic eye" and galvanometer the movement of the
border or change in density of the heart shadow seen o
fluoroscopic X-ray screen.

The American Heart association with its many affiliated
groups throughout the country emphasized the growing dev
ment of world-wide interest in the study and treatment of
disease and of the need for establishing community public h
programs in this field.

Registration of the pulmonary blood pressure by use o
cardiac catheter and Hamilton manometer was another si
cant development of 1947. The application of this techniqu
Lewis Dexter of Boston made it possible in 1947 to disc
the reason for previous surgical failure in the case of a y
man with chronic constrictive pericarditis and to point the
after discovery of considerable pulmonary hypertension, t
cure by resection of the pericardium posteriorly from the
ventricle and left auricle, where constriction had produce
effect like mitral stenosis on the decorticated (freed)
ventricle.

(P. D. W

**Helicopter:** *see* AVIATION, CIVIL.

**elium.** The production of helium in the United States was reported in 1947 for the first time after the fiscal ear 1939–40, when 9,450,855 cu.ft. were recovered. War de- and increased output to 16,173,430 cu.ft. in 1940–41, 29,962,- o cu.ft. in 1941–42, 58,951,155 cu.ft. in 1942–43 and a peak 137,268,144 cu.ft. in 1943–44, dropping back to 128,440,909 u.ft. in 1944–45 and 63,403,345 cu.ft. in 1945–46. These figures re to be compared with a prewar output that averaged around 000,000 cu.ft. annually.

During the war years, the prewar plant at Amarillo, Tex., was nlarged and four other plants were erected. Data on these ants had not been made public but it was known that pro- uction capacity had been increased severalfold. One of the war ants was dismantled, but the remaining plants had a capacity excess of 250,000,000 cu.ft. per year. The Amarillo plant and ne at Otis, Kan., and a third at Shiprock, N.M., had been aced in a standby condition leaving only the plant at Exell, ex., in operation.

It was announced late in 1946 that industrial consumption of elium was expected to exceed 1,000,000 cu.ft. a month, and les to private users were reported at 1,367,880 cu.ft. in Oct. 947.

(G. A. Ro.)

**emp.** The U.S. hemp crop for fibre was all grown in Wisconsin in 1947. About 5,200 ac. were planted and 900 ac. harvested; the total crop amounted to 4,655,000 lb. ive hemp mills were operated in 1947 under government ontrol.

The hemp seed crop, all grown in Kentucky, amounted to 91,000 lb. compared with a crop of 212,000 lb. in 1946. The 947 acreage was 600 ac., and the yield 485 lb. per acre. Out- ut was smaller than expected because of floods on lowlands.

(J. C. Ms.)

**ighways:** *see* ROADS AND HIGHWAYS.

**irohito** (1901– ), emperor of Japan, was born April 29, the son of Emperor Yoshihito. For his early career, ee *Encyclopædia Britannica.* On Pearl Harbor day, Dec. 7, 941, he proclaimed the nation at war with the United States nd the British empire. During the early part of World War II, hen Japan was amassing victories, the emperor remained in emi-seclusion. Toward the end of the war, however, he ad- itted in an imperial rescript that the situation was "truly rave." After the Potsdam declarations, the atomic bombings nd Russia's entry into the war, the Japanese indicated they ere willing to end the conflict provided the emperor retained is prerogatives. President Truman answered (Aug. 11, 1945) hat Hirohito would be permitted to retain his throne for the ime being, subject to the authority of the supreme Allied com- ander. Thus Hirohito on Aug. 15 (Tokyo time), 1945, broad- ast to his subjects that he had ordered acceptance of the "pro- isions of the joint declaration" of the Allied powers. He later lamed Hideki Tojo, former premier, for "misusing" his war re- cript, and pledged that any social reforms in Japan would be ade by constitutional means. In a rescript issued Jan. 1, 1946, he emperor declared to be false the "conception that the em- eror is divine and that the Japanese people are superior to other aces and fated to rule the world."

In 1946, the emperor made several tours among his subjects s an "ordinary mortal"; later the new constitution (promul- ated Nov. 3) reduced the throne to the status of a national ymbol. The following year, Hirohito was absolved of war guilt harges by Joseph B. Keenan, chief Allied prosecutor, who tated (Sept. 25, 1947), that a "thorough investigation" con- inced him there was no available evidence to support these charges. In a speech at Hiroshima Dec. 7 (Pearl Harbor anniversary), Hirohito urged Japan to work for peace and never contribute to another Pearl Harbor.

**Hispanic America:** *see* ARGENTINA; BOLIVIA; BRAZIL; BRITISH GUIANA; BRITISH HONDURAS; CHILE; COLOMBIA; COSTA RICA; ECUADOR; FRENCH OVERSEAS TERRITORIES; GUATEMALA; HONDURAS; NICARAGUA; PANAMÁ; PARAGUAY; PERU; SALVADOR, EL; SURINAM; URUGUAY; VENEZUELA.

**Hispaniola:** *see* DOMINICAN REPUBLIC; HAITI; WEST INDIES.

**Hockey:** *see* ICE HOCKEY.

**Hodgson, William Roy** (1892– ), Australian diplomat, was born at Kingston, Victoria, on May 22 and was educated at the School of Mines, Ballarat, and at the Royal Military college, Duntroon. In World War I he served in the 2nd field artillery brigade, A.I.F., and took part in the Gallipoli landings, 1917. He was attached to the general staff at Melbourne from 1921 until 1934, when he became assistant secretary, department of external affairs. In the following year he was appointed secretary, and in 1945 became Australian minister to France. He was adviser on foreign affairs to the Australian delegation at the Imperial conference, 1937. He attended the Australian-New Zealand aviation conference, Oct. 1944; the civil aviation conference at Chicago, 1944; San Francisco conference, 1945, and the United Nations general assembly, London 1946.

In March 1947 Hodgson succeeded Paul Hasluck as permanent Australian representative to the United Nations, where he was acting representative, during the absences of Herbert Evatt, on the Security council. In June 1947 he was chairman of the Atomic Energy commission, and also a member of the Commission on Conventional Armaments.

**Hogs.** The number of hogs in the United States on Jan. 1, 1947, was estimated at 59,901,000 head, 7% less than the 61,301,000 head reported a year earlier and 32% below the wartime peak of 83,852,000 head in 1944. The total pig crop of 1947 was 84,138,000 head, about 1% above the 1946 total. The government asked for an increase of 15%, but growers were cautious in view of the high price of corn. Much of the increase in production during World War II was due to new producers raising hogs with purchased feeds. As feed prices rose the new producers were forced out of business and there was a great drop from 1943 to the prewar level in 1944. Hog production being largely dependent on the corn supply, the strong demand for grain for export directly reduced the pork output.

Hog slaughter in 1947 was below the level of 1946 during the first half of the year and did not increase during the rest of the year because of the great pressure to conserve grain. The total slaughter of 1946 was 17,900,000 head.

Prices of hogs to producers were supported at $15.60 per cwt., Chicago basis. The actual average received by producers was $21.80 per cwt. in Jan. 1947, rose to $26.40 in March, held steady at about $24.00 until September when the average rose to $27.20, then declined to $24.20 in December. These high prices were attributed to the prospect of a smaller corn crop, the government drive to save grain for export and the general price level increase.

The goal for 1948 represented a sharp reduction from that of 1947; the spring pig crop was to be 6% below that of 1947 at 50,000,000 head.

World hog production in 1947 was below the 1946 level; increases in the United States did not offset the declines in Argentina, Brazil and Europe. The hog slaughter of Europe was less than one-half of pre-World War II levels, and Australia and New Zealand only three-fourths. South America was producing more than in prewar years. Canada had a decline of about 4,000,000 head in commercial hog slaughter, although total production was still 25% above prewar levels. A long packing-house strike delayed slaughter seriously. (*See* also Meat.) (J. C. Ms.)

**HOLC (Home Owners' Loan Corporation):** *see* Housing.
**Holland:** *see* Netherlands.
**Home Building, Federal:** *see* Housing.

## Home Economics.

The American Home Economics association membership reached 17,504 in 1947—866 more than in 1946. The following ten-point program of work was agreed upon at the national annual meeting in June 1947:

(1) Intensive study of problems of the family and institution groups.
(2) Improvement and extension of home-making instruction.
(3) Further improvement of professional education and stimulation of continued professional growth.
(4) Encouragement of investigations and research for the development of functioning programs in home economics and for the contribution of new knowledge in all areas of home economics.
(5) Interpretation of home economics to members, administrators, potential recruits, parents, various organizations and agencies and to the general public.
(6) Interpretation of consumer needs to education, business, civic and governmental agencies and, conversely, interpretation of the work of these groups to the consumer.
(7) Support and promotion of legislation to improve family welfare on local, state, national and international levels.
(8) Development of an active program of recruitment of workers to include effective vocational guidance.
(9) Improvement in the professional standards and status of home economics.
(10) Study of better ways and means of interpreting home economics to visitors, students and professional workers from other countries.

The association's program for 1947 included co-operation or affiliation with the following groups: Guidance of Rural Growth; National Council on Family Relations; International Federation of Home Economics Instruction; National Council of Family Life; United States information centres in occupied areas; the National Conference on Family Life; and Women's Joint Congressional committee. Continued support was given to International Scholarships for Foreign Students to study in the United States. Five scholarships were awarded to graduate students during 1947—two from China, two from India and one from the Netherlands.

Members of various committees of the association represented it at conferences called under the auspices of the commission for international educational reconstruction; the U.S. national commission of the United Nations Educational, Scientific and Cultural organization; the Institute of International Education for Advisers of Foreign College Students; and the International Scientific Management congress.

Guided by its legislative committee, the association supported appropriations for the bureau of human nutrition and home economics, the women's bureau, the office of education and the division of labour standards. The school lunch program, rent control, housing; and the flammable fabrics bill were also supported.

The Association sponsored a consumer interests program, a program of criteria for evaluating college programs of home economics, and an apprentice training program for graduate home economists planning to enter business.

**Bureau of Human Nutrition and Home Economics.**—The food research program of the bureau of human nutrition and home economics during 1947 emphasized studies of the nutritive contributions of different foods to the diet, comparative costs, and nutritional requirements. The bureau investigated methods whereby these facts could be applied by families in different circumstances to the purchase of food, the preparation of hea meals and the preservation and care of food in the home. were collected and analyzed regarding the quantities of dif foods and other goods and services consumed by families in ous regional and economic groups.

In textiles, the bureau studied the comparative usefulnes cost of fabrics and garments differing in material, constru design and finish.

Housing studies included research in the needs of famili efficiency and comfort and the development of plans for houses, including adequate work and storage centres. Sele care and use of household equipment was also stressed.

Although its budget was reduced in 1947 by $246,000, th reau distributed 5,250,000 copies of 118 technical bulleti addition to charts and photographs.

**Home Economics Extension Service.**—A total of 3,07 homes were assisted during 1947 by the home economics e sion programs—an increase of 4.92% over the averages fo preceding 5-year period. The membership of home demor tion clubs reached 1,162,346, an increase of 7.67% ove average for the same previous 5-year period. This total w addition to 2,157,883 girls enrolled in 4-H club projects v came under the guidance of extension leaders. During the 629,305 families were assisted through projects dealing family relations and child development; 608,122 through ects in home management and family economics; 793,4 buying food, clothing, household equipment and supplies; 2, 574 with clothing and textile problems; 2,995,513 with h and safety projects including improved diets, child fee prevention of colds and other health measures.

**Land-Grant Colleges.**—A subcommittee of heads of economics departments of land-grant colleges developed a for regional organization parallel with that of the experi station directors. Regional programs were set up for studi the fields of nutrition and housing, and the projects appr were allotted funds for research. The subcommittee also se criteria for judging research projects in home econo Spurred by the lack of well-trained leaders and resear within the field, the subcommittee studied methods of dev ing home economics research in land-grant colleges. (*See* Food Research.)

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(E. D

**Home Loan Bank Board:** *see* Housing.
**Home Owners' Loan Corporation:** *see* Housing.

## Honduras.

A republic of Central America bounded Guatemala, El Salvador and Nicaragua. A 59,160 sq.mi.; pop. (1945 census), 1,200,542, including appr ately 35,000 tribal Indians. The capital is Tegucigalpa (pop. 5,715 in 1945). Other principal cities are San Pedro Sula (22,16) and La Ceiba (12,185); smaller urban centres are Puerto ortés (approx. 8,000), Choluteca (5,000), Santa Rosa (6,000) nd Tela (9,000). Religion: Roman Catholic. Language: Spanh. President in 1947: Gen. Tiburcio Carías Andino.

**History.**—Political information emanating from Honduras uring 1947 was meagre and mostly from anti-administration ources. Rumours of unrest included a futile attempt by exiles rom Nicaragua to occupy El Paraíso on Jan. 9, a shift in the arrison command at La Ceiba in April, and official persecution f the opposition press, especially on April 25 at San Pedro Sula.

Speculation on potential candidates for the Oct. 1948 presiential election continued, but without any clarification by June. he leading contenders for administration support were Juan Ianuel Gálvez, minister of national defense and former atorney for the United Fruit Co., Gen. Abraham Williams, the ice-president, and Pres. Carías Andino himself. José A. Funes, he only congressman who opposed the 1936 coup d'état, which laced Gen. Carías Andino in power, was considered the most kely choice of the opposition.

**Education.**—In 1946, 60,574 students (approximately 45% of the chilen of school age) received instruction from 2,116 teachers. The 26 secndary schools enrolled 5,226 and the national university, 433. The 946–47 budget allotted 950,734 lempiras for public education. As of an. 1, 1947, there were 30 motion picture theatres with a total seating apacity of 21,000.

**Communications.**—The banana area of the north was served by 922 mi. railroad; the main towns by 1,201 mi. of highway and 63 airfields. he government operated 2,646 mi. of telephone and 16,497 mi. of teleraph lines. There were 1,542 mi. of privately-operated telegraph lines nd four commercial radio broadcasting stations.

**Finance.**—The monetary unit is the lempira, officially valued at 49.02 ents U.S. on Sept. 15, 1947. The budget for 1946–47 estimated expendiures and revenues to balance at 14,482,493 lempiras, national defense aking the largest appropriations. As of June 30, 1946, the external debt mounted to 2,723,875 lempiras; internal, 10,666,335.

**Trade and Resources.**—Exports during 1946 were valued at $14,100,000 nd imports at $19,600,000. For the first five months of 1947, exports otalled $7,300,000 and imports $13,500,000. The main shipments in 946 were bananas (14,183,557 stems), silver (approximately 3,000,000 roy oz.), gold (approximately 21,000 troy oz.), coconuts (approximately 0,000,000 units) and coffee (approximately 160,000 bags of 132 lb.). anana exports were up 30% during the first quarter of 1947.

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**Ionduras, British:** *see* BRITISH HONDURAS.

**Ioney:** *see* BEEKEEPING.

**Iong Kong:** *see* BRITISH EMPIRE.

## Ioover, Herbert Clark

(1874– ), U.S. statesman and 31st president of the United tates (1929–33), was born Aug. 10 in West Branch, Ia. For his arlier career see *Encyclopædia Britannica.*

Hoover headed several food investigating missions for President Harry S. Truman in 1946 and 1947. His 1947 mission, nnounced on Jan. 22, was to study and recommend solutions or meeting food and collateral problems in central Europe. In is numerous reports on his findings, Hoover recommended rompt increase of food rations to German people in the Anglo-J.S. zones and immediate restoration to full production of Gernan light and heavy industries; emergency relief to Austria nd placing of relief to foreign countries on a repayment rather han a gift basis. He blamed the Soviet Union (May 26) for the conomic paralysis of Germany and Japan and warned (June 5) that continued "over-exporting" of the national resources vould impair U.S. economy.

On July 16, President Truman selected Hoover to head a bipartisan commission to survey operations of the federal government and recommend ways to simplify its vast structure. Fornally accepting the post Sept. 29, Hoover said it would be his 'last public service."

## Hops.

U.S. production of hops was estimated at 50,098,000 lb. in 1947, compared with 53,171,000 lb. in 1946 and a ten-year average (1936–45) of 40,742,000 lb. Acreage was 39,700, about the same as in 1946 but above the ten-year average of 33,990. The average yield was above average, 1,262 lb. per acre. The Washington crop was good but that of Oregon light and below average. Spread of the mildew disease in Oregon greatly reduced the harvest. California production was slightly smaller than in 1946. The price of hops in the open market was 68 cents per pound in Jan. 1947 compared with 23 cents parity; it declined to 64 cents by midyear and to 60 cents in December. (J. C. Ms.)

*U.S. Hop Production by States, 1947, 1946 and 10-Year Average*

(In pounds)

| State | 1947 | 1946 | Average 1936–45 |
|---|---|---|---|
| Washington | 20,358,000 | 19,720,000 | 12,685,000 |
| Oregon | 16,150,000 | 18,800,000 | 17,180,000 |
| California | 13,590,000 | 14,651,000 | 10,878,000 |

**Hormones:** *see* ENDOCRINOLOGY.

## Horse Racing.

Although lacking the pari-mutuel handle of the year before, many were the noteworthy accomplishments of horse racing in the United States during 1947. Among them were a record attendance of an estimated 110,000 at the Kentucky Derby; a record prize pool of $53,934,075 for 3,134 racing programs; and a new all-time money winner in Stymie, who boosted his grand total to $816,060 and gave promise of becoming the first equine millionaire in 1948.

Armed, Calumet Farm's six-year-old gelding, was rated the outstanding horse of the year. He won $376,325 with 11 first places in 17 starts. His most lucrative triumph was in the Special at Belmont park, Long Island, N.Y., where he defeated Assault by eight lengths to capture the $100,000 prize. Other leading money winners of 1947 and their totals were: Stymie, $299,775; Phalanx, $269,250; But Why Not, $225,300; Bewitch, $213,675; and On Trust, $208,575. A record number of 22 horses won more than $100,000 each during the year.

With Armed leading the way, Calumet Farm, owned by Warren Wright of Chicago, Ill., became the first racing establishment to win $1,000,000 in a single campaign. Calumet Farm colours accounted for $1,402,436 in 1947 and contributed the champion two-year-old colt in Citation and the champion two-year-old filly in Bewitch.

Three new tracks operated in 1947—Lincoln Downs, Lincoln, R.I., Golden Gate fields, Albany, Calif., and Sunshine park at Oldsmar, Fla. The 21 states in which there was thoroughbred racing in the U.S. amassed a total revenue of $90,846,537 during the year. The pari-mutuel turnover was $1,685,462,181, approximately $145,000,000 less than in the record year of 1946. Total attendance in the 21 U.S. racing states was 25,991,153.

Winner of the 73rd running of the Kentucky Derby was Maine Chance Farm's Jet Pilot. Phalanx, owned by C. V. Whitney, was rated the best of the three-year-olds however, on his $269,250 winnings for the year. Phalanx scored 6 victories in 16 starts, topped by the Belmont Stakes. Faultless won the Preakness. But Why Not was voted the best filly in the three-year-old division on her 7 triumphs in 13 engagements. She scored her biggest successes at Arlington park, Arlington Heights, Ill. with victories in the Matron and Classic.

Scoring eight successive successes while racing in the Kentucky and Chicago areas, Calumet Farm's Bewitch became the leading two-year-old of the year. She won $213,675 in annexing such features as the Debutante, Hyde Park, Arlington Lassie, Princess Pat stakes and the Washington Park Futurity.

Other winners of outstanding stakes run in 1947, with net value to winner, included: Santa Anita Handicap, Olhaverry, $98,900; Santa Anita Derby, On Trust, $81,750; Belmont Futurity, Citation, $78,430; New York Handicap, Rico Montre, $73,700; Hollywood Gold Cup, Cover Up, $73,500; Empire City Gold Cup, Stymie, $73,000; American Derby, Fervent, $70,950.

As a contract rider for Calumet Farm stables, Douglas Dodson rode the Warren Wright crest as the leading money-winner of all times. His mounts earned $1,429,949. He scored 141 firsts, 100 places and 75 shows in 647 tries. Johnny Longden led in number of wins—316—and finished second in the money circle with $1,304,025. Two other jockeys also were over the $1,000,000 line, Eddie Arcaro, steering home $1,221,479 worth of winners, and Ted Atkinson scoring with $1,070,260.

William Molter, west coast trainer, repeated as the leading conditioner of the year with 155 winners. Money honours, however, went to Horace A. "Jimmy" Jones, who topped the list with the saddling of $1,334,805 worth of mounts for Calumet Farm. Molter was second with $833,970.

Bull Lea, chief sire of the Calumet Farm stables, easily added to the Warren Wright monopoly when his get earned $1,259,418 in 1947. Next in line was Alibhal, whose offspring accounted for $833,397 in winnings. The longest-priced winner of the season was Toby J., a 225-to-1 shot at Tanforan, San Bruno, Calif. The biggest daily double pay off came Aug. 27 at Dade park, Owensboro, Ky., $7,711.20.

The "sport of kings" was saddened by the death of Man o' War, most famous of all thoroughbreds, on Nov. 1, 1947, near Lexington, Ky. He died of a heart attack at the age of 30. Other prominent horses who died during 1947 were: Beau Pere, 20 and Blue Larkspur, 21. (M. P. W.)

**Canada.**—During the 329 days of horse racing in Canada in 1947 a total of $48,519,909 was wagered at 36 meetings, a decrease of $147,835 from the amount wagered at 305 days' racing at 33 meetings in 1946. Prize money paid in 1947 t $2,323,675, an increase of $508,585 over 1946.

ASSAULT (left) starting to move up during the handicap race which he won by three lengths at Aqueduct, N.Y., in June 1947. Winnings in this race brought his life-earnings to $576,670, an all-time record in horse racing to that date

Of the total of $48,519,909 wagered in 1947, Ontar counted for $29,034,232 in 126 days' racing; British Col was second with $8,895,929 wagered during 70 days' r Manitoba was third with $4,134,448 wagered at 28 days' r Alberta fourth, with $3,220,272 during 40 days' racing; Q fifth with $2,491,268 and 50 days' racing; Saskatchewan with $743,760 wagered during 15 days' racing.

From every dollar wagered at race meetings the dor government took 5%, the tax deducted by the provinces r from 5% to 10% and each racing association was allowed centage ranging from 7% down to 3% according to the amount wagered. In Canada, all betting at race meetin what is known as running horses, must be under the pari-n system supervised by the department of agriculture. (C. C

**Great Britain.**—The first of the classic races, the Two sand Guineas, resulted in an easy victory for A. J. Dewar dor Minstrel, who won by eight lengths from Saravan and jirao in a field of 15 starters. He started favourite for the (1½ mi.) but met with his first defeat, Baron de Wal French-bred Pearl Diver winning by four lengths from I and the maharaja of Baroda's Sayajirao. This latter colt consistent performer, but took some time to come to hi form; this was found in the St. Leger, which he won by a from the French horse Arbar, with Migoli third.

Both the One Thousand Guineas and Oaks were won by Pierre Corbière's French filly Imprudence; but althoug French horses, Souverain, Chanteur II and Field Day, fill first three places in the Ascot Gold Cup, their successes w the whole less sweeping than in the previous year. Sir Joh vis's Reynard Volant put up a fine performance in winnin Ascot Stakes (2½ mi.), Mrs. F. Senior's Trimbush gain fifth success of the season in defeating the French Lauren the Doncaster Cup (2¼ mi.), and Capt. D. Fitzgerald's V way won the Cesarewitch (2¼ mi.). The Royal Hunt Stewards' Cup at Goodwood, and the Cambridgeshire, th the most popular races over shorter distances, were won, r tively, by Master Vote, Closeburn and Fairey Fulmar. among the two-year-old colts were Cobbler, whose victory Middle Park Plate was his fourth consecutive win, Bir Greetings, Leader, Pride of India, Black Tarquin, Deliriun Babu and Anschluss; the best of the fillies were Fair I Queenpot (both of whom were daughters of Big Game Careless Nora.

Gordon Richards was champion jockey for the 20th tim 269 winners in 835 rides. The Aga Khan was both the le owner and breeder, and Fred Darling, who retired at the e the season, was the leading trainer. (F. M. I

## Horses.

The horse disappeared more rapidly in the U States during 1946 and 1947 than in any pre years on record. The decline which had been accelerating the tractor came into use about 1910 was speeded in 19 the large number exported, by the larger number of older l slaughtered and by a reduced rate of breeding. The total ber was estimated at 7,251,000 head on Jan. 1, 1947, com with 8,053,000 head in 1946 and an average of 10,259,00 for the ten years 1936–45. The decreases were greatest in in north central states where tractors were increasing rapidly in number. The number of colts was only 3% total, which is not enough to replace the death loss in h Horses were the only class of livestock that declined in value during 1946 due to the fact that the value per he $59.20 was only $2 more than a year earlier. Total esti value of horses Jan. 1, 1947, was $429,133,000, the lowest

**ORGAN BROOD MARES** and their foals trotting to pasture at a farm near iddlebury, Vt., where husbandrymen of the U.S. department of agriculture orked to improve and perpetuate the U.S.-bred Morgan horse in 1947

ears of record. The average value of horses sold was steady rough 1946 and 1947 at around $56 per head.

Shipment of horses to the stockyards slaughter houses in- eased in 1946 to more than 21,000 head compared with 13,000 ead in 1945 and an average of about 7,000 head in the pre- ous five years. Total receipts at stockyards of both horses d mules for both sale and slaughter was 658,198 head in 1946, 2,130 head in 1945 and an average of about 280,000 head the previous five years, indicating the increasing rate of quidation. About 116,000 head of horses and 89,057,000 lb. horsemeat were exported in the fiscal year 1946–47.

The number of horses in the world likewise was estimated to e declining slowly because of mechanization of farming and terrupted breeding operations during World War II. No dequate world livestock census was available. The best es- mates put the total at 75,200,000 head, compared with an verage of 94,700,000 during 1934–38. The greatest decline was the Soviet Union where the total was only half the prewar vel. A slight increase was estimated in 1947 in the Soviet nion, Asia and South America. The increase in tractors in e United Kingdom made it possible to reduce the number of orses by one-fifth during the war and these are unlikely to be placed.

**Mules.**—The number of mules in the U.S. was estimated at ,773,000 head on Jan. 1, 1947, compared with 3,010,000 a year arlier. The rate of decline was about 20% in the north central tates but only 3% in the south Atlantic states. Average value dvanced during the year from $133 to $141 per head. The arket price of mules was $106 per head in Jan. 1947, rose to 109 in July, then declined again to $96 in December. Exports mounted to 23,000 head in the fiscal year ending June 1947, ompared with 4,000 head shipped in 1946. The U.S. army use f mules had practically ceased. World estimates of the num- er of mules indicated a slight decline in all countries except pain. (*See* also SHOWS, ANIMAL.) (J. C. Ms.)

**lorse Shows:** *see* SHOWS, ANIMAL.

**lorticulture.** In July 1947 congress passed a bill amending the quarantine act of 1912 by giving the .S. department of agriculture authority to limit the entry of ursery stock as a means of preventing the introduction of addi- onal plant pests and diseases. In October the secretary of griculture announced a public hearing to consider regulatory ction under this amendment. At this hearing, held in Novem- er, representatives of various state boards and of nursery and orist organizations recommended severe limitations and regulations, to be imposed at the earliest possible moment. Strong opposition to such action was expressed by representatives of horticultural and garden organizations and institutions, by plant and seed establishments and organizations in the U.S. and by representatives of the British and Canadian governments. It was argued by these protestants that the action proposed would, in effect, constitute a tariff and prove a serious obstacle to the efforts of other countries to re-establish their economies and attain recovery with a minimum of aid from the U.S. A decision was being awaited with great anxiety by such countries as England, France, Belgium, Denmark and the Netherlands.

In effect, August 1, the department of agriculture placed restrictions on the importations of cut flowers from most countries into continental U.S., Puerto Rico and Hawaii. Countries not affected were Canada, Labrador and Newfoundland. This action was taken because of the greatly increased movement of cut flowers by aeroplane. Cut flowers found to be carriers of insects or diseases must be destroyed or shipped out of the country unless adequate treatment could be given. The department began to require permits in advance for shipping in the flowers of gardenias, camellias, rhododendrons, roses and lilacs.

Congress enacted legislation providing federal control of weed killers, rodenticides and pest control devices. Labels "Poison" must appear on preparations containing poisonous substances.

The Dutch elm disease was found to be spreading rapidly in many eastern states, requiring the removal of large numbers of infected trees.

Aeroplane spraying of woodlands was extended to control the gypsy moth, this method having been found effective, quick and reasonably inexpensive, one-half pound of DDT dissolved in one gallon of oil being sufficient to cover an acre.

New soil treatments were found successful in controlling Japanese beetles, thus reducing the rapidity of their spread, but quarantine measures were continued in all or parts of 14 eastern states.

It was found that 2,4-D could be used effectively in controlling crab grass when applied to germinating seedlings but less so when used on mature plants.

Progress was made in the development of selective weed killers for various crops, including gladioli, but they need to be used when the weeds are small. By this method the weeds are killed, but the crops are not injured, the amount of hand labour required thus being greatly reduced. This method gave promise of lowered costs in the production of certain food crops.

Lily bulbs were again reported coming into the U.S., although in a limited way. Before World War II, importations from Japan totalled 25,000,000 annually. Production of these bulbs increased rapidly on the Pacific coast, but the 1947 crop probably did not exceed 10,000,000. A limited number of Madonna lily bulbs were shipped into the U.S. from northern France.

Prepared lily of the valley pips began arriving in the U.S. from Denmark. These indications of a slow recovery in commercial horticulture abroad did not change the fact that in most countries the emphasis was on the production of food crops for home use and for seed. However, an abnormally cold winter, followed by severe drought, caused heavy losses, in some instances 50%, in the northern countries. Italy was better off, with a surplus of vegetable seeds, which were sold to other European countries in competition with shipments from the U.S. Indications were that the European seed business, once very large, was well on the way to recovery. The Netherlands concentrated on the cultivation of bulbs for shipments abroad as the best method of solving its economic ills, but a very hard winter caused considerable damage to tulips. An extremely hot summer followed, with production falling below normal. Most of the other bulbs fared better, but much damage was suffered by the iris crop.

Interest in ornamentals was revived in England to such an extent that spring and fall shows were on a scale and standard comparable with prewar years. Attendance and receipts were large.

The propagation of roses was continued in England, Ireland and France, new varieties being sent to the United States to compete with originations there. The All-America Rose winners announced for distribution in 1948 were Diamond Jubilee, buff; Nocturne, dark red; San Fernando, bright red; Taffeta, carmine rose; Pinkie, light rose pink.

Reports from Canada, which has a large seed business, indicated a reduced crop of vegetable seeds, especially in British Columbia, but a satisfactory yield of flower seeds.

The George Robert White medal of honour for 1947 was awarded by the Massachusetts Horticultural society to Ernest F. Coe, known as the father of the Everglades National park in Florida, which was opened by the government late in 1947. (*See* also BOTANY; VEGETABLES.) (E. I. F.)

**Hospitalization Insurance:** *see* INSURANCE.

**Hospitals.** Hospitals during 1947 made progress toward the expansion of existing facilities and met the challenge of problems resulting from high admissions of patients, dangerous shortages of personnel—including nurses, technicians, medical record librarians and others—and difficulties in balancing budgets.

In hospital construction, the federal Hospital Survey and Construction act, commonly known as the Hill-Burton act, encouraged all states to take inventories of their hospital resources, a requirement of the legislation for those states wishing to qualify for a portion of the $75,000,000 grant available for the construction of badly needed new installations. In addition, every state developed a hospital plan based on the number of beds required to serve adequately the health needs of its rural and metropolitan citizens, another requirement of the hospital bill.

Construction on a limited number of hospitals was initiated during 1947, through the help of federal funds. There was also considerable planning for additional hospital facilities to be constructed and financed independently, without the assistance of the government.

Throughout the year, the expansion of U.S. hospital facilities progressed in spite of the fact that special studies revealed that alarming numbers of beds—32,000—were closed because of a shortage of graduate nurses and other professional and technical workers necessary for the proper operation of a hospital. In an attempt to solve the shortage of nursing personnel—a shortage resulting from increased demands for this professional service
not only by hospitals but by industry, other institutions an
federal and military services—an extensive national stu
nurse recruitment program was conducted under the directi
numerous organizations interested in nursing, hospitals an
general field of health. The campaign resulted in the enrol
of approximately 40,000 new student nurses—an increas
one-third over the number recruited in 1946 and the la
number admitted to schools of nursing during any peace
year.

While many hospitals were obliged to increase their
during the year to meet increased operating costs, the p
continued its demand for hospitalization. There was, how
some indication at the end of 1947 that higher hospital
were reducing hospital occupancy. Nonetheless, the new
did not affect significantly the 40,000,000–50,000,000 of
population who held membership in hospital prepayment p
This tremendous group protected by hospital insurance
tinued to utilize hospital facilities to the full extent of
needs.

The year 1947 saw some adjustments in premiums cha
for prepayment hospital policies, an increase deemed neces
by those hospitals which wished to continue maintaining
standards of service in the face of doubled and tripled adva
in their operational costs. In spite of some increases, the
centage of the total population insured under Blue Cross
payment plans and by commercial hospital insurance po
went up, while enrolment in medical prepayment plans gre
an even more rapid rate.

The shortage of hospital beds and the increased numb
physicians in private practice focused attention during the
on the need for a judicious apportionment of hospital be
staff physicians. There was also an increased interest in
question of the place of the general practitioner on the hos
staff, particularly in view of a trend toward relating the
tice of the individual physician to his competency in specia
fields of medicine.

Progress was made toward planning an integrated hos
system which would afford the maximum service to the p
with a minimum of investment. In developing a national
state program of this scope, both hospital administrators
representatives from the public health services were draw
gether on many common problems and worked hand-in-
toward the establishment of voluntary patterns for an integ
hospital system. (*See* also VETERANS' ADMINISTRATION.)

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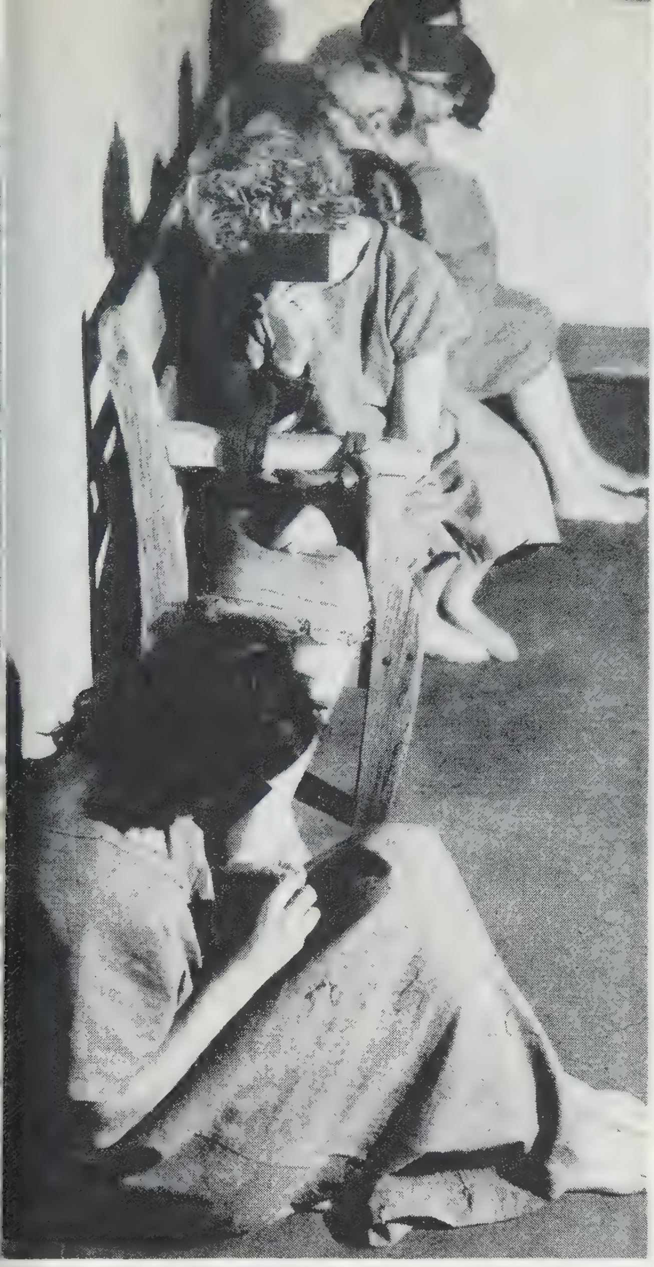
**Great Britain.**—The National Health Service act, which
came law in Nov. 1946, provided for the nationalization o
the hospitals in England and Wales, and was followed
similar act covering Scotland. The operative date was fixe
July 5, 1948, and the year 1947 was therefore a perio
transition. The first important step was the division by
minister of health, Aneurin Bevan, of England and Wales
14 regional hospital areas based on the well-known undergr
ate teaching hospitals. Four of these were centred on Lon
northwest metropolitan region (Charing Cross, Middlesex,
versity college, Royal Free and St. Mary's); northeast m
politan region (the London and St. Bartholomew's); south
metropolitan region (Guy's and King's college) and the so
west metropolitan region (St. George's, St. Thomas' and W
minster). The remaining ten regional hospital areas were
tred on teaching hospitals in the large cities of the provin



IENTAL PATIENTS in a U.S. state hospital, photographed in 1947. Eradica-
ion of neglect and backwardness in mental hospitals, due to understaffing
nd lack of qualified personnel, was the aim of the U.S. National Committee
or Mental Hygiene in 1947

Iewcastle Royal Victoria, Leeds General infirmary, Sheffield
oyal infirmary, Addenbrooke's at Cambridge, Radcliffe infir-
nary at Oxford, Bristol Royal, Cardiff Royal infirmary, Bir-
ningham United and the Queen Elizabeth, Liverpool Royal in-
rmary and Manchester Royal infirmary.

Members of the first regional boards were appointed by the
ninistry of health in July 1947, and by the autumn officers had
een appointed and the new boards had begun to function.
Ieantime, however, the hospitals continued to be controlled by
neir voluntary committees and by the local authorities. Great
trains arose from three sources. First, development was ham-
ered by the restrictions imposed on buildings and supplies, and
nany hospitals were able only in part to overtake arrears in
naintenance and repair work. Second, rising prices and the
egotiation of national wage scales for employees forced up the
ost per bed still further, and figures published in October
nowed that the cost per bed at London voluntary hospitals had
sen from £233 in 1938 to £490 in 1946. The rise continued
nd compelled many of the voluntary hospitals to seek financial
ssistance from the ministry of health, though the traditional
oluntary support from the public was remarkably well maintained. Third, shortage of nursing and domestic staff became still more acute.

So serious was the shortage that many beds in local authority hospitals had to remain closed in spite of heavy demands; the number of beds available for the sick in the London area during the winter months of 1946–47 fell to a lower level than at any time during World War II, and indeed lower than for many years past; and great anxiety was caused to all responsible for the admission of patients to hospital. A national campaign for part-time nurses met with some success.

A report prepared by a working party on the recruitment and training of nurses, published in September, drew attention to the high percentage of wastage of student nurses during training (estimated to approach 50% of entrants) and attributed this to four principal factors—an obsolete system of discipline, an unsympathetic attitude on the part of the senior staff, defective catering arrangements and excessive pressure of work. The working party therefore recommended: (1) that nurses in training should be accorded full student status; (2) that greater care be taken in the selection of student nurses and the use of psychological methods of selection; (3) that special training courses be devised for senior staff prior to appointment as ward sisters, etc., and (4) the reduction of the training week to 40 hr. In addition it proposed that the training should be made more comprehensive and recommended for all nurses a new two-year basic training course.

These proposals were referred by the ministry of health to the Royal College of Nursing and other interested bodies for comment. They at once incurred much criticism, especially on the ground that elimination of repetitive nursing duties and a shortening of the training period would detract from the practical bias long characteristic of nursing in Great Britain and might easily lead to an academic and at the same time shallow approach. (A. G. L. I.)

## Hotels.

Except for fires, the record of the hotel industry in 1947 was a projection of trends which began to be apparent toward the end of the preceding year. Demand for rooms continued at high levels, although two or three points below 1946; food sales held up, while beverage business declined. In particular, patronage of entertainment restaurants decreased during the year at an accelerated rate. The disappointing New Year's eve was an emphasis of the decline.

Because of the dubious profit outlook and a tightening money market, there was little new hotel financing and no new hotel construction, with the exception of a small penthouse hotel built on top of a department store structure in a midwestern city. The expansion of large hotel chains proceeded more cautiously, although the smaller chains continued to acquire a number of properties.

Hotel rehabilitation progressed slowly because of shortages of equipment and supplies. Some restaurant remodelling took place; many of the new rooms were well designed. One alteration cost the extraordinary figure of $70 a square foot.

It was significant to analysts that hotels were no longer following the upward curve of business volume. The consumer dollar was being spent more selectively, possibly for two reasons: the increasing availability of heavy consumer goods, and a wave of nostalgic sentimentality that diverted spending toward gift and holiday buying.

The customary lulls in hotel and restaurant activity during Thanksgiving and Christmas were intensified in 1947; new lows in occupancy were recorded, especially at the end of the year.

Hotel management was thus confronted with the problem of curtailing expenses to meet, in some measure, these valleys of patronage. With an uncertain labour supply and an unpredictable variation in demand for accommodations, it became inadvisable to reduce operating personnel, the method used in depression periods before the war.

Strong resistance, both public and legislative, developed toward increases in hotel room rates and restaurant charges. State police and health powers, not hitherto employed, were called upon in an effort by communities to limit rates, even to a greater degree than those imposed under the war powers of the federal administration. Rental increases were confined to an arbitrary figure of 15%, whether or not this figure applied to buildings offering no services or furnishings whatsoever, or to hotels with elaborate and costly transient accommodations.

By the end of the year, the legality of many ordinances and statutes had not been decided. The result was a confusion of practice that added to the many vexations of determining hotel policy.

The industry could no longer turn to tradition for guidance. Even the problems which were not new had reached such proportions that fresh solutions had to be discovered. Direction was handicapped by lack of an adequate technology. The few trade schools had not adjusted their teaching to meet these altered conditions.

Hotel management was also handicapped by an almost complete absence of new labour-saving machinery. For instance, dish washing, now costing three times as much per 100 units as the prewar figure, was carried on with machines virtually unchanged from the models of 20 years ago. A few hotels ordered pot-washing machines supplied by a concern which had manufactured these devices for other fields of endeavour. The only radically new equipment available was an electronic range which had barely passed the experimental stage. It was extremely costly and in use only in a few hotels.

In general, hotels needed the mechanized efficiency long enjoyed by heavy industry. The resistance to higher room rates, food and beverage prices and the continued increase in labour and other costs made greater efficiencies in hotel operation imperative. This could be accomplished only by extensive study, improvement and expansion in mechanical methods.

As 1947 drew to its close, a number of hotels had engaged experts, some from universities and some from efficiency engineering concerns, to make elaborate time studies and to do job evaluation. Unfortunately, there was no accumulated experience to guide them.

Personnel turnover was running 400% in many large properties, with a minimum cost of $25 for each job change. High wages paid in the manufacturing fields proved a temptation to hotel employees.

In presenting their annual demands, labour officials placed stress upon the cost of living and the widening gap between wage rates in hotels and outside industry. Hotel management recognized that this situation had brought about a crisis that necessitated a complete review of previous hotel practice.

Since prices in hotel restaurants and bars were as high as they could possibly go, it seemed probable at the end of 1947 that transient room charges would have to be revised substantially upward, perhaps to a degree that would bring the "break even" point to the normal level of 67% to 70% occupancy.

(E. By.)

## Housing.

The acute housing problem in the United States was not solved in 1947 despite increased production and more speedy completions. Although housing starts mounted almost to the number built in the 1925 peak year of housing production, the estimated 825,000 new units did not equal the
900,000 new families. Nor did it add up, along with the 776
units (permanent and temporary) built in 1946, to the goa
2,700,000 set for the two years 1946–47. When this goal was
it was stated that, when met, it would still leave 1,958,000 f
ilies without homes and that the families ill-housed would
be ill-housed, for the figures did not include replacements.
this reckoning, at the end of 1947 approximately 3,056
families still needed homes and approximately 4,100,000 ho
in need of major repair still needed repair or replacem
(12,663,000 of the 41,700,000 dwelling units in the U.S. in
were either in need of repair or without a private bath
flush toilet.)

On the basis of figures compiled by the U.S. bureau of
census, the Institute of Life Insurance reported that more f
ilies were living doubled up in 1947 than ever before. The st
of population surveys made in April showed that about 2,7
000 married couples or 8.3% of all couples living in pri
households, were sharing living accommodations with other
sons at that time. The high cost of living was also a fa
causing home sharing.

Great emphasis was placed upon the necessity of buildin
large number of homes for rent, but only about 8% of th
built were for rent. Building also lagged in many of the la
cities. In the first 8 months of 1947 the number of nonfed
family units started in 46 of 92 large cities surveyed was be
that started in the same period in 1946, which was a very
construction year.

Urban construction suffered because high land and const
tion costs in these areas made it practically impossible for
builder to build within the top cost limit of $1,800 per r
set by the Federal Housing administration for FHA insu
rental projects. Builders and mortgage investors unprote
by FHA insurance were afraid to put money into rental hou
built at high cost when there was a possibility that the p
erties might have to compete in future years with new impro
construction built at lower cost.

Congress enacted no new positive housing legislation in 1
It ended building controls, relaxed rent control and repe
the 1946 veterans' housing program. The Taft-Wagner-Eller
comprehensive housing bill was reported out by the se
banking committee but was not passed by the senate; it sta
in committee in the house. A very small amount of pu
housing authorized before the war was permitted to proceed
the passage of the McCarthy bill. Local housing authorities
been unable to start construction on 13,317 urban housing u
and 10,000 units in rural sections because construction c
were well above the price limitations set by the old U.S. H
ing act. The McCarthy bill authorized cities to go ahead if t
were willing to make up added costs out of their own fund

Representative Donohue (Dem., Mass.) proposed governm
"subsidy loans" in H.R. 1754 to absorb the difference betw
what veterans could afford to pay in rent and current cos
building rental housing. Loans would be made both to l
housing authorities and to private building sponsors—ba
building and loan associations, veterans' co-operatives, in
ance companies, developers. Loans would not have to be re
until all other charges had been met. If sponsors found it
possible to repay, the loans would become subsidy grants.
legislation, introduced late in the regular session, received s
cient notice to warrant expectations of attention in 1948.

On May 27, President Harry S. Truman sent a messag
congress proposing the creation of a new housing agency. Ur
the Reorganization act of 1945 the president had the powe
effect this reorganization unless congress passed a two-th
vote against it. Opponents of the measure, though vocal.
not muster sufficient votes against it in the senate. There

RIAL VIEW of parts of Stuyvesant Town (foreground) and Peter Cooper llage on Manhattan's east side, nearing completion in 1947. Together, the o housing developments were to accommodate 11,250 families, with renting eference given to veterans

n July 27, 1947, the National Housing agency, created as a mporary agency under the president's war powers was super- ded by the Housing and Home Finance agency, a permanent ousing agency.

Stating frankly that it recognized the serious need for hous- g in the U.S. but had not yet agreed on a definite long-range ousing policy, congress authorized an investigation of all hases of housing just before adjournment of the regular session. n the meantime, congress made severe cuts in the appropria- ons of all of the units of the Housing and Home Financing gency (HHFA). The office of the housing expediter, which had een separated from that of the administrator of the National ousing agency early in the year, was kept separate by con- ressional action and was given rent control administration hen the Office of Price Administration expired. However, it as given a lean budget and had barely enough staff to admin- ter rent control and no staff to expedite housing construction.

An additional $35,500,000 was appropriated to complete the oving of temporary housing erected during the war from their cations, and re-erecting them to provide shelter for veterans.

Public law 239, approved by the president on July 25, 1947, arted the two-year period for the removal of temporary war ousing which was provided for by the Lanham act. This meant at all temporary war housing, except that which was needed or orderly demobilization, must be removed by July, 1949.

On Aug. 5 the president approved a $200,000,000 increase in e amount of mortgage insurance permitted under Title VI of e National Housing act. The law permitted the president urther to increase the authorization by an additional $200,- 00,000, bringing the total Title VI authorization to $4,200,- 00,000. Title VI, the main prop of the emergency-housing rogram, was given an additional $750,000,000 in the special ession, but the discussion at that time cast doubt upon 1948 ction to enlarge and extend Title VI beyond its March 31, 48 expiration date.

Public law 132, continuing the life of the Reconstruction Finance corporation until June 30, 1948, eliminated the authority of the RFC to provide a secondary market by purchasing mortgages guaranteed or insured under the G.I. Bill of Rights.

By the year's end the home builders and consumers were in a dilemma about new housing. They had seen the black market flourish under price control; they had seen building materials bootlegged and houses sold with expensive side-sales. And when all controls were lifted, prices skyrocketed. Price control was imperfect and the free market had not brought the desired relief. Allocation of scarce materials was said to be the answer. Others suggested price control limited to scarce materials. By mid-December, congress had not taken any action.

Action upon rent control was also awaited, for the Federal Rent Control act was due to expire Feb. 29, 1948. Under the provisions of the Housing and Rent act of 1947 passed July 1, landlords and tenants were permitted to agree "voluntarily" to a rent increase not exceeding 15% with a lease running through Dec. 31, 1948. Hotels were exempted and dwelling units completed after Feb. 1, 1947, were exempted from rent control unless their construction had been assisted by allocation of priorities. Eviction controls were eased, and enforcement of rent ceilings was weakened. In his message to congress on signing the bill, President Truman termed the law "most unsatisfactory" and "inadequate." In his message opening the special session of congress on Nov. 17, the president asked congress "to extend and strengthen rent control."

On Sept. 9, the Veterans' administration created a stir by attacking the high percentage of defective or inferior dwellings being sold to veterans and by promising disciplinary action against offending builders and mortgage lenders.

An even greater stir was created on Aug. 27 when a federal grand jury indicted the National Association of Real Estate Boards (N.A.R.E.B.) and the Washington Real Estate board on charges of violating the antitrust laws with "universal conspiracy to restrain trade in the housing field by fixing commission rates for real estate dealers."

Everyone considered housing a serious problem by the year's end. There were few technical solutions at hand. The usual palliatives, subsidies and tax exemptions, were suggested as means of getting housing built for families of moderate and low income. Some emphasis was placed upon the responsibility of state governments to supply assistance. At least nine states passed veterans' housing legislation in 1947.

**American Legion Housing Bill.**—The American Legion prepared a bill which was introduced the first week of the special session by Representative Edith Nourse Rogers, Senator Edward Martin and Representative Gordon L. MacDonough. It authorized any five or more veterans to establish "Veterans' Homestead associations" as nonprofit organizations to build, sell, purchase, rent, maintain or operate housing for veterans of World War II. Each member would pay $100 to be applied to his purchase or as rent security on housing limited in cost to $10,000 per unit. Permanent financing was to be provided by 40-year tax-exempt bonds secured by all of the associations' property and guaranteed as to principal and interest by the federal government. Earnings of the homestead association were to be exempt from all taxation. The bill authorized appropriations of $200,000,000 to the Federal Works administration to provide 50% grants for construction of utilities; *i.e.*, highways, schools, playgrounds, bus and fire stations, etc.; $100,000,000 for loans to associations and guarantee of association bonds; and other funds to cover Veterans' administration expenses. The act would be operative for 10 years following the declaration ending war.

The bill, carrying these frank and hidden subsidies was expected to receive favourable action in 1948 because no vocal legislative opposition was anticipated just before the national election. Many feared that, because the bill lacked protective features, veterans might not reap the advantages which the subsidies would warrant but that they might be taken by promoters and by inefficiencies due to inexperience. Efforts were being made to have the bill "tightened" to avoid such possibilities. (*See* also ARCHITECTURE; BUILDING AND CONSTRUCTION INDUSTRY; BUSINESS REVIEW; CENSUS DATA, 1947; FEDERAL WORKS AGENCY; MUNICIPAL GOVERNMENT.) (D. RN.)

**Housing and Home Finance Agency.**—The Housing and Home Finance agency was established on July 27, 1947, under Reorganization Plan No. 3 of 1947, submitted by the president and approved by the senate. The reorganization plan groups the principal permanent housing functions of the government in a single agency. With establishment of the HHFA, the wartime National Housing agency was abolished.

The HHFA covers remaining war housing responsibilities and housing functions that before World War II were scattered among 13 agencies in 7 departments and independent establishments of the government. It includes the office of the administrator and the following constituent operating agencies: the Federal Home Loan Bank board, the Federal Housing administration, and the Public Housing administration. The FHA and the PHA each have a commissioner as the administrative head of its organization, while the Federal Home Loan Bank board is composed of a bipartisan group of three. All are appointed by the president and confirmed by the senate.

In addition, the plan established the National Housing council on which the administrator, the constituent agencies, and other government departments with direct housing functions are represented. The council includes the administrator of the HHFA, who serves as its chairman, the commissioners of the FHA and the PHA, the chairman of the HLB board, the secretary of agriculture, the chairman of the board of the Reconstruction Finance corporation, and the administrator of Veterans' affairs, or designees of the latter three.

The National Housing council, which meets at least once each month, serves as a medium for securing the most effective use of all the housing functions and activities of the federal government, for obtaining consistency between these act
and the general economic and fiscal policies of the govern
and for avoiding duplication and overlapping of activitie

The administrator of the Housing and Home Finance a
is responsible for the general supervision and co-ordinati
the functions of the three constituent units making up th
agency. In addition, the administrator is charged by law
the responsibility for the direction and supervision of the
agement and disposition of federally owned war housing
for completing the temporary housing program for vet
Under appropriate delegations, the Public Housing admin
tion carries out the operating responsibilities of managin
disposing of federally owned war housing and of comp
the veterans temporary housing program in accordance
the general policies established by the administrator.

*Home Loan Bank Board.*—This agency supervises the
eral Home Loan Bank system and the Federal Savings and
Insurance corporation—two permanent agencies establish
encourage economical home financing, and to protect sa
HLBB also directs the liquidation operations of the Home
ers' Loan corporation (85% liquidated by the end of 1
The Federal Home Loan Bank system was organized in
as a nation-wide home-mortgage credit reserve for me
savings and loan associations and other home financing
tutions. At the end of the year, there were approximately
institutions with total resources of approximately $11,000
000 affiliated with the system. More than 5,000,000 invest
more than 2,500 savings and loan associations with com
assets of $8,000,000,000 were protected by the Federal Sa
and Loan Insurance corporation which insures, up to $
money invested in institutions of this type.

*Federal Housing Administration.*—This agency was e
lished in June 1934 by the National Housing act "to enco
improvement in housing standards and conditions, to cre
sound mortgage market, and to provide a system of m
mortgage insurance." The FHA does not itself lend money
insures private lending institutions against loss on resid
and property improvement loans meeting FHA standards.
its establishment in June 1934 through the end of 1947
FHA insured approximately $10,500,000,000 of loans mad
private financial institutions and had assisted 8,500,000
families to obtain better housing. Emphasis during 194
encouraging the construction of rental housing brought a
cations for more than 100,000 new dwelling units for V
War II veterans and their families. In 1947 it was also
authority to insure capital advances to manufacturers of
fabricated housing and loans for the purchase of permanen
housing sold by the federal government.

*Public Housing Administration.*—The major activity of
agency is the low-rent and slum clearance program unde
U.S. Housing act, transferred from the U.S. Housing auth
In addition, the PHA has operating responsibility for the
agement of public war housing during the period of reco
sion and demobilization, the disposition of federally-owned
housing, and also the program of providing temporary ho
for veterans by relocating and converting surplus war ho
and military structures for reuse as veterans' temporary d
ings. An additional appropriation of $35,500,000 during
brought the total funds available for this latter progra
$480,627,000. Including the projects financed by local
munities and organizations, a total of 260,000 accommoda
for veterans would be provided by this program, more
half of which would be located at educational institutions fo
use of student veterans. By mid-1947 more than 85% o
total program had been completed. (*See* also LAW.)

(R. M. F

**Canada.**—The Government's housing target of 80,000 com-eted units in 1947 reached only 74,000 units, but that was tter than 62,500 units in 1946 and 48,000 units in 1945. (The st prewar years, the late 1920s, averaged 57,000 units an-ually.) Chief bottlenecks continued to be soil pipes, nails, rdwood flooring and wallboard.

In the 12 months to May 1947, prices of building materials creased 7½%, construction wage rates 15%, and construction sts in general 11%. Another major obstacle to the comple-on of more homes in urban areas was the lack of serviced land, actically all of which had been used by the expanding program.

To encourage construction, the government took various eps. In February, owners of new housing units were allowed epreciation at double rates, amortization periods were extended nd priorities on material were broadened. In September, con-ols covering everything from nails to plywood, from millwork fittings, were lifted. In December, housing was given steel iority.

The crown-owned Central Mortgage and Housing corporation pened a Better Farm House competition late in the year, organ-ed on a provincial basis, and offered $3,600 in prizes. The Cor-oration estimated that in 1947 about 130,000 Canadians wanted rent houses and 45,000 wanted to buy them. (C. Cy.)

**Great Britain.**—Post-war housing policy in Great Britain was overned by the need to make up the ground lost by the virtual oppage of house-building during World War II, to replace ouses destroyed during the war, and to house the increased umber of families requiring separate dwellings. At the end of e war it was estimated that 750,000 dwellings would be re uired to meet the immediate needs and a further 500,000 to eplace slums. By Nov. 1947 accommodation provided totalled 6,972 family units, more than half of which consisted of new ermanent and temporary houses and the remainder of existing remises requisitioned by local authorities or converted by pri-ate owners, or unoccupied war damaged dwellings which had een repaired.

In view of the heavy demand for houses, the high cost of uilding and the shortage of materials at the end of the war, ome order of priority in housing was necessary, and the gov-rnment decided that the criterion should be relative need. From rewar experience they considered that the greatest need was to e found among those who wanted houses to rent, and priority as accordingly given to houses built for renting. Local author-ies, who built for renting before the war and were in the best osition to judge relative need in their areas, thus became the atural agents for the government's policy. By means of gov-rnment subsidies they were able, in spite of the increased cost f building, to let their houses at rents which those who needed hem could afford to pay. The building of houses by private nterprise for sale was controlled by licences, so that the reater part of the available labour and materials was directed nto local authorities' schemes. Private builders were, however, ill doing most of the house-building, because most local author-ies did not actually build their own houses but relied on the rivate builder working under contract.

In spite of high costs and shortages the postwar council ouses were better than those built before the war. Expert con-deration was given to the design and equipment of local au-ority houses during the war and resulted in larger and better-quipped houses in the present schemes. The three-bedroom ouse for the family of five was the most common type pro-ided by local authorities, but houses of varying sizes were rovided for larger or smaller families, as well as for single or d people.

While most of the council houses were of the traditional rick-built type, a place in the program was given to prefabricated methods of building which economized on certain types of labour and materials. A program of temporary prefabricated houses was launched before the end of the war to meet the immediate postwar demand while the building industry was getting into its stride. These houses were supplied by the government and built on land provided and serviced by the local authorities, who paid an annual charge for the houses to the government, controlled the lettings and fixed the rents. In this program prefabrication produced well-built houses whose occupants were well satisfied with them. The government also launched two large schemes for permanent prefabricated houses: a steel-framed house known as the B.I.S.F. (British Iron and Steel federation) and intended for urban areas, and the Airey house, constructed of prefabricated concrete units and designed for rural areas. The B.I.S.F. and Airey houses were of the three-bedroom type. Other types of prefabricated houses were also being provided by local authorities.

Progress on the building of new houses during 1947 was handicapped by the severe winter, the fuel crisis and the continuing shortage of some important building materials. During 1946 efforts had been concentrated on securing a start on housing by every local authority. Though successful, these resulted in the letting of contracts for more houses than could be completed in reasonable time with limited resources of labour and materials, and policy for 1947 was directed toward establishing a more balanced program. A White Paper, published in January, envisaged the completion, by the end of the year, of 240,000 permanent houses out of a cumulative total of 600,000 in tenders approved and licences issued, with 60,000 temporary houses completed in the same period. By the end of March, however, it became obvious, as a result of the severe weather and the fuel crisis, that this program could not be achieved, and efforts were directed to the completion of as many as possible of the houses already under construction. The latest figures (Nov. 30, 1947) showed that 180,154 permanent houses had been completed out of a cumulative total of 512,631 in tenders approved and licences issued. The corresponding figures for Dec. 31, 1946, were 58,206 and 366,222 respectively. Thus, although progress on the completion of houses fell below expectations, a better balance between houses planned and houses completed was achieved in the program as a whole. The temporary house program was well on the way to completion with a total of 135,298 houses finished by Nov. 30.

**Europe.**—Housing in Europe faced difficulties similar to those of Great Britain, but in many cases greatly increased by war destruction. Countries such as France and the Netherlands were concentrating on the replacement of war-destroyed houses. Working-class housing in most European countries had been provided by subsidized private enterprise and state-aided housing associations and it appeared that these agencies would carry out most of the postwar housing. Their task was made difficult by greatly increased building costs and shortages of materials and labour. These were problems for the consideration of the newly-formed Housing Panel of the Economic Commission for Europe, which held its first meeting in Geneva at the beginning of Oct. 1947. (J. Cw.)

**Housing Administration, Federal:** *see* HOUSING.
**Housing Agency, National:** *see* HOUSING.
**Housing and Home Finance Agency:** *see* HOUSING.
**Housing Authority, U.S.:** *see* HOUSING.

## Houssay, Bernardo Alberto

(1887– ), Argentine physiologist, was born on April 10 in Buenos Aires, Argentina. He studied pharmacy and medicine in his native city, secured his M.D. degree in 1911 and thereafter was associated with the University of Buenos Aires in various academic posts, becoming at one time director of the Institute of Physiology at the Faculty of Medicine. One of Argentina's outstanding scientists, he was honoured by about 40 universities the world over for his research on diabetes, endocrinology and the toxic effects of snake, spider and scorpion bites.

In 1946, Dr. Houssay fell out with the government of Gen. Juan D. Perón and resigned under pressure his professorship in physiology at the University of Buenos Aires. A year later (Oct. 23, 1947), he was awarded the Nobel prize in medicine jointly with Drs. Carl and Gerty Cori of the United States. Specifically, the Argentine scientist was singled out for his discovery of the significance of the hormone produced by the pituitary gland.

Irked by the honour given to an opponent of the Perón regime, *Epoca,* a government newspaper, charged that the award to Houssay had been made on "political grounds." Dr. Houssay's reaction to this accusation was that "little things" ought not be confused with the "big."

**Human Nutrition and Home Economics, Bureau of:** *see* Agricultural Research Administration.

## Hungary.

A republic of southeastern Europe bounded on the west by Austria, on the north by Czechoslovakia, on the east by Rumania and on the south by Yugoslavia. Area: 35,912 sq.mi. (in 1947). Pop. (1941 census) 9,316,613, (est. 1946) 9,309,000; chief cities (pop. 1941): Budapest (cap., 1,164,963; pop. 1944, 832,800); Szeged (136,752); Debrecen (125,933); Kecskemét (87,269). Languages: Hungarian, with some German, Slovak, Croat, etc. Religion: mainly Christian (Roman Catholic, Greek Catholic and Evangelical) with Moslem minority. President: Dr. Zoltan Tildy; prime minister: Lajos Dinnyes.

**History.**—In January about 100 arrests were made by the political police, alleging a plot by an organization called the "Hungarian Community" headed by Gen. Lajos Veress de Dalnok. A people's court subsequently sentenced General Veress and the deputy George Donath and others to death; still others were sentenced to hard labour. On appeal in October two of the death sentences were commuted and many of the prison terms were reduced, but Donath was executed on Oct. 3. Foreign observers and Hungarians abroad dismissed the plot as it was presented in its official version—which spoke of an attempt to restore Adm. Nicholas Horthy's regency—as implausible, but the case made it evident that highly placed elements of the former Hungarian armed forces and administration contemplated anticommunist changes in the event of the withdrawal of the soviet forces. The plot had far-reaching political consequences. Parliament refused to waive the immunity of deputy Bela Kovacs, general secretary of the Small Landholders' party, but he was arrested by the soviet authorities. A strongly worded U.S. and British protest against this arrest was turned down by the soviet president of the Allied Control commission in Budapest, Gen. V. P. Sviridov.

In February, at the congress of the Social Democratic party, substantial progress was registered by the socialist group, led by vice-premier Arpah Szakasits, which favoured a close cooperation with the communists. Communist and socialist warnings were given to the Small Landholders' party that unless they collaborated more fully with the left wing parties the coalition would be ruptured.

The political scene was dominated by this impending crisis in the coalition until the last days of May, when Prime Minister Ferenc Nagy, on vacation in Switzerland, was requested to resign office,

PEACE MONUMENT memorializing the defenders of Budapest in World W
which was built by Russian occupation forces in Hungary and erected
above the city on the Buda side of the Danube in April 1947

turn, on the grounds that the inquiry into the Kovacs case
produced evidence against his closest collaborators and ag
himself. He refused at first to comply with this request c
resign office, but after communicating several times with B
pest by telephone, he consented to sign his resignation on
dition that his son, aged four, who he feared would be reta
as a hostage in Hungary, be brought to Switzerland to join
As soon as the document of resignation was signed, he left
the United States. A joint declaration of Agrarian lea
against soviet interference and communist predominanc
southeast Europe was published by Nagy in the United St
with Vladimir Maček for the Croat, Milan Gavrilovich for
Serb and G. M. Dimitrov for the Bulgarian Peasant par
Nagy's successor, Lajos Dinnyes, was appointed on May
Several Hungarian government representatives in foreign c
tals, including Paul Auer in Paris, Ferenc Gordon in Bern
Istvan Szegedy-Maszak in Washington, did not accept the
cial explanation that, as Dinnyes was a member of the S
Landholders' party like his predecessor, no substantial cha
had occurred, and sent in their resignations. Father Bela Va
president of the national assembly, and other eminent S
Landholder politicians took refuge abroad.

The assembly elected in Nov. 1945 was dissolved and
elections were announced for Aug. 31, 1947. Dezsö Sul
leader of those Small Landholders who were dissident or
had been expelled under communist pressure from the pa
and who were grouping under a new name as the Freedom pa
was barred from the election. Under the leadership of Zo
Pfeiffer, however, the Freedom party stood for the elec
under the new name of the Independence party. Other opp
tion groups were a new Democratic People's party with Cl
tian-social tendencies (led by Istvan Barankovics, a well-kn

tholic journalist), and the Radical party, which had no suc- s in the 1945 election, but whose ranks were now swelled Karoly Peyer, Social Democratic leader, and veteran Social emocrats who disapproved of the trend of their party. Many squalifications in the new electoral law reduced the number of ctors by about 500,000, and led to protests by the British and S. representatives of the control commission. On Aug. 31 the ctions took place: 3,007,027 votes (60%) were counted for e government coalition, which retained 269 seats, and 1,989,- 6 votes (40%) for the opposition, which received 143 seats. nong the coalition parties, the communists increased (in com- rison with Nov. 1945) from 17% to 21%, the Small Land- lders were reduced from 57% to 15% and the socialists from % to 14%. The most favoured among the opposition groups re the People's party (16%) and the Independence party 4.4%).

On Sept. 16 the peace treaty came into force, and the Allied ntrol commission, presided over by General Sviridov, with- ew, although soviet forces remained to protect the lines of mmunication with their occupation zone in Austria. The in- rnal scene showed symptoms of tension between communists d socialists; the meeting of European Communist parties in land and the establishment of the Cominform in Belgrade in tober rendered the position of the Social Democratic cabinet nisters uneasy, because they were regarded as representing ks with western socialism and especially with the Labour vernment in Britain.

In November Karoly Peyer and Zoltan Pfeiffer, deprived of rliamentary immunity, took refuge abroad to avoid arrest; e validity of the mandate of the 49 deputies of the Freedom rty was contested. A stricter control was established over ungarian passports. Meanwhile, the communist leadership it- lf seemed to undergo an internal crisis. Vice-Premier Matyás akosi's illness was officially announced, and authoritative pub- statements on behalf of the party were usually made by rnest Gerö, minister of communications.

On Dec. 8 in Belgrade Marshal Tito and Dinnyes signed a eaty of friendship, co-operation and mutual aid between Yugo- avia and Hungary. (B. Me.)

**Education.**—(1939) Elementary schools 8,103, scholars 1,104,910; gher schools 263, scholars 79,435. (1942–43) Budapest only: nursery hools 111, scholars 11,174; elementary schools 234, scholars 73,483; condary schools 83, scholars 31,643; universities 2, students 12,858; her colleges 14, scholars 2,454. There were six universities in the whole Hungary.

**Finance.**—Revenue (1946–47) 4,045,876,000 florints; expenses, 4,420,- 5,000 florints. Note circulation (Aug. 1947) 1,754,000,000 florints; gold serve U.S. $30,000,000; commercial bank deposits 505,000,000 florints; rrency: florint which superseded the pengö in 1946. 1 florint=0.0757 g. e gold.

**Trade and Communication.**—Foreign trade: imports (1946) 370,800,000 rints; exports (1946–47) 92,400,000 florints; communications: roads 946) 18,508 mi.; railways (1946) 5,416 mi.

**Mineral and Industrial Production.**—(July 1946–June 1947) in short ns: coal 956,500; pig iron and ferroalloys 273,600; steel ingots and stings 533,600; cotton fabric 119,200; crude petroleum 709,600.

**Agriculture.**—(est. production 1947) in short tons: wheat 1,324,000; e 539,900; barley 448,600; oats 206,500; potatoes 2,105,600; sugar ets 1,357,500; fodder turnips 2,682,000; melons and watermelons 264,- o; green paprika 19,400; tomatoes 73,260; onions 53,750; sunflower ed 173,560; tobacco 19,450. Livestock pop. (1947): cattle 1,404,758; rses 456,897; pigs 2,106,417; sheep 474,003; goats 88,618; fowls 66,161; geese 859,555; ducks 878,279; turkeys 124,752. (*See* also UMANIA.)

**unting:** *see* WILDLIFE CONSERVATION.

**urdling:** *see* TRACK AND FIELD SPORTS.

**usseini, Haj Amin el** (1900– ), Arab politician and grand mufti of Jerusalem, as born in 1900 and educated at El Azhar university in Cairo, gypt. Husseini, appointed grand mufti of Jerusalem in 1921, as the prime instigator of antisemitic disturbances in Pal- tine. Forced to flee from the Holy Land in July 1937, usseini made his way to Rome and Berlin after the outbreak of World War II and broadcast anti-Jewish propaganda over axis radio channels to the middle east. (Husseini denied in a statement made May 12, 1947, that he had ever plotted with the nazis against the Jews.) After Germany's collapse, he crossed into Switzerland, but that country deported him to France. However, he escaped from France under mysterious circumstances and on June 20, 1945, he turned up in Alexandria, Egypt.

In 1947 Husseini, still an exile of Palestine, resumed his role as chairman of the Arab Higher committee and issued violently anti-Jewish statements from Cairo. Opposed to partition of Palestine, he rallied many Moslems to his cause and organized the National Treasury, ostensibly for the purpose of raising defense funds. On Oct. 8 the mufti made a dramatic arrival in Alia, Lebanon, to confer with the Arab League council on military measures to oppose partition.

**Hutchins, Robert Maynard** (1899– ), U.S. educator, was born on Jan. 17 in Brooklyn, N.Y. His father, William James Hutchins (1871– ), minister and theologian, was subsequently president of Berea college in Berea, Ky. Hutchins left Oberlin college, Oberlin, O., in 1917 to enlist in the U.S. ambulance corps, winning the *Croce di Guerra* in action with the Italian army. Entering Yale university, New Haven, Conn., in 1919, he received his A.B. in 1921 and his LL.B. (*magna cum laude*) in 1925, subsequently receiving honorary degrees from many colleges and universities. In 1923 he was appointed secretary of Yale university and in 1927 dean of its law school. In 1929, at the age of 30, he became the fifth president (and, in 1945, the first chancellor) of the University of Chicago, where his reforms and proposals for reform made him one of the best-known and most controversial figures in the history of U.S. education.

In 1947, Hutchins returned to his university post after a year's leave of absence in which, as chairman of the board of editors of Encyclopædia Britannica, Inc., he devoted himself to the spread of adult education through the reading and discussion of great books and established the Great Books foundation for the organization of community discussion groups and the training of group leaders all over the U.S. and Canada.

Prior to his assumption of the editorial board chairmanship, Hutchins was chairman of the executive committee of Britannica's board of directors, a director of Encyclopædia Britannica Films Inc., and editor in chief of a set of great books scheduled for publication in the near future.

His university activities in 1947 included the consolidation of the famous Chicago college plan of a four-year liberal arts curriculum beginning with the usual junior year in high school. He announced the establishment of the Cancer Research foundation at the university and completed the establishment of the Institute of Radio-Biology and Biophysics and the Institute of Metals, for research in the physical and biological adaptations of atomic energy. Although he opposed the entrance of the United States into the war in 1940 and 1941, the University of Chicago, under his administration, played a central role in the development of the atomic bomb.

In 1947 he also campaigned, in speeches and writings, for international civilian control of atomic energy and against peacetime military conscription. Calling for immediate world organization and the abandonment of national sovereignty as the only hope of saving civilization from atomic destruction, he headed the Committee to Frame a World Constitution, which completed and circulated among world scholars and political leaders a draft of a world constitution.

Hutchins was also chairman of the Commission on Freedom of the Press, which declared in its report, *A Free and Responsi-*

*ble Press,* published in 1947 by the University of Chicago Press, that "the press must be accountable. It must be accountable to society for meeting the public need and for maintaining the rights of citizens and the almost forgotten rights of speakers who have no press. It must know that its faults and errors have ceased to be public vagaries and have become public dangers. The voice of the press, so far as by a drift toward monopoly it tends to be exclusive in its wisdom and observation, deprives other voices of a hearing and the public of their contribution. Freedom of the press for the coming period can only be continued as an accountable freedom." (M. S. Mr.)

**Hygiene, Industrial:** *see* Industrial Health.

## Ibn-Sa'ud

(1880?– ), king of Saudi Arabia, was born about 1880 in Riyadh, the son of 'Abd-al-Rahmān, leader of the Wahabi sect of Arabs. Ibn-Sa'ud was christened 'Abd-al-'Azīz Ibn-'Abd-al Rahmān Ibn-Faisal Ibn-Sa'ud. For his early career, see *Encyclopædia Britannica.*

In 1933 Ibn-Sa'ud granted concessions for exploitation of his oil-rich lands to U.S. oil companies. The rentals from these leases made him independently wealthy; it was estimated that when Saudi Arabian oil output reached its anticipated peak in the early 1950s, the king would receive about $50,000,000 annually.

Ibn-Sa'ud was neutral during World War II, although he favoured the British. Opposed to the establishment of a Jewish homeland in Palestine, he criticized Pres. Harry S. Truman's appeal for admission of more Jewish immigrants into the Holy Land and in a letter to the president, Oct. 17, 1946, declared that Truman's statement violated previous presidential promises to the Arabs. Early the following year (Feb. 18, 1947), Truman conferred a Legion of Merit medal on the Arabian ruler for services to the Allied cause in the war; the medal was accepted by Ibn-Sa'ud's eldest son, then in Washington.

**ICC:** *see* Interstate Commerce Commission.

## Ice Cream.

Total U.S. production of ice cream in 1947 was estimated at 622,400,000 gal., 12% less than in 1946, but 42% above the average for 1941–45. The output increased about 80% when the controls of manufacture were removed in Sept. 1945; in 1946 the high record production of 740,470,000 gal. was reached. The amount of milk and cream available was about the same in 1947 as in 1946 but the public demand slackened somewhat as prices rose. Sugar was available in ample amounts.

States of highest production were Pennsylvania, New York, Illinois, California and Ohio. Per capita consumption was estimated at about 18 lb. in 1947 compared with nearly 20 lb. in 1946, and 10 lb. in prewar years. (J. C. Ms.)

## Ice Hockey.

Canada, as usual, scored a "double" in National Hockey league competition. Les Canadiens of Montreal won their fourth straight league title, and the Toronto Maple Leafs captured the Stanley cup with playoff decisions over Montreal, four games to two, in the final. The National Hockey league, the major circuit of the sport, virtually reached the saturation point of its seating capacity with league, team and game attendance records. The six teams played to 99.6% of their seating capacity, with Chicago again leading the circuit with a record total of 521,831 customers for 30 home games. The Chicago Black Hawks also drew the largest crowd to witness a hockey game, a turnout of 20,004 on Feb. 23 for a clash with Boston. The most amazing aspect of the Chicago attendance records was that the Black Hawks were in last place most of the season. In all, the National Ho league drew 2,424,260 fans, almost 425,000 more tha 1946–47.

Montreal and Toronto finished first and second, respecti in regular league play, with Boston and Detroit third fourth, to make up the playoff field. The Canadiens def Boston and Toronto eliminated Detroit, both by four g to one, in the semifinals.

Max Bentley of Chicago again closed the season as leading individual scorer with 29 goals and 43 assists, bu linquished the Hart trophy—emblematic of the league's " useful" player—to Maurice Richard of Montreal. Richar the league in goals with 45.

William Durnan of Montreal established a new recor winning his fourth straight Vezina trophy as the league's standing goalie. The Calder trophy, awarded the outstan rookie of the year, went to Howard Meeker of Toronto, Robert Bauer of Boston won the Lady Byng trophy as league's most gentlemanly player.

Four members of the Montreal Canadiens were named t coaches' all-star team—Bill Durnan at goal, Kenneth Rea and Emile Bouchard at defense and Maurice Richard at wing. Milton Schmidt of Boston, centre and Doug Bentle Chicago, left wing, completed the team.

Hershey, Pa., emerged as American league champion w four-out-of-seven-game victory over Pittsburgh in the pl final. Hershey won the eastern division race, while Cleve topped the western sector.

Kansas City, Mo., again won the U.S. Hockey league c pionship by defeating Omaha, Neb., in the playoff final, games to one. Kansas City finished second to Omaha in northern division race, while Dallas, Tex., won the sout division.

Dartmouth college tied the University of Toronto for intercollegiate hockey crown, their playoff game resulting 2–2 deadlock. The Dartmouth team, playing as the Han N.H., Indians, won the National Amateur Athletic union c pionship with a 6 to 2 victory over Boston Amateur ass tion. Czechoslovakia won the world's amateur hockey title.

(M. P. W

## Iceland.

An island republic of the North Atlantic. A 39,768 sq.mi.; pop. (census 1940): 121,474; 1945) 126,000. Capital: Reykjavik, the only large town ( 1945 est. 46,000). Religion: Lutheran Christian. Presid Sveinn Björnsson. Prime minister: Olafur Thors (whose year-old coalition government resigned on Oct. 10, 1946, continued to function on an interim basis until Feb. 3, 19 after Feb. 3, Stefan Johann Stefansson.

**History.**—The long government crisis lasted all through autumn of 1946. It had been inaugurated by Communist o sition to the new agreement with the United States. Accor to this agreement U.S. military personnel were withdrawn Keflavik airport, but a small civilian staff remained and Ar cans were to have rights to use the field as long as the occupation of Germany continued. On this issue the two C munist ministers left the government, but a new ministry not formed until Feb. 1947. Replacement of the Commu by the two Progressives gave the administration a shift to the right.

Iceland's inflation, serious during World War II, became r troublesome in 1947. The price index, using 100 for 1939, at 285 at the opening of 1946, 302 in Oct. 1946, 310 in 1947 and 325 in Oct. 1947. One of the pieces of foresigh the war period was to set aside 300,000,000 kr. as a re struction fund. This profit from war trade and occupation ing used in 1947 to buy machinery. The adverse balance of ade was therefore nothing to cause concern. A favourable ring fishing season made prospects bright, but the summer ought disaster. While drought plagued western Europe and uch of the U.S., Iceland was soaked with rain; hay would not y, and farmers with livestock were in a precarious position. eantime, the summer herring fishing was largely a failure, and eland's chief means of obtaining foreign exchange suddenly sappeared. Hence, prices rose and the country had to revoke nport licences for all but essential goods.

Before these events had brought discouragement, however, eland had contributed to U.N.R.R.A. and in voluntary aid to her countries 27,400,000 kr. since the end of World War II. nis was about 215 kr. per capita, a rate higher than that of ny other country except the U.S.

The most earnestly debated international dispute was Icend's demand for the return of manuscripts illustrating Icend's golden age in literature, collected by Danes and long ld in Danish collections. The Danish prime minister finally nounced that if Iceland had a moral right to the manuscripts should have them regardless of juridical rights and without mpensation in any form.

**Finance.**—Monetary unit: króna=15.4 U.S. cents. Notes in circulation ec. 31, 1945) 177,410,000 kr.; gold reserve (Dec. 31, 1945) 5,736,000 . Bank deposits were 452,421,000 kr. in July 1943. Note circulation mped from 24,580,000 kr. in Jan. 1941 to 123,810,000 kr. in Aug. 43; loans in the same period from 92,137,000 kr. to 170,594,000 kr. ld reserves and bank capital remained in 1946 practically at the 1939 ures. The government budget of 1939 had balanced at about 19,000,o kr. In 1945 expenditure was 143,000,000 kr. and revenues 165,000,o kr., giving a surplus of 22,600,000 kr. For 1947 the estimates were: penditures 146,000,000 kr., revenues 136,000,000 kr.

**Trade and Communication.**—In 1945 exports totalled 267,261,000 kr. d imports 319,755,000 kr.; 90% of the exports went to Great Britain d most of the rest to the United States while about 65% of the imrts were supplied by the United States and 21% by the United Kingm. Exports were almost entirely fish and fish products (95%); imrts consisted chiefly of: fuels and lubricants 26,000,000 kr., metal and ineral products 39,000,000 kr., machinery and appliances 31,000,000 ., textile products 56,672,000 kr., food products and tobacco 40,000,o kr. and wood cork and paper 26,000,000 kr. In 1946 and 1947 trade as shifting to the U.S.S.R. because of the inability of Britain and the nited States to use Iceland's fish at a good price.

Iceland has no railroads, but in 1944 highways totalled 3,107 mi. nere were 1,923 passenger cars, 192 buses, 1,991 trucks and 172 motorcles. Also in 1944 there were 11,500 telephones and 27,339 radio ts in Iceland.

American Overseas Airlines inaugurated a Washington to Reykjavik rvice March 17.

**Agriculture.**—For 1944 the chief crops were: field hay 140,000 metric ns, meadow hay 80,000 metric tons and potatoes 8,000 metric tons. Of e population, 30.6% was engaged in agriculture. The planted and eded area covered 135,000 ac. Livestock (1944) numbered: sheep 610,o, cattle 40,000, horses 60,000, goats 2,000, hogs 1,000, poultry 75,000 d fur bearers (fox and mink) 5,000.

**Fisheries.**—Of the population 15.9% was engaged in fisheries, and the tal product was 461,314 metric tons (1944).

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## ce Skating.

Ken Bartholomew, former G.I. from Minneapolis, Minn., returned to the U.S. throne he ccupied in 1942 by winning the national speed skating chamionship. He dethroned a fellow townsman, Bob Fitzgerald, by inning the final mile event of the nationals after each was tied or first with 140 points. Gerry Scott, also of Minneapolis, won ne women's senior speed title. She was intermediate chamion in 1946.

Mario Trafeli, 18-year-old Wayne university football player, on the North American speed title, defeating Ray Blum of aterson, N.J., 90–80. Betty Mitchell of Winnipeg, Man., won oth the North American and Canadian senior women's chamonships. Frank Stack of Winnipeg annexed the men's Canadian tle. Al Casale of Bloomfield, N.J., and Marion Hanley of New ork city were senior victors in the eastern speed tests, while lum and Miss Hanley triumphed in the mid-Atlantic chamonships.

Lasse Parkkinen of Finland won the world's speed crown, while Aake Segffarth of Sweden won the European championship.

BARBARA ANN SCOTT, of Ottawa, Canada, at Davos Platz, Switzerland, where she took the women's championship title in the European figure skating competition on Feb. 1, 1947

Richard Button of Englewood, N.J., and Barbara Ann Scott of Ottawa, Ont., highlighted the figure skating, both in America and Europe. Button out-pointed Hans Gerschwiler of Sweden in the world's championship but lost the title on the decision of the judges. Miss Scott won the women's world title, with Daphne Walker of England second and Gretchen Merrill of Boston, Mass., third.

Button retained his national figure-skating championship and also added the North American title to his laurels. Miss Merrill captured both the national and North American championships. Other national titlists were: pair—Robert Swenning and Yvone Sherman of New York city; dance—Lois Waring and Walter Bainbridge of Washington, D.C. (M. P. W.)

## Idaho.

One of the far northwestern states of the U.S., belonging to the group regionally designated as the Pacific northwest and part of the original Oregon territory, Idaho is the 12th largest state with an area of 83,557 sq.mi. It was admitted as a territory by Pres. Abraham Lincoln in 1863 and became a state on July 3, 1890. It is popularly known as the "Gem state." Pop. (1940) 524,873, of which 66.3% was rural, 33.7% urban; (est. 1944) 531,573; (est. 1948) 560,000. The estimated population in leading cities for 1947 was Boise 34,300; Pocatello 24,500; Idaho Falls 19,800 and Twin Falls 16,200. There were 3,537 Indians in the state in 1940.

**History.**—State officers, all elected for the first four-year term in Idaho's history, were all Republican and took office on Jan. 6, 1947. Gov. C. A. Robins was the first chief executive ever to be elected from the northern panhandle section of Idaho. Other officials were: lieutenant governor, Donald S. Whitehead; secretary of state, J. D. Price; attorney general, Robert E. Smylie (appointed in November to succeed Robert Ailshie, deceased); auditor, N. P. Neilson; treasurer, Leila D. Painter; superintendent of public instruction, Alton Jones. The state senate and house were both of a large Republican majority, and U.S. congressional officers were Sen. Henry C. Dworshak, Republican; Abe McGregor Goff, representative from the first congressional district, and John Sanborn from the second, both Republicans, and Glen Taylor, Democrat, elected to the senate in 1944 for the six-year term. The state legislature adopted the Peabody institute survey recommendations, which completely revised the public school system of Idaho and gave higher salary increases to teachers.

**Education.**—The school problems were greatly increased with the reorganization plans adopted by the legislature. The University of Idaho southern branch at Pocatello was granted complete status as a four-year college by the legislature and became known as Idaho State college. Lewiston Normal school in north Idaho was granted similar status and renamed Northern Idaho College of Education and Albion normal became Southern Idaho College of Education with a four-year course. Total school population in elementary, high school and colleges and universities, in both public and parochial schools, totalled 121,904. Elementary enrolment showed a substantial increase in 1947 with 85,982 students and 2,988 teachers. High school enrolment was 30,286 students with 1,318 teachers. Universities and colleges showed an enrolment of 5,636 students with 400 instructors.

**Communications.**—During the calendar year of 1946 the Idaho highway department expended $5,119,408 for construction of highways and $3,386,994 for maintaining highways. It was estimated that the department would expend $7,800,000 for construction of highways during the calendar year 1947, and $2,700,000 for maintenance.

**Social Insurance and Assistance, Public Welfare and Related Programs.**—There are two institutions for the insane—one at Orofino and one at Blackfoot; a home for the feebleminded at Nampa; a school for the deaf and blind at Gooding and a state industrial school (reformatory) at St. Anthony, which was put under a new program in charge of M. F. Pratt, who came to Idaho from the famed Boys Town in Nebraska. The state tuberculosis hospital is at Gooding. The penitentiary located at Boise had an average of 213 inmates during the year 1947, with an ultimate capacity of 400.

**Agriculture.**—Main sources of income in southern Idaho are potatoes, sugar beets, beans, fruit, hay and dairying.

Table I.—*Principal Agricultural Products of Idaho, 1947 and 1946*

| Crop | 1947 | 1946 |
|---|---|---|
| Wheat, bu. | 40,449,000 | 34,846,000 |
| Corn, bu. | 1,012,000 | 1,092,000 |
| Oats, bu. | 7,348,000 | 7,216,000 |
| Barley, bu. | 10,767,000 | 9,345,000 |
| Sugar beets, short tons | 1,732,000 | 1,246,000 |
| Dry beans, cwt. | 2,325,000 | 2,142,000 |
| Dry peas, cwt. | 1,998,000 | 2,106,000 |
| Hay, tons | 2,430,000 | 2,430,000 |
| Potatoes, bu. | 29,480,000 | 41,160,000 |

Table II.—*Mineral Production in Idaho, 1946*

| Production | Unit | Value |
|---|---|---|
| Zinc | 138,750,000 pounds | $12,205,000 |
| Lead | 119,700,000 pounds | 12,089,700 |
| Silver | 5,985,000 troy ounces | 4,835,800 |
| Phosphate | 478,000 tons | 2,151,000 |
| Gold | 41,550 troy ounces | 1,454,250 |
| Antimony | 11,113,404 pounds | 1,055,231 |
| Cadmium | 494,501 pounds | 475,877 |
| Tungsten | 17,271 units W03 | 357,202 |
| Copper | 1,950,000 pounds | 313,950 |
| Mercury | 900 flasks | 79,200 |

**Mineral Production.**—Average figures for 1946 were made available late in 1947, since strikes and portal-to-portal legal procedure had held up the compilation. (C.A. Rs.)

**Illinois.** A north central state of the United States, admitted to the union in 1818, nicknamed the "Sucker state," sometimes called the "Prairie state." Total area 56,400 sq.mi. of which 55,947 sq.mi. are land. Pop. (1940) 7,897,241, including 3,957,149 males and 3,940,092 females; 7,504,202 white, 393,039 nonwhite. The census bureau estimated Illinois population on July 1, 1947, to be 8,221,000. Population classed as urban in 1940 was 5,809,650, rural not on farms 1,119,488, rural farm 968,103. Chicago (3,396,808) is the largest Illinois city, followed by Peoria (105,087); Rockford (84,637); East St. Louis (75,609); Springfield, the state capital (75,503).

**History.**—The outstanding 1947 event in state affairs was reapportionment of the state's congressional representation on the basis of the 1940 census. The legislature had refused to redistrict the state since 1901. The new apportionment created 26 districts of approximately equal population and increased the representation of the Chicago area from 10 to 13. Equally important was the equalization of districts in Chicago which had in 45 years reached such a degree of inequality that the 7th district had nearly 1,000,000 inhabitants and the adjoini district only 112,000. Dwight H. Green, Republican, wa ernor of Illinois in 1947.

Industrial and trade activity were at high rates in 1947 employment relief payments to the temporarily jobless dr to a low mark of 50,000 per week. Claimants for unen ment aid were 26% less in 1947 than in 1946. A total of 2 claimants were paid benefits.

The legislative session of 1947 was notable for spe money. A grand total of $1,008,427,622 was appropriated governor's estimated operating budget of $822,164,160 f 1947–49 biennium was raised to $871,339,600. The general was tapped for $15,000,000 for increased operating costs various state departments.

At the close of 1947 one-fourth of the state's 915,000 War II veterans had been paid the bonuses due them und service recognition law of 1946 which by referendum auth issuance of $385,000,000 in state bonds to pay $10 for month of home service and $15 for every month of ov service. Illinois taxpayers in the year 1946 also paid a to $3,545,699,996 in federal taxes of all kinds.

**Education.**—Public schools in Illinois in 1947 had 1,250,000 e tary and high school pupils. Of these, 257,228 were enrolled in C grade schools, a gain of 8,503 over the year before. Illinois is amo states contributing the lowest percentage of state funds to local bodies. This amount was raised from $54,646,216 in 1946 to $81 909 in 1947. The sum of $14,066,159 was appropriated for the teachers' colleges, and $60,083,000 for the University of Illinois ( nent improvements excluded).

**Social Insurance and Assistance, Public Welfare and Related Progra** Appropriations for public assistance (social welfare) during 1947 t $212,957,870; for state institutions (exclusive of permanent im ments) $69,034,745; penal institutions, $12,558,980.

The Illinois old age pension averaged $41 paid to 127,000 pens The state insists that children support aged parents. Total publ appropriated for the two year period 1947–49 was $212,637,870.

**Communications.**—The state highway commission placed under co $33,000,000 worth of highway improvements during 1947. The a before World War II was $21,000,000 per year. In addition, $15,00 for the program of farm-to-market roads was contracted for in The legislature in 1947 appropriated $112,062,256 for state high and $114,672,173 for local roads and streets, including farm-to-m roads projects. The Illinois highway system consisted of 13,683 high-type paved roads connecting with 75,000 mi. of minor feeder and lanes, of which 50,000 mi. were unsurfaced. Illinois had 11,76 of railway servicing 80% of the communities of the state.

**Banking and Finance.**—Banks operating under state charters in I on June 30, 1947, numbered 501. State banks outside of Chicag $1,341,349,051 of deposits. Within Chicago, state banks held depo $1,624,033,930. There were 375 national banks in the state. Total of all banks amounted to $11,653,742,000 including U.S. gover obligations of $5,886,299,000. Deposits amounted to $8,788,572,00 clusive of government and interbank deposits.

State tax collections increased in 1947. The sales tax amount $137,148,979 for the first 11 months of the year, a gain of $24,5 over 1946. State levies on 20,560,510 gal. of alcoholic liquors am to $3,419,345. The state debt consisted of $150,000,000 in nonc bonds due in 1954 and 1959, in addition to the soldier bonus bond and to be issued.

**Agriculture.**—Because of high prices, Illinois crops of 1947 were $1,300,000,000, an all-time high despite reduced yields of corn, oa soybeans.

Table I.—*Leading Agricultural Products of Illinois, 1947 and 194*

| Crop | 1947 | 1 |
|---|---|---|
| Corn, bu. | 343,492,000 | 514,3 |
| Soybeans, bu. | 65,196,000 | 75,0 |
| Oats, bu. | 117,005,000 | 168,6 |
| Wheat, bu. | 19,361,000 | 19,5 |

**Manufacturing.**—The value of products manufactured in Illinois in according to the last manufacturing census was $4,794,860,73 number employed was 688,800; total wages and salaries were 453,881. The principal industries and their value were: meat pa $479,501,224; steelworks and rolling mills $207,301,815; petroleu fining $122,933,528; tractors $121,550,621.

Table II.—*Production of Coal and Petroleum in Illinois, 1945, 1944 and*

| | 1945 | 1944 | 19 |
|---|---|---|---|
| Bituminous coal, net tons | 72,525,000 | 76,791,449 | 72,6 |
| Petroleum, bbl. | 75,210,000 | 77,413,000 | 82,2 |

**Mineral Production.**—Because of car shortages and frequent shut Illinois coal production in 1947 was disappointing, falling about 13 000 tons under the 1945 figure and 4,000,000 under the 1946 esti oduction of 63,767,000 tons. Only intensive drilling of new wells kept inois from showing a greater decline of oil production. Value of Illinois neral production in 1945 was $332,489,000. (L. H. L.)

**linois, University of.** George Dinsmore Stoddard, who became president of the Univer-y of Illinois in July 1946, was formally installed in May 1947.

New records in enrolment were set for the fall semester of 47 on the university's four campuses: at Urbana-Champaign ,449; Chicago professional schools of medicine, dentistry and armacy 1,381; Chicago undergraduate division at Navy pier 550 and Galesburg undergraduate division 1,682—a total of ,062 resident students.

The university completed during the year one of the largest deral housing programs in the nation, providing living space 492 temporary buildings for 3,931 persons.

The institute of aeronautics, a pioneering venture launched in 45 as a horizontal administering unit for all university aero-utical activity, had become in 1947 a leader in this field nong institutions of higher learning. Flight instruction, in-uding night flying, was provided at the 762-ac. airport and rious research projects were launched.

Operated on a similar basis was the institute of labour and dustrial relations, which was engaged in research, extension ograms and on-campus instruction. The new bureau of educa-onal research and service gave emphasis to assisting individual hool systems.

There was created in 1947 an institute of communications search which planned research and graduate teaching in a wide ea.

Under construction in the newest building on the Urbana mpus was a betatron designed to generate more than 300,000,000 volts energy and expected to produce cosmic-ray effects the laboratory. The betatron was invented in 1940 by Prof. onald W. Kerst of the university's physics department.

Major buildings under construction at Urbana included labo-tories for mechanical engineering, electrical engineering and emistry, and a dormitory for women. All were planned for mpletion by the fall of 1948.

A university regional planning committee of 40 members, orking with community leaders, neared completion of a study nd recommendations for development of a 16-county area in outhern Illinois, where there was a labour surplus and wide-pread dependency. (For statistics of endowment, enrolment, culty, library volumes, etc., *see* UNIVERSITIES AND COLLEGES.)

**literacy.** During the year 1947, intensive literacy campaigns were being developed in all corners of the world. hose in the Latin American countries were particularly reward-ng. The National Literacy campaign in Honduras was for the enefit of all illiterates over the age of 15. Honduras was di-ided into 17 departments. The capital of each of the depart-nents had a literacy commission and every village had its sub-ommission. Private individuals and teachers were under obli-ation to teach at least five persons a year. Teachers who par-cipated in the program were given preference for appointments ne following year and their work counted toward promotions. Vhen a student could read and write, his teacher applied for an xamination for him and a literacy certificate was issued to the udent when he had passed the examination.

In Nicaragua all literates between the ages of 15 and 70 were bliged to teach reading and writing to illiterates between the ges of 12 and 50.

Guatemala patterned its literacy campaign after the Mexican iteracy law of Aug. 1944. Penalties enforce the law and awards f merit, including gold medals, stimulate efforts and achieve-nents.

April 16, 1947, marked the beginning of the all-out campaign of the Brazilian ministry of education to reduce illiteracy. The 1940 census showed 52% of the people over 19 years of age were illiterate. Ten thousand teaching centres were organized; the textbooks which were adopted for the program use the system of Frank C. Laubach.

Statistics of the United States office of education showed approximately 10,000,000 adults in the United States who could not read or write. From 20% to 33⅓% of elementary and high school children failed to achieve the reading standards of their respective grades. Among solutions offered in conferences on functional illiteracy were remedial clinics in all public school systems and an intensive adult education program.

Dr. James Yen was the founder of the Mass Education movement in China. His program involved teaching the people how to read and write and also involved giving them knowledge and training to improve their living standard. Health, government, citizenship and agriculture were taught.

Food, clothing and housing problems made educational reform in Germany doubly difficult. There were in 1947 more than 2,000,000 school children between the ages of 6 and 18 in the U.S. zone, and 32,000 teachers. Lack of qualified teaching personnel and the school building shortage impeded educational reform and progress. Of former teachers 70% were denied teaching licences by the German denazification courts. This void had to be filled by inexperienced and inadequately trained teachers.

Japanese statistics stated that 99% of school-age children attended primary school before World War II. The United States Educational mission to Japan concluded that, because of the difficulty of their script, the majority of Japanese people were familiar with only 1,000 characters, which enabled them to read little more than newspaper headlines. The fact that only the most desirable students were selected for secondary school work kept literacy at a low level. The United States Educational mission proposed language reform, decentralization of school administration, new teaching methods, intensive adult education, an upward revision of compulsory education, and co-educational, tuition-free and tax-supported schools. This education was to cover nine years of schooling.

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**Illumination:** *see* ELECTRICAL INDUSTRIES.

**I.L.O.:** *see* INTERNATIONAL LABOUR ORGANIZATION.

**Immigration and Emigration.** Almost 80,000,000 aliens and citizens were admitted to the United States during the fiscal year ended June 30, 1947, while approximately the same number departed. By far the greatest number, 97%, were persons who crossed and recrossed the land borders. Arrivals and departures during 1946 and 1947, exclusive of border crossers, travellers between the U.S. and the insular possessions, and agricultural and railway track labourers admitted from Mexico, were as reported in the table.

*Arrivals and Departures of Aliens and Citizens*
*During Fiscal Years Ended June 30, 1946 and 1947*

| | 1947 | 1946 |
|---|---|---|
| Arrivals: | | |
| Aliens admitted | 513,597 | 312,190 |
| Immigrant | 147,292 | 108,721 |
| Nonimmigrant | 366,305 | 203,469 |
| U.S. citizens | 437,690 | 274,543 |
| Aliens debarred | 4,771 | 2,942 |
| Departures: | | |
| Aliens | 323,422 | 204,353 |
| Emigrant | 22,501 | 18,143 |
| Nonemigrant | 300,921 | 186,210 |
| U.S. citizens | 451,845 | 230,578 |

During the fiscal year 1947, 147,292 immigrant aliens were admitted to the U.S. for permanent residence. This represented a 35% increase over the 108,721 immigrants admitted in 1946 and was the largest number admitted in any year after 1930. The principal countries from which these immigrants came were: Canada (23,467); England (20,147); Germany (13,900); and Italy (13,866). Among the immigrants were 17,018 displaced persons who were admitted under the president's directive of Dec. 22, 1945. There were 70,701 quota immigrants admitted, or 46% of the permissible quota of 153,929, and 76,591 nonquota immigrants. The principal groups of nonquota immigrants consisted of 25,736 wives, 101 husbands and 1,375 alien children of citizen members of the U.S. armed forces admitted under the act of Dec. 28, 1945, and 35,309 natives of nonquota countries, chiefly Canada and Mexico. Aliens admitted for temporary stay and resident aliens returning from a brief sojourn abroad totalled 366,305.

There were 323,422 aliens who departed during the fiscal year 1947. Of those who departed 22,501 were emigrants or aliens who left a permanent residence in the U.S. for residence of a year or more abroad. The principal countries to which emigrants went were China (2,249); Great Britain (2,134); Eire (1,851); and France (1,148). The remaining 300,921 aliens who departed were nonemigrants who had been admitted temporarily and resident aliens who planned to return to the U.S. after a temporary stay abroad.

During the fiscal year, 4,771 aliens seeking admission for 30 days or longer and 2,664 aliens who wished to come in for less than 30 days were excluded from entry into the United States.

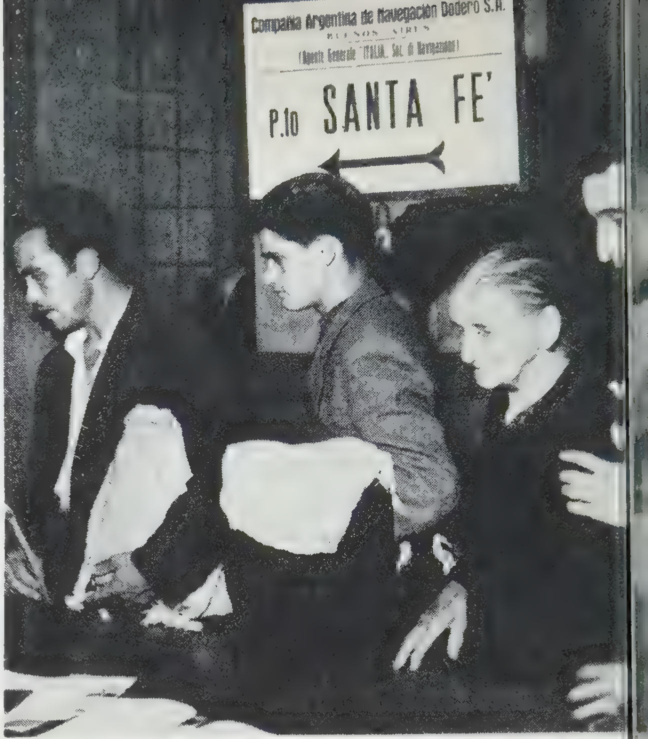
Authority for the importation of agricultural labourers was continued by congressional authorization until Dec. 31, 1947. As of June 30, 1947, there were in the U.S. 64,522 agricultural labourers, most of whom came from Mexico.

The continued increase in the number of illegal entrants, primarily at the Mexican border, who were attracted by the higher wages and better living conditions prevailing in the U.S., caused a greater number of deportations and voluntary departures of deportable aliens than in any previous year on record. The immigration border patrol apprehended 193,657 deportable aliens. During the fiscal year 1947, 18,663 aliens were deported, 195,880 aliens who had been adjudged deportable were permitted to depart at their own expense without warrants of deportation, and 88 destitute aliens were returned to their own countries at the expense of the government of the United States. (*See* also ALIENS; CENSUS DATA, 1947; REFUGEES.)

(W. B. MI.)

**Great Britain and Commonwealth.**—Emigration from the United Kingdom is stimulated by both push and pull as in all normal population movements. Dissatisfaction with conditions in the home country were partly economic (shortage of congenial accommodation, shortage of consumer goods), partly personal, and to a smaller degree, political. Unemployment, a large expulsive factor at various periods in the past, was not a general factor in 1947.

On the whole, the pull of the new country must be considered greater than the push from the old. Among the personal factors were the experience gained and the attachments formed during World War II in various parts of the British empire. Twenty-three thousand service men and women had been released overseas from the three services.


Compañia Argentina de Navegación Dodero S.A.
P.lo SANTA FE'

ITALIAN EMIGRANTS at Genoa preparing to board ship for Argentina. 100,000 applications pending, an agreement between the two nation signed on Feb. 21, 1947, providing for unlimited admission of Italians Argentina

The dominions needed population: Australia with a population of 7,000,000 and Canada with 12,000,000 were actively planning for immigration. South Africa found it politically and socially desirable to increase its white population. New Zealand could absorb more people. The rate of absorption was limited by some general factors, others were specific. The question of housing was one common strong limiting factor. nomically and geographically, Canada was in the stronger tion: the distance was not so great and building materials more readily obtainable. Canada's needs were, in the main workers in primary occupations such as mining, lumbering farming, whereas Australia needed predominantly worker secondary industries: builders, metalworkers, textile opera and technicians of various kinds. South Africa wished t tract more specifically skilled workers: printers, refrigera and radio engineers, toolmakers, diesinkers, blacksmiths coppersmiths.

Transport was difficult to obtain throughout the year movements to all these countries would have been la Ontario took vigorous action and put on special air traffic. movements were about 8,000 to South Africa, 7,000 to Can 6,000 to Australia and 6,000 to New Zealand.

The need for labour in the United Kingdom led to the br ing in of displaced persons from Europe, mainly Balts. T emergency volunteer workers totalled between 20,000 and 25 persons. Between 2,000 and 3,000 distressed relatives of sons resident in the United Kingdom were also admitted. though not, technically speaking, immigrants, the member the Polish Resettlement corps, who were remaining in the c try, and those refugees from nazi oppression who had bee the country for some years and were being granted British zenship added several tens of thousands to the permanent p lation of the country.

The total influx during 1947 exceeded the total outflow, in this respect the year was not typical, since the determi factors of the situation still lay in abnormal, immediate p war conditions.

(B. L. B.

**Imports:** *see* INTERNATIONAL TRADE; TARIFFS. *See* also u various countries.

**Income, Distribution of:** *see* WEALTH AND INCOME, TRIBUTION OF.

## Income and Product, U.S.

Preliminary estimates the national income the gross national product of the United States for 1947 s bstantial increases over the 1946 figures. The national income se to $203,200,000,000 in 1947, as compared with $178,200,-00,000 a year earlier, while the gross national product attained record total of $231,400,000,000, as against $203,700,000,000 1946. In the case of both these measures of over-all busi-ss activity, the primary influence accounting for the expan-on in dollar value was the inflationary trend of prices which rsisted throughout the year.

**Meaning of National Income and Gross National Prod-t.**—National income as understood in this survey represents a mmation of the net earnings of the various factors of pro-ction derived from their association in current economic pro-ction. Both money income and income in kind are included, long as they are derived from participation in current pro-ction. Such income receipts as relief, unemployment bene-s, pensions, gifts, capital gains or losses and gains from il-gal activities are excluded since they do not represent earn-gs derived from current productive activity. The incomes cluded in the compilation are net incomes; that is, in the case business enterprises, the incomes are counted after deduc-on of costs of doing business and after allowance for deprecia-on and indirect business taxes. The estimates are limited to ose incomes which are ordinarily derived from the market onomy. Thus, the value of the services of housewives is not cluded, whereas the income derived from government em-oyment is included. It is well to emphasize that the national come is not simply the sum of money incomes of all persons the U. S., such as might be reported for income tax purposes.

The gross national product, as measured by the U.S. depart-ent of commerce, represents a summation of three major mponents: (1) the market value of goods and services flow-g to consumers, (2) the value of the gross output of capital ods retained by private business, and (3) the cost value the goods and services produced or purchased by govern-ent. The gross national product differs from the national in-me in that no allowance is made for depreciation and other serves (which constitute business expenses in the computation income) or for indirect taxes paid by business.

Taken together, the national income and national product timates provide a comprehensive picture of the current eco-omic activity of the U.S. as a whole. The two sets of estimates present the receipts (national income) and expenditures (na-onal product) sides of a consolidated national account show-g the major transactions that occurred during the year rela-ve to current production of goods and services. The data are seful in giving quantitative expression to economic trends nd problems of the national economy as well as in comparing ne operations of an individual business firm with the national tals for all economic activity.

**Revision of National Income Data.**—The department of commerce pub-shed a special *National Income Supplement* to the *Survey of Current usiness* in July 1947, which contained thoroughly revised national in-me statistics for the period 1929–46. It also provided a description of e general approach used in estimating the official figures for the U.S. come and gross national product and a series of definitions of the vari-s aggregates. The revised statistics were presented in much greater de-il than previously in a series of more than fifty tables.

While many of the changes made in the national income estimates ere offsetting, the net effect of the conceptual and statistical revisions as to raise the general level of the national income and the national roduct estimates. This was particularly the case in the data for the ar period.

**Changes in U.S. National Income, 1929–47.**—Estimates of national in-me from 1929–47 are shown in Table I.

The estimates in the accompanying tables are in terms of dollars, and nsequently are affected by the general level of prices as well as by the ysical quantity of goods and services produced. Since for many pur-ses the physical quantity of national production, or real national in-me, is required, a series reflecting changes in this volume is also shown Table I, average prices of 1939 being used as a base.

In assessing the importance of the rise in national income over a eriod of time, it is essential to take account of the increase in popula-on. As population rises, there are more persons to share in the goods eing produced for present and future consumption and also more hands available for contributing to total output. The changes in income produced per capita, after adjustment for fluctuating prices, are shown in Table I.

Table I.—*National Income in Current and 1939 Dollars*

| Year | Current dollars Total (In 000,000,000s, of dollars) | 1939 Dollars Total (In 000,000,000s, of dollars) | 1939 Dollars Per capita |
|---|---|---|---|
| 1929 | 87.4 | 70.5 | $579 |
| 1930 | 75.0 | 62.0 | 504 |
| 1931 | 58.9 | 54.5 | 439 |
| 1932 | 41.7 | 42.6 | 341 |
| 1933 | 39.6 | 42.1 | 335 |
| 1934 | 48.6 | 49.1 | 388 |
| 1935 | 56.8 | 56.2 | 442 |
| 1936 | 64.7 | 64.0 | 500 |
| 1937 | 73.6 | 70.1 | 544 |
| 1938 | 67.4 | 66.1 | 509 |
| 1939 | 72.5 | 72.5 | 554 |
| 1940 | 81.3 | 80.5 | 610 |
| 1941 | 103.8 | 97.9 | 735 |
| 1942 | 136.5 | 118.7 | 881 |
| 1943 | 168.3 | 141.4 | 1036 |
| 1944 | 182.3 | 148.2 | 1073 |
| 1945 | 182.8 | 145.1 | 1040 |
| 1946 | 178.2 | 130.1 | 921 |
| 1947* | 203.2 | 130.3 | 905 |

*First three quarters actual; last quarter estimated.

By the end of 1946, the job of reconversion was virtually completed so that during the year 1947 only a gradual increase in output could be accomplished. For the year as a whole, however, the level of output was above that of 1946, since the trend in the earlier year was more sharply upward. This increase in total production in part accounts for the expansion of the national income from $178,200,000,000 in 1946 to the record total of $203,200,000,000 in 1947. Much more significant, however, was the substantial rise in prices that occurred during the year as a result of the inflationary potential that had been built up during the war. It may be seen from Table I that after adjustment for the change in the cost-of-living index there was only a small increase in the national income over the level of the preceding year. It is highly probable that the figures in the table in terms of 1939 dollars understate the increase in real output since the cost-of-living index is not representative of the entire range of goods and services covered by the national income.

Table II.—*National Income by Distributive Shares*

(In 000,000,000s of dollars)*

| Item | 1939 | 1945 | 1946 | 1947† |
|---|---|---|---|---|
| National income | 72.5 | 182.8 | 178.2 | 203.2 |
| Compensation of employees | 47.8 | 122.9 | 116.8 | 128.5 |
| Wages and salaries | 45.7 | 117.6 | 111.1 | 123.2 |
| Private | 37.5 | 82.1 | 90.2 | 105.7 |
| Military | .4 | 22.4 | 8.0 | 4.1 |
| Government civilian | 7.8 | 13.0 | 12.9 | 13.4 |
| Supplements to wages and salaries | 2.1 | 5.3 | 5.7 | 5.2 |
| Employer contributions for social insurance | 1.5 | 3.8 | 4.1 | 3.4 |
| Other labour income | .5 | 1.5 | 1.6 | 1.8 |
| Income of unincorporated enterprises and inventory valuation adjustment | 11.3 | 30.2 | 35.0 | 40.7 |
| Business and professional | 6.8 | 16.7 | 19.7 | 22.4 |
| Income of unincorporated enterprises | 6.9 | 16.8 | 21.0 | ‡ |
| Inventory valuation adjustment | —.2 | —.1 | —1.3 | ‡ |
| Farm | 4.5 | 13.5 | 15.2 | 18.3 |
| Rental income of persons | 3.5 | 7.0 | 6.9 | 7.3 |
| Corporate profits and inventory valuation adjustment | 5.8 | 19.7 | 16.5 | 23.3 |
| Corporate profits before tax | 6.5 | 20.2 | 21.1 | 28.2 |
| Corporate profits tax liability | 1.5 | 11.3 | 8.6 | 11.2 |
| Corporate profits after tax | 5.0 | 8.9 | 12.5 | 17.0 |
| Dividends | 3.8 | 4.8 | 5.6 | 6.6 |
| Undistributed profits | 1.2 | 4.2 | 6.9 | 10.4 |
| Inventory valuation adjustment | —.7 | —.5 | —4.7 | —4.9 |
| Net interest | 4.2 | 3.1 | 3.2 | 3.4 |

*Detail will not necessarily add to totals because of rounding.
†First three quarters actual; last quarter estimated.
‡Not available.

Table III.—*Gross National Product or Expenditure*

(In 000,000,000s of dollars)*

| Item | 1939 | 1945 | 1946 | 1947† |
|---|---|---|---|---|
| Gross national product | 90.4 | 213.1 | 203.7 | 231.4 |
| Personal consumption expenditures | 67.5 | 121.7 | 143.7 | 164.5 |
| Durable goods | 6.7 | 8.0 | 14.9 | 19.7 |
| Nondurable goods | 35.3 | 75.3 | 87.1 | 99.1 |
| Services | 25.5 | 38.4 | 41.7 | 45.7 |
| Gross private domestic investment | 9.0 | 9.1 | 24.6 | 30.5 |
| New construction | 4.0 | 3.1 | 8.5 | 10.6 |
| Producers' durable equipment | 4.6 | 7.1 | 12.4 | 17.6 |
| Change in business inventories | .4 | —1.2 | 3.7 | 2.3 |
| Net foreign investment | .9 | —.8 | 4.8 | 8.4 |
| Government purchases of goods and services | 13.1 | 83.1 | 30.7 | 28.0 |
| Federal | 5.2 | 75.0 | 20.7 | 17.3 |
| War | 1.3 | 76.2 | 21.3 | ‡ |
| Nonwar | 3.9 | 1.0 | 2.4 | ‡ |
| Less: Government sales | .0 | 2.2 | 3.0 | 1.4 |
| State and local | 7.9 | 8.2 | 10.0 | 12.2 |

*Detail will not necessarily add to totals because of rounding.
†First three quarters actual; last quarter estimated.
‡Not available.

**Distributive Shares of the National Income.**—The fact that the economic situation in 1946 was dominated by the effort to reconvert industry to a peacetime basis, while that of 1947 was subject to strong inflationary pressure with only a moderate increase in production, is reflected in the changes in the distributive shares of national income, shown in Table II. The main differences between the two years can be seen in the trends of wages and salaries and profits.

The downward trend of wages and salaries was reversed in 1947, when this component of the national income increased to $123,200,000,000 from $111,100,000,000 in 1946. While this rise was considerably less than the increases recorded during some of the war years, it is significant that it was occasioned by only a moderate increase in employment. There was little change in the average length of the work week and employment increased by less than 500,000 persons. Hence, the primary influence accounting for the increase in wages and salaries was the higher rates of pay that were in effect in 1947.

The several categories of business income recorded the marked increases that can be expected in a period of rapidly rising prices. Unincorporated business and professional income increased from $19,700,000,000 in 1946 to $22,400,000,000 in 1947. This rise was of about the same magnitude as that of the preceding year, though it was generated much more by higher prices than by an increased volume of business. As the prices of farm products rose appreciably, net farm income also advanced from $15,200,000,000 in 1946 to $18,300,000,000 in 1947, a larger increase than was recorded in the preceding year.

Table IV.—*Personal Income and Disposition of Income*

(In 000,000,000s of dollars)*

| Item | 1939 | 1945 | 1946 | 1947 |
|---|---|---|---|---|
| Personal Income | 72.6 | 171.6 | 177.2 | 197.3 |
| Wage and salary receipts | 45.1 | 115.2 | 109.2 | 121.1 |
| Total employer disbursements | 45.7 | 117.5 | 111.1 | 123.2 |
| Less: Employees' contributions for social insurance | .6 | 2.3 | 1.9 | 2.1 |
| Other labour income | .5 | 1.5 | 1.6 | 1.8 |
| Proprietors' and rental income | 14.7 | 37.1 | 41.8 | 48.0 |
| Dividends | 3.8 | 4.8 | 5.6 | 6.5 |
| Personal interest income | 5.4 | 6.8 | 7.7 | 7.9 |
| Transfer payments | 3.0 | 6.2 | 11.3 | 11.8 |
| Less: Personal tax and nontax payments | 2.4 | 20.9 | 18.8 | 21.7 |
| Federal | 1.2 | 19.4 | 17.2 | 19.8 |
| State and local | 1.2 | 1.5 | 1.6 | 1.9 |
| Equals: Disposable personal income | 70.2 | 150.7 | 158.4 | 175.6 |
| Less: Personal consumption expenditures | 67.5 | 121.7 | 143.7 | 164.5 |
| Equals: Personal saving | 2.7 | 29.0 | 14.7 | 11.1 |

*Detail will not necessarily add to totals because of rounding.
†First three quarters actual; last quarter estimated.

Corporate profits recorded a substantial rise in 1947. Profits before taxes increased to $28,200,000,000 during the year, from $21,100,000,000 in 1946, while after allowance for tax liabilities the estimated increase was from $12,500,000,000 to $17,000,000,000. The large demands upon corporate funds that arose through the higher value of inventory holdings and through the need for business expansion and modernization, probably limited the increase in dividends in 1947. There was, however, an increase of $1,000,000,000 over the level of 1946, which is a sizeable rise for this type of income.

**Gross National Product.**—The latest available data on the gross national product are shown in Table III. In 1947, this measure of the value of total output increased to the new high level of $231,400,000,000, as compared with $203,700,000,000 a year earlier.

From the standpoint of judging the character of the economic boom, it should be recognized that the fundamental impetus to expansion in 1947 came from the record level of investment demand. Gross private domestic investment reached a figure of $30,500,000,000, up 24% from 1946 and more than 3 times the 1945 figure. Moreover, the huge demand for goods from abroad resulted in an unusually large net balance on the foreign account. Net foreign investment in 1947 amounted to $8,400,000,000, as compared with $4,800,000,000 in 1946.

It may be seen that all components of gross private domestic investment were higher in 1947 than in 1946. New construction increased by more than $2,000,000,000 to reach a total of $10,600,000,000, while expenditures for producers' durable equipment rose from $12,400,000,000 in 1946 to $17,600,000,000 in 1947. On the other hand, the increase in inventories during 1947 of $2,300,000,000 was less than in 1946 and, in total, not particularly large in relation to the size and trend of gross national product. The effect of inventory accumulation on the business situation should not be minimized, however, since the rate of accumulation was greater in the second half of the year than in the first half.

Perhaps more important than the changes in government expenditures in 1947 was the fact that government as a whole was operating at a significant surplus of receipts over expenditures. This is indicative of the pressure of private buying, particularly of investment goods, which was more than enough to absorb the government surplus. In 1947, total government purchases of goods and services declined moderately from the year before, the change being from $30,700,000,000 to $28,000,000,000. The drop in the expenditures of the federal government was somewhat larger, from $20,700,000,000 to $17,300,000,000, but this was partially offset by an increase in expenditures of state and local units from $10,000,000,000 in 1946 to $12,200,000,000 in 1947. It may be noted that government outlays as a whole were far above their prewar level of $13,100,000,000.

With prices appreciably higher and even the volume of goods available greater, consumer expenditures in 1947 rose to the record level of $164,500,000,000, from the 1946 figure of $143,700,000,000. All the major categories of consumer expenditures showed sizeable increases: durable goods purchased increased from $14,900,000,000 in 1946 to $19,700,000,000 in 1947 and expenditures on services rose from $41,700,000,000 to $45,700,000,000. More unexpected, perhaps, was the sizeable increase in the case of nondurable goods, where expenditures increased to $99,10
000 from the level of $87,100,000,000 in 1946.

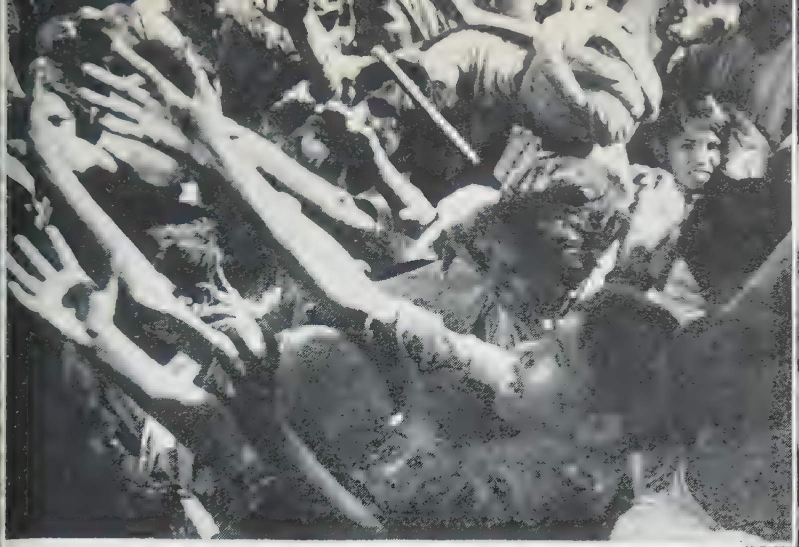
**Use of Consumer Income.**—Data on the disposition of personal i
are shown in Table IV. It may be noted from the table that dis
income in 1947 increased much less than consumer spending. As
sult, there was a further decline in current personal savings, thou
was necessarily less spectacular than in 1946. The trend of saving
been downward from their peak during the war of $35,600,000,
1944 to a level of $14,700,000,000 in 1946. In 1947 there was a f
decline to $11,100,000,000. (*See* also BUDGET, NATIONAL; BU
REVIEW; DEBT, NATIONAL; WEALTH AND INCOME, DISTRIBUTIO
(M. G

**Income Tax:** *see* TAXATION.

**India.** A subcontinent projecting from the mainland of
India comprised until Aug. 15, 1947, 11 maj
"autonomous" provinces, 5 minor areas directly administer
the central British government and 562 states under I
rulers. The last were scattered about the subcontinent
varied greatly in size and importance, as well as in the p
enjoyed by their rulers. British India (the 11 major prov
and 5 minor areas) had its capital at New Delhi and was u
a viceroy and governor-general, who was also the represent
of the crown in its relations with the Indian states. Area: 1,
410 sq.mi., of which the native states and agencies totalled
964 sq.mi.; pop. (1941 census): 388,997,955. Chief cities (
census): Delhi (cap. 521,849); Calcutta (2,108,891); Bo
(1,489,883); Madras (777,481); Hyderabad (739,159); La
(671,659). Principal languages: northern India (Indo-Ar
Urdu, Hindi, Bengali, Panjabi, Rajasthani, Gujarati and M
thi; southern India (Dravidian): Telugu, Tamil, Kana
Malayalam. Principal religions: Hindu (65.6%); M
(24.3%). Ruler: George VI, king emperor; viceroy and
ernor-general: Admiral Earl Mountbatten of Burma.

**History.**—On Feb. 20, 1947, the British prime min
Clement R. Attlee, announced in the house of commons th
cision of the British government to transfer power by a dat
later than June 1948 to an Indian government which, resti
the sure support of the people, would be capable of main
ing peace and administering India with justice and effici
If a constitution were not worked out by that time, the B
government would consider the question of handing over e
to some form of control government for British India,
some areas to the existing provincial governments. At the
time it was stated that Field Marshal Lord Wavell was t
succeeded as viceroy by Admiral Earl Mountbatten of Bu
The latter took over office on March 22.

The prospect of the withdrawal of British rule was vi
with uneasiness by the Indian minority parties, despite th
surances on the part of political leaders that their rights w
be respected, and trouble broke out in various parts of the c
try. The Sikhs, originally a militant Hindu sect who had
fered bitter persecution at the hands of the Mogul empero
the 18th century, had a traditional aversion to Moslem do
tion. The Punjab had been administered with conspicuous
cess by a unionist coalition cabinet of Moslem, Sikh and H
ministers under Sir Khizr Hyat Khan. In March the Mo
league forced the premier to resign, but since it was unab
form an alternative administration with the requisite maj
in the legislature, the province was taken over by the gove
Sir Evan Jenkins. Street fighting between adherents of the
parties broke out in Lahore, Amritsar, Multan and other c
of the Punjab. A serious situation developed in the North-
Frontier province. There the population was almost ent
Moslem, but there was a strong party, led by Abdul Gh
Khan, the "Frontier Gandhi," which supported the Indian
tional congress. A large section was in favour of an i
pendent Pathan state. On the other side of India, rioti
Calcutta was growing in intensity, and there was oppositio

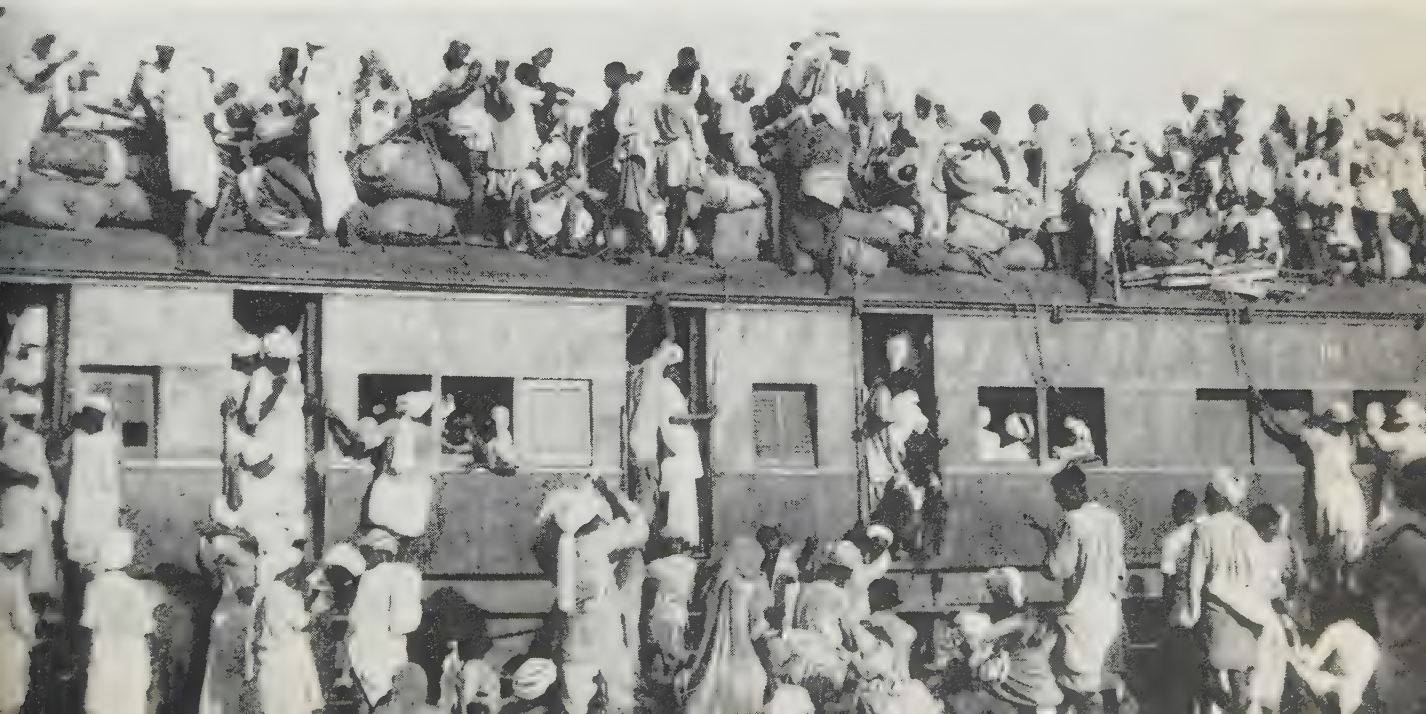


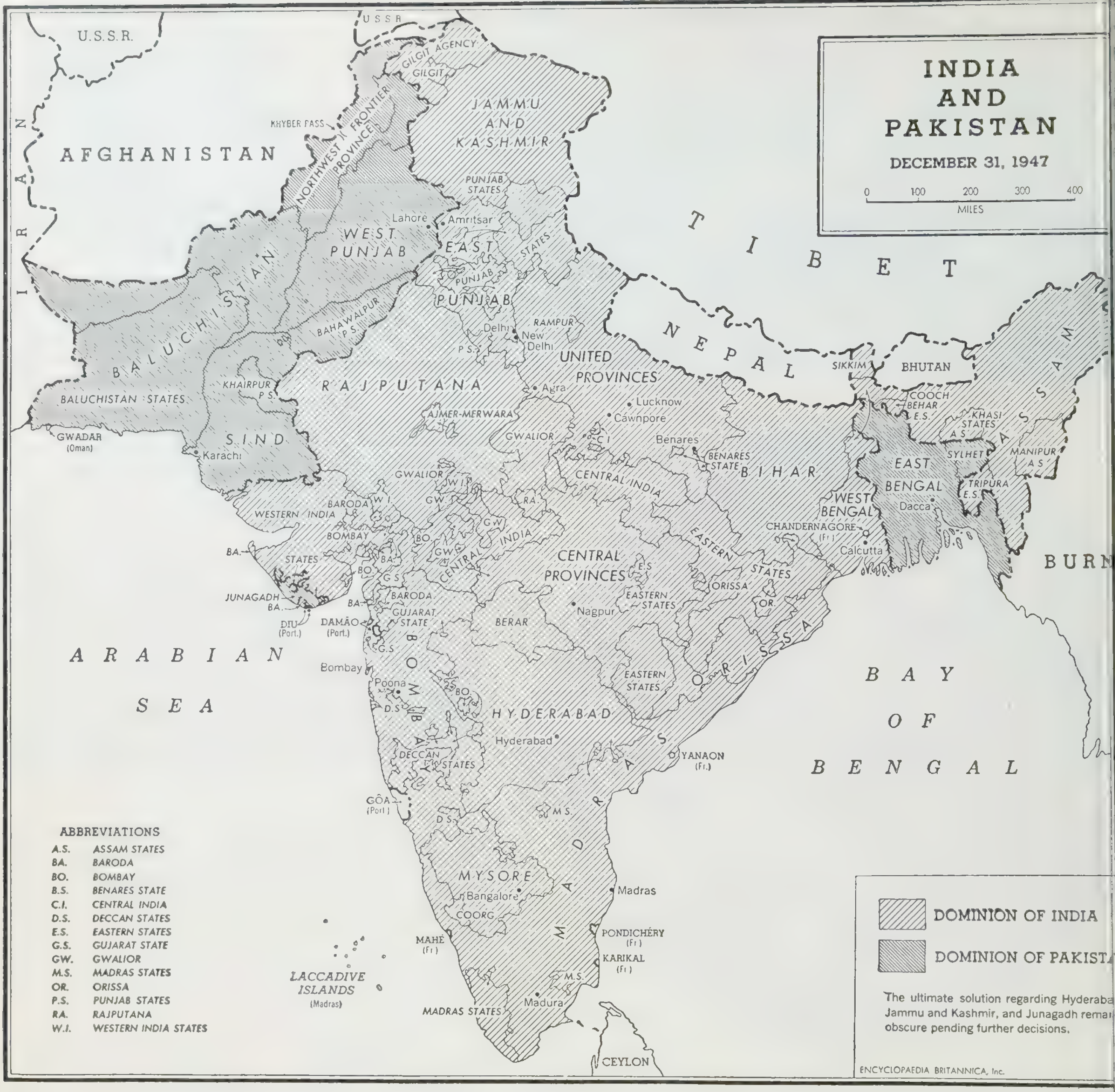
Above, left: OLD AND YOUNG were among the hungry residents of Baroda, India, shown mobbing an official distributing annual gifts of food and clothing on the occasion of the birthday of the maharaja of Baroda in 1947

Above, right: DESTRUCTION IN LAHORE, India, after a week of rioting and arson by Moslems, Hindus and Sikhs over the British partition plan being debated in the Punjab assembly during June 1947

Left: JOINT SESSION of the Bengal legislature which voted to join the Pakistan constituent assembly, June 20, 1947. Members at right foreground were rising to cast their votes at the "no" exit; the others headed for the "aye" exit

Below: REFUGEE TRAIN overflowing on roof and sides with Moslems fleeing the New Delhi area to Pakistan during the summer of 1947





The ultimate solution regarding Hyderaba
Jammu and Kashmir, and Junagadh remai
obscure pending further decisions.

the part of the Hindu majority in Assam to inclusion in Pakistan. It was becoming more and more evident that existing provincial boundaries would have to be readjusted to meet the requirements of a system based upon racial and religious differences.

Matters now assumed so serious an aspect that the viceroy, after prolonged consultation with the Indian leaders, was convinced that the transfer of power at an earlier date was unavoidable, if disaster was to be averted. Since Indian leaders were unable to agree to a plan, partition was the only alternative.

Earl Mountbatten of Burma flew to England to lay his views before the cabinet. On July 5 a bill was laid before parliament which provided for the establishment of the dominions of India and Pakistan, to which would be transferred all the powers hitherto exercised by the British government. Full legislative authority in each dominion would be vested in its constituent assembly; and existing arrangements about posts, telegraphs, customs, communications and other subjects common to both would remain in force. The defense forces would be divided so as to give an army, navy and air force of approximately equal strength to each. To decide whether Bengal and the P
should be partitioned, the legislative assemblies of the
provinces would be asked to meet in two parts, one repr
ing the Moslem majority districts and the other the rest
province. If a simple majority of either part decided in f
of partition, division would take place and arrangements
be made accordingly. The future of the North-West Fr
province would be decided by a referendum held unde
aegis of the governor-general in consultation with the prov
government.

It was originally intended that Earl Mountbatten of B
should be governor-general of both dominions, but sinc
Moslem league refused to accept an Indian union, it was de
that he should be governor-general of the dominion of I
with its capital at Delhi, while Mohammed Ali Jinnah sh
be governor-general of Pakistan, its capital being fixed a
seaport of Karachi in Sind, and not, as was expected, at La
The prime ministers of the two dominions were Jawah
Nehru and Liaquat Ali. The Indian Independence bill
passed without opposition, the date of the transfer of p
being fixed for Aug. 15. Both Bengal and the Punjab ha

oted for partition, a boundary commission, consisting of four gh court judges, was set up for each, under the common chair- anship of Sir Cyril Radcliffe.

Independence day was celebrated with rejoicings by Indians l over the world. The withdrawal of British troops was begun. oon, however, rifts began to appear. The members of the oundary commission being unable to agree, the chairman was oliged in both cases to make an award. In eastern India, engal was divided into western and eastern Bengal, the bound- y line following the Ichamati and Ganges rivers northward to arjeeling. Calcutta was thus in the dominion of India; but the ylhet district, with its Moslem majority, was transferred from ie Indian province of Assam to Pakistan. This was effected in omparative calm, and Calcutta was spared the worst horrors communal strife, mainly because of the influence of Mohan- is Gandhi.

In the Punjab, on the other hand, matters took a serious turn. he partition line was drawn to follow the course of the Sutlej nd Ravi rivers, and ran between Amritsar and Lahore. Thus, mritsar, the sacred city of the Sikhs, was left in their hands. had, however, the effect of cutting the Sikh community in vo, 2,000,000 being in the eastern Punjab (dominion of In- a), and 1,750,000 in Pakistan; moreover, many important ikh shrines and landed estates were on the western side of the ver. This led to a concerted attempt on the part of the Sikhs eliminate the local Moslems, which in its turn provoked sav- ge reprisals. The result was a mass migration of Sikhs and indus on the one hand into the dominion of India, and of Ioslems into Pakistan on the other. Convoys of refugees flee- ig by road and rail were violently attacked and in many cases irtually annihilated. Both dominions did their best to ensure ife transit for the refugees, but this was rendered difficult by ie reluctance of troops and police to take resolute action gainst their coreligionists. By the middle of September, it was stimated that 4,000,000 people were on the move, and it was ifficult to imagine the toll of human misery involved.

By October the authorities had the situation under control, ut the economic consequences were likely to be serious. Crops ere unreaped and irrigation neglected; and this, in a coun- ry where "water is gold," was disastrous. Both dominions ere faced with the problem of resettling immense numbers of isplaced persons, and providing them with food, clothing and mployment. On the other hand, it should be borne in mind hat the disorders were confined to northern India; in the south, he transfer of power was on the whole peacefully effected.

*The Indian States.*—It was laid down in the Indian Inde- endence act that when British rule terminated, the sovereignty f the crown over the states would lapse and would not be trans- erred to successor governments. After some hesitation, most f the rulers agreed to sign instruments of accession to one or ther dominion, but the nizam of Hyderabad, the premier In- lian prince, declared that he would remain an independent overeign, though he was prepared to negotiate treaties with oth India and Pakistan. The minor states of the Deccan, Gujarat and Kathiawar formed confederations for the purpose f joining the Indian union. One result of the transfer of power vas to accelerate the introduction of constitutional government n all the leading states. Sardar Patel, head of the states depart- nent at Delhi, pointed out the necessity of surrendering defense, xternal affairs and communications to the central government; n other matters, the government of India would scrupulously espect the autonomous existence of the princes and not interfere n their domestic affairs.

A difficult position arose in cases where a Moslem prince uled over a mainly Hindu state and vice versa. In most in- stances the ruler prudently deferred to public opinion in the matter of accession. But in Kashmir, where the ruling prince was a Hindu and 85% of his subjects Moslems, a serious position arose, which might well have resulted in civil war between the dominions. Moslem tribesmen from the North-West Frontier province invaded the state and marched on the capital, Srinagar. They were with difficulty driven back by Indian forces dispatched by air from Delhi. In the little principality of Junagadh in the Kathiawar peninsula, where the reverse was the case, there were violent protests against accession to Pakistan, and it was reported that the government of India had landed forces to support the people's claim. (*See* also BURMA; FAMINES.) (H. G. RN.)

**Education.**—Recognized institutions in the Indian dominions (1945–46): primary schools for boys 147,014, for girls 20,827; scholars (boys) 8,834,742, (girls) 3,268,445. Secondary schools for boys 14,835, for girls 2,234; scholars (boys) 3,051,075, (girls) 554,443. Special schools for boys 9,710, for girls 787; scholars (boys) 379,185, (girls) 50,472. Training and professional colleges for men 104, for women 19; students (men) 36,467, (women) 2,392. Higher education: arts and science colleges for men 390, for women 64, universities 16; all students (men) 157,069, (women) 18,408. Unrecognized schools: for boys 10,318, for girls 3,246; scholars (boys) 333,287, (girls) 133,966.

**Finance.**—Central government revenue (actual 1946–47) Rs.3,361,-900,000, (est. 1947–48) Rs.2,794,200,000; expenditure (actual 1946–47) Rs.3,814,700,000, (est. 1947–48) Rs.3,278,000,000; notes in circulation (June 30, 1947) Rs.12,200,000,000; gold reserve (April 1947) U.S. $274,000,000; sterling securities (Dec. 1946) Rs.11,179,481,000; currency: rupee (Rs.1): Rs.100,000=1 lakh (written Rs.1,00,000); Rs.10,000,000=1 crore (written Rs.1,00,00,000). Exchange rate: Rs.1 =30.17 U.S. cents.

**Trade and Communication.**—Overseas trade (1946): imports Rs.2,264,-000,000; exports Rs.2,592,000,000. Communications: roads (1943): total extra municipal roads maintained by public authority 296,066 mi., of which 126,374 mi. were fit for motor transport in all weathers and 95,316 mi. in fair weather; railways (1944): route mileage, broad gauge 20,673 mi.; metre gauge 16,008 mi.; narrow gauge 3,827 mi.; under construction (1944–45) 30 mi.; passenger miles (1944–45) 37,590,722; ton miles 28,410,562. Shipping: monthly average (1946) entered 407,000 net tons; cleared 370,000 net tons. Radio licences (1947) 239,672; telephones (1945): exchanges 2,800, subscribers *c.* 125,400.

**Agriculture, Manufacturing and Mineral Production.**—See the table for figures on production in India.

*Leading Agricultural and Mineral Products of India*

| Commodity | Year | 000 short tons |
|---|---|---|
| Rice | 1946 | 44,080 |
| Wheat | 1946 | 9,964 |
| Maize | 1940 | 2,341 |
| Barley | 1941 | 2,530 |
| Cane sugar (raw) | 1946–47 | 6,245 |
| Tea | 1943 | 275 |
| Rubber | 1946 | 17.1 |
| Tobacco | 1944–45 | 461 |
| Jute | 1946 | 1,189 |
| Cotton (000's bales of 400 lb. each) | 1946–47 | 3,566 |
| Linseed | 1946–47 | 390 |
| Rape and mustard seed | 1946–47 | 1,122 |
| Groundnuts | 1946–47 | 3,911 |
| Sesamum | 1946–47 | 362 |
| Coal | 1946 | 28,356 |
| Iron ore (metal content) | 1939 | 2,193 |
| Pig iron and ferroalloys | 1946 | 1,481 |
| Steel ingots and castings | 1946 | 1,379 |
| Manganese ore (metal content) | 1941 | 539 |
| Chrome ore | 1939 | 27.5 |
| Bauxite | 1946 | 16.5 |
| Gold (000s of fine oz.) | 1946 | 168 |
| Petrol (000's U.S. gal.) | 1946 | 125,044 |

**Industry.**—Total number of factories (1943) 13,209; average number employed daily (1944) 2,520,251; cotton (1946): yarn spun 659,800 short tons, piece goods woven 3,931,000,000 yards, number of mills (1945) 417, average number employed daily 509,778; mines (1943): average number employed daily 349,361; registered unemployed (Dec. 1946) 317,524.

**India, Dominion of.** The dominion of India consists of nine provinces, viz., Assam, capital Shillong; West Bengal, capital Calcutta; Bihar, capital Patna; Bombay, capital Bombay; Central Provinces, capital Nagpur; Orissa, capital Cuttack; East Punjab, capital Jullundur; United Provinces, capital Lucknow; Madras, capital Madras. Thus, the India union covers the greater part of the peninsula up to the river Sutlej, excluding eastern Bengal. The inhabitants are predominantly Hindu by religion, with a strong Moslem element in the United Provinces and especially in the old Mogul capitals of Delhi and Agra. The East Punjab is the home of the Sikhs, originally a reformed Hindu sect founded by the *guru* Nanak, A.D. 1469–1538. In Bombay and the Central Provinces, the leading race is the Marathas, the chief inhabitants of the Deccan plateau. To the south of the Narbada river is Dravidian India, comprising the Tamil and Telugu-speaking peoples of the Madras presidency and the Kanarese-speaking people of the Carnatic. There are also numerous aboriginal tribes, mostly inhabiting tribal areas in the wild and hilly country of central India and Orissa, and separately administered.

Pop.: 320,000,000 (approximately); area: 1,221,000 sq.mi. Capital: Delhi. National flag: a tricolour of saffron, white and green, bearing in the centre the Asoka wheel (*dharma chakra*, or wheel of the law). Governor general: Admiral Earl Mountbatten of Burma; prime minister: Pandit Jawaharlal Nehru; president of the constituent assembly (replacing the Indian central legislature): Dr. Raja Prasad Sinha. (For history *see* INDIA. *See* also PAKISTAN, DOMINION OF.)

Situated in the dominion of India are numerous groups of states. The leading ones are the Sikh states of the Eastern Punjab; the states of Rajputana; the Maratha states, Central India, Gujarat and the Deccan; the Moslem state of Bhopal; and in southern India, Hyderabad, Mysore, Cochin and Travancore. The minor states had formed federations. Most of the states, except Hyderabad, signed instruments of accession to the dominion during 1947. The ultimate solution regarding Hyderabad, Jammu and Kashmir, and Junagadh remained obscure pending further decisions. Each province has parliamentary government. The drafting of a new constitution was in the hands of a constituent assembly, elected by the provincial legislatures and meeting at Delhi.

The chief commodities are cotton in Bombay and Gujarat and jute in Bengal. There are coal mines and iron and steel works at Jamshedpur in Bihar. Agricultural crops are chiefly rice, millets, sugar cane, pulses, ground nuts and tobacco. Tea is grown in Darjeeling and Assam in the northeast, and in the Nilgiris district of Madras. (H. G. RN.)

## Indiana.

An east north central state of the United States with the popular name of "Hoosier," Indiana was admitted to the union Dec. 11, 1816, as the 19th state. Total area of the state is 36,325 sq.mi., including 314 sq.mi. of inland lakes and rivers. It ranks as the 37th state in size and 10th in population (1946 est.) with 3,858,000. The 1940 official census showed the population to be 55.1% urban and 44.9% rural; 93.2% native white, 3.2% foreign-born white and 3.6% Negro. Capital: Indianapolis (pop. 1940, 386,972), the largest city. Other cities: Fort Wayne (118,410); Gary (111,719); South Bend (101,268); Evansville (97,062); Hammond (70,184); Terre Haute (62,693); East Chicago (54,637); Muncie (49,720); Anderson (41,572).

**Political History.**—The 85th general assembly met for its regular 61-day, biennial session at the beginning of 1947. Its principal acts were to raise the minimum pay for teachers, divorce the sale of liquor from politics, provide for a referendum on a soldiers' bonus, outlaw the Ku Klux Klan and similar organizations, enact a series of public health measures and authorize large expenditures to rehabilitate state institutions, prohibit strikes in public utilities, create a three-cent cigarette tax, provide for a central revenue department to collect almost all state revenues and change the budgeting, purchasing and accounting methods of the state. Elected officers of the state in 1947 were Ralph F. Gates, governor; Richard T. James, lieutenant governor; Thomas E. Bath, Jr., secretary of state; Frank T. Millis, treasurer; Alvan V. Burch, auditor; Cleon H. Faust, attorney general; Ben H. Watt, superintendent of public instruction. All were Republicans.

**Education.**—The number of public schools in the state in 1946–47 was 2,493. Enrolment in the elementary or common schools was 4 with 11,776 teachers. Enrolment in the high schools (grades 9–1 169,702, with 9,655 teachers. Parochial schools had an enrolm 48,373 in the elementary grades and 9,415 in high school. For th 1946–47, the state added $33,410,066 to the $61,900,182 spent b units of government for the support of schools. The state provide 487,242 for the 4 state colleges.

**Social Insurance and Assistance, Public Welfare and Related Progr** In 1946–47 the state's welfare program cost $29,982,654, of which 663,152 was furnished by federal funds, $8,055,561 by state fun $8,263,941 by county funds. Old-age assistance cost $19,837,923, assistance $749,396, aid to dependent children $3,485,591 and chil fare $1,305,891. Receipts of the state for unemployment insuran the year ending June 30, 1947, were $17,360,287. Benefits paid ou $8,550,557, not including federal payments to war veterans.

In 1947 the state maintained nine institutions for mental cas cluding an epileptic village; seven homes, hospitals and schools; university hospitals and six correctional institutions. As of June 30, inmates of mental institutions totalled 12,803 and inmates of corre institutions 5,421.

**Communications.**—Total mileage of state highways on June 30, was 10,465 out of a total of 76,700 mi. of roads in the state. Ex ture of the state highway commission on roads in the fiscal year 19 amounted to $27,572,067. There were 6,660 mi. of steam railroads main tracks) and 241 mi. of electric railroads. The estimated num telephones in the state at the end of 1947 was 835,000. There we airports.

**Banking and Finance.**—On June 30, 1947, there were 368 state and trust companies with total resources of $1,449,179,045 and deposits of $1,360,837,300. There were on Oct. 6, 1947, 125 na banks with total resources of $1,597,764,000 and total depos $1,506,587,000. State savings and loan companies numbered 173 Dec. 31, 1946, with resources of $152,232,508. The assets of t federal savings and loan companies as of the same date were $206,23

On June 30, 1946, the state had a balance of $107,938,177. I the fiscal year the state treasurer received $357,045,155 and dis $336,719,176, leaving a balance on hand June 30, 1947, of $128,26 As the state constitution strictly limits borrowing, there was no debt in 1947.

**Agriculture.**—Corn yield fell to 43 bu. per acre in 1947, compare 51 bu. in 1946, yet was only 1 bu. under the 10-year average. Prod was 18% less than in 1946, whereas the national decline was Heavy rains in the spring delayed corn planting until late in June. and hay also were smaller crops. Wheat and soybeans increased 1946 and so did fruit.

*Leading Agricultural Products of Indiana, 1947 and 1946*

| Crop | 1947* | 19 |
|---|---|---|
| Corn, bu. | 191,135,000 | 233,6 |
| Wheat, bu. | 35,811,000 | 29,3 |
| Oats, bu. | 34,320,000 | 55,0 |
| Soybeans, bu. | 28,176,000 | 26,1 |
| Rye, bu. | 840,000 | 6 |
| White potatoes, bu. | 3,750,000 | 4,4 |
| Barley, bu. | 520,000 | 6 |
| All tame hay, tons | 2,284,000 | 2,4 |
| Tobacco, lb. | 12,950,000 | 13,6 |
| Mint for oil, lb. | 897,000 | 6 |
| Apples, bu. | 1,489,000 | 1,3 |
| Peaches, bu. | 725,000 | 5 |
| Watermelons, melon | 3,600,000 | 4,14 |
| Tomatoes for processing, tons | 415.8 | |

*Estimated.

**Manufacturing.**—During World War II, Indiana received gover contracts for war supplies amounting to $9,000,000,000 and ranke in the U.S. in war production. The year 1947 saw resumption of p production in automobiles and automotive bodies and parts, steel, e cal machinery, furniture, glass and farm implements. Much meat pa flour milling, food canning and drug compounding were also do the state.

**Mineral Production.**—In the fiscal year 1946–47, 10,911,638 to coal were taken from 46 shaft mines. Strip mines and mines empl less than ten men were not included in these figures. (H. H.

## Indiana University.

Return to normal peacetime o tion marked the year of 1947. Th the war-stimulated enrolments continued and even incre instruction, research, faculty and staff, housing and studen tivities approached or reached a normal standard. The fa was greatly strengthened by a larger number of additions in any previous year. But it was not alone in numbers also in eminence of scholarship that the gain was made.

Research activities were increased and broadened. C pleted was a nine-year study of the sex behaviour of the A ican male, made by Dr. Alfred C. Kinsey and associate the department of zoology. The genetics group in the department, whose contributions received attention in continued its work. Likewise research went forward in nu physics, literature, social sciences and other divisions of ysical sciences.

Student and faculty housing, initiated after the war, was mpleted; construction was begun on a new student residence ll group to accommodate 1,000 students and two apartment ildings to house married students. Temporary buildings oved from military installations and re-erected relieved in part e classroom, laboratory and office shortage.

Gifts to the university increased and included $90,000 in ants for research by the school of medicine in cancer and ildren's diseases and a documentary collection to the general prary containing 8,500 items relating to the life and times of eneral La Fayette. (For statistics of endowment, enrolment, culty, library volumes, etc., *see* UNIVERSITIES AND COLLEGES.) (H. B. Ws.)

**dians, American.** Congress became fully aware during 1947 of the plight of the 62,000 avaho Indians. Starvation had become a threat on the reserva- on, and sickness was widespread. Ten Navahos were dying of berculosis for every white U.S. citizen. Publicity given to ese problems led many Congressmen to visit the reservation ring the congressional recess. While citizens contributed od, clothing and money, the special session passed a bill thorizing expenditure of $2,000,000 for emergency aid to avahos; $500,000 was appropriated immediately for direct lief.

The commercial fish-canning companies challenged in the urts the incorporation of coastal fishing areas in the Karluk servation in Alaska set up in 1943. The lower court in Alaska d the circuit court of appeals for the north circuit decided in vour of the companies, and the department of the interior commended that the case be appealed to the supreme court. July congress, with the approval of the secretary of the terior, passed a bill authorizing the department of agriculture sell timber in the Tongass national forest, including some reas which the secretary of the interior had decided several ears before belonged to the Indians. Indians in the village of ake, which had such lands, and in Kasaan, which claimed cer- ain land, declared this legislation an infringement of their rights nd entered into contracts with timber interests in the United tates for the sale of $20,000,000 worth of timber in the Indian reas.

Trial suits were filed in Arizona and New Mexico on behalf f Indians who were refused the right to vote. These were the nly two states still denying the ballot to Indians. The Social ecurity board also challenged the refusal of Arizona and New Mexico to admit reservation Indians to social security benefits.

A contract was negotiated with the Choctaw-Chickasaw tribes roviding for the sale of 300,000 ac. of coal-bearing tribal lands o the federal government for $8,500,000.

The interior department appropriation act for 1948 carried evere cuts in appropriations for administration of the Indian ervice, for the Alaska Native service and a reduction in esti- nates for Indian education. A threatened cut of one-third in he funds requested for schools, however, was defeated. (W. W. B.)

**ndo-China, French:** *see* FRENCH OVERSEAS TERRITORIES.

**ndonesia, The United States of:** *see* NETHERLANDS NDIES.

**ndonesian Republic:** *see* NETHERLANDS INDIES.

**ndustrial Health.** The medical profession was unable to meet the continuing demand for ealth services in industry during 1947 and plans were made for reating a reservoir of qualified personnel. The resident physician system adapted to industrial medical operations seemed to offer the most promising method of training and recruitment. Early in the year criteria were developed to define the standards which should govern teaching methods. According to plan, all trainees would receive adequate experience in health conservation, administrative methods, environmental hygiene and industrial medicine and surgery.

A field study of industrial health methods and costs was completed by the Industrial Hygiene foundation. Preplacement physical examination was found to be the most universally employed single activity, followed by first aid and emergency dispensary services and periodic physical examinations. Laboratories of industrial hygiene were increasing rapidly in the plants themselves in place of entire dependence on governmental or independent consulting facilities. Health and safety education were found to be at rather low levels. Cost studies demonstrated that small plants can and do avail themselves of excellent industrial health services. Original investments for small plant industrial health departments ranged from $500 to $3,000 and the upkeep from $300 to $700 per month. Over-all annual per capita expenditures for adequate industrial health services were found to lie between $10 and $12.

A symposium on beryllium and its effects on workers was conducted by the Saranac laboratory of the Edward L. Trudeau foundation to inquire into a number of puzzling characteristics of this substance. The metal has come into considerable prominence recently in metallurgy, fluorescent lamp manufacture and in the production of fissionable materials. Exposure may manifest itself in acute or in delayed forms which some observers regard as separate and distinct conditions. Pathogenesis of either form is far from clear and much additional investigation is necessary. Concern is expressed because of the large numbers of workers engaged in lamp manufacture in small uncontrolled plants or in homes without realization of the hazardous nature of the employment.

The year 1947 saw the completion of the medical survey of the bituminous coal mines areas conducted by personnel assigned from the bureau of medicine and surgery of the U.S. navy. As a result the new 1947 employment contract between the United Mine Workers and the soft coal mines operators contained some significant changes. Added income was provided by raising the royalty to ten cents per ton on all coal mined and the separate funds dealing with medical-hospital services and general welfare were combined under a single board of trustees. A medical advisory board was appointed whose chairman became the director of the health services division.

During the year also, the Hawaiian Sugar Planters association made intensive studies of medical care, hospitalization and industrial health services with a view toward increased efficiency through central administration. In contrast to the former perquisite system, the new program was to be based on mutual contributions by workers and management.

A number of states enacted occupational disease legislation. The Iowa occupational disease law specified a series of compensable diseases and provided for payments in case of partial disability under definite circumstances as well as for total disability and for death. A medical board acting in advisory capacity to the industrial commissioner is provided for in the law. The Nevada occupational disease act incorporates specific diseases which are compensable. The workmen's compensation act of New York was amended in relation to silicosis and other dust diseases and made provision for proper medical consultation, medical and surgical care and hospitalization. South Dakota passed an occupational disability law with a schedule of compensable diseases and created a medical panel whose findings would be advisory to the workmen's compensation commission. Similarly in Tennessee and Texas, schedule laws were passed and in the latter state a medical committee was set up to examine claims and make reports to the compensation board regarding all medical questions. In Montana and Vermont commissions were authorized to survey the need for occupational disease legislation. (C. M. Pn.)

**Canada.**—The industrial health division of the federal department of national health and welfare conducted an aggressive 1947 drive to raise standards. It distributed more than 100,000 health posters and pamphlets to industries. An illustrated monthly, *Industrial Health Bulletin,* was circulated to 25,000 English and 10,000 French-speaking subscribers.

The division co-operated with Nova Scotia, Saskatchewan and Alberta in specific studies of silicosis and lead and carbon monoxide poisoning. Especially assigned and trained personnel were employed to carry out estimations of the air contamination thought responsible for specific diseases. As an outcome of this type of intergovernmental work, two of the provinces concerned set up their own permanent industrial health agencies.

Investigations were carried out by the division to establish the health hazards associated with the operation of agricultural machinery. Information was provided to industries about the effectiveness of ultra-violet light and glycol sprays in the control of air-borne infections, the assessment and control of carbon tetrachloride hazard, the control of dermatitis and the status of ozone in the control of carbon monoxide poisoning.

At the end of the year the federal industrial health laboratory was engaged on the problem of developing a simple and rapid method for determining the presence, and estimating the amount, of methyl bromide in the air of plane hangars where toxic methyl bromide was stored for fire control purposes.

Looking to the health of its 120,000 employees the federal government took steps to improve working conditions in offices, research plants and stations across the dominion. Parliament passed an act creating compensation for industrial disease contracted by government employees. (C. Cy.)

**Great Britain.**—The increase in membership of the Association of Industrial Medical Officers indicated the interest in the health and welfare of their workers shown by both the private employer and the public corporation. Particularly significant was the decision to appoint a chief medical officer to the National Coal board and to the British Electricity authority.

The problem of providing an efficient medical and nursing service for the small factory employing less than 250 people, of which there were well over 200,000 in Great Britain, was formidable. Under the Nuffield trust, the Slough Industrial Health service developed its medical and nursing services for a large number of small units on a training estate and maintained, in conjunction with it, a modern recuperation centre for industrial diseases and injuries.

The universities of Edinburgh and Manchester both had a successful year in preparing doctors for the diploma in industrial health. In London, training courses were arranged by the London School of Tropical Medicine and Hygiene. The universities of Glasgow (which started its first training course), Durham and Birmingham were becoming centres of intellectual interest and research in the problems of health in industry. Birmingham inaugurated a post-graduate course for those already engaged in the practice of industrial medicine. The Medical Research council developed its own laboratories for dealing with toxicological problems and inaugurated a series of committees dealing with special subjects, for example, industrial toxicology and occupational medicine.

The Royal College of Nursing and the University of Birmingham in conjunction with the Birmingham Accident hospital, and the University of Manchester, through its short postgraduate courses, continued to train industrial nurses.
were 9,000 nurses engaged in British industry. Their w
dealing with the problems of injury and health in the f
was of vital importance. (*See* also ACCIDENTS; DERMATO
MEDICINE.) (A. J.

**Industrial Production:** *see* BUSINESS REVIEW.

## Infantile Paralysis.

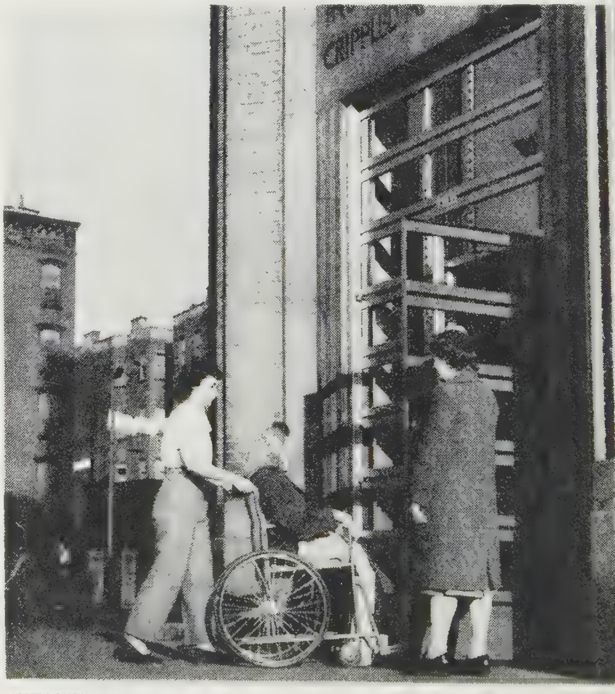
Approximately 11,000 cases o
omyelitis were reported i
United States during 1947. Major outbreaks of the diseas
limited to Delaware, Idaho, North Carolina and Ohio, w
California, Illinois, Michigan, New York and Pennsylvani
tinued to report relatively large numbers of scattered
This was the fifth consecutive year in which the nation
cidence exceeded the average for the period over which sta
had been available.

In addition to these definite cases of the disease,
America experienced many thousands of cases of a peculi
fantile paralysislike disease from which recovery was inva
complete within from two to five days. This disease wa
jected to intensive clinical and laboratory studies because
possibility that it might be a form in which there is no
pling, but as a consequence of which there may be prod
of immunity to subsequent attacks of the virus.

Whereas the number of cases of infantile paralysis
1947 in the United States was considerably less than in
the reverse was true for such countries as Austria, Ca
China, England, Germany, Hungary and Japan.

Research in infantile paralysis indicated progress towar
ter understanding of the disease process, in further amelio
of its crippling aftereffects, and in saving lives.

The distribution of the virus in the nervous tissues of t
perimental animal was studied. The virus can first be de
in the spinal cord on the day preceding paralysis. Peak c
trations of the virus are achieved within one day after it i
detected, and maximal concentrations are maintained o
period of approximately two days. Following this, there
rapid diminution in the concentration of the virus, with



INFANTILE PARALYSIS victim entering the Institute for the Cripple
Disabled in New York city. Dedicated in 1947, the institute was desig
utilize the composite science of rehabilitation developed during World

lete disappearance after approximately two weeks. This sud-en upsurge and diminution in the propagation of the virus ould indicate that the virus finds a fertile field for growth hen it reaches previously uninfected nervous tissue, but that ich growth of the virus is soon made impossible by the de-elopment of some inhibiting substance.

Experimental studies on the oscillating bed as an adjunct to e treatment of infantile paralysis showed considerable promise. ot only did this method of treatment appear to conserve cer-in elements important in metabolism (*i.e.*, calcium and nitro-en) but it also appeared to be of importance in maintaining ontrol of the circulation of blood and the normal pH of the rine. Furthermore, this method of treatment was shown to be ffective in cases of the disease with respiratory difficulties. Fol-owing the acute phase, patients were transferred from the espirator to the oscillating bed, which provided adequate as-stance to the paralyzed muscles of breathing. The use of the scillating bed in such cases seemed to be of importance, not nly because of the specific benefits and the fact that the atient was more readily available for all forms of treatment, ut also because the procedure prevented the patient from be-oming "wedded," in the psychological sense, to the respirator.

Considerable progress toward saving lives resulted from an tensified investigation of bulbar infantile paralysis—a serious orm of the disease affecting the nerve centres which con-rol breathing, circulation of blood, control of temperature and wallowing. This form of the disease had accounted for the reat majority of the deaths in infantile paralysis. New methods f treatment, which seemed to promise a reduction in fatality, vere designed to increase the amount of oxygen in the circulat-ng blood, including such procedures as administration of xygen-helium mixtures, sometimes administered by positive ressure, and control of the secretions of the pharynx by ade-uate suction, postural drainage and tracheotomy. Also, con-tant attention to the oxygen level of the circulating blood ould now be maintained by means of a device called an oxi-neter.

Finally, during 1947, there was important progress toward clearer understanding of the mechanisms of immunity in in-antile paralysis. In monkeys and human beings, convalescent rom an attack, relatively little antibody (virus-inactivating ubstance) is detectable in the circulating blood. There are, on he other hand, large quantities of infantile paralysis-inactivat-ng substance in the central nervous tissues of the convalescent monkey, and it was surmised that the presence of this substance n the brain and spinal cord might prevent a second attack of he disease with the same strain of the virus. It would appear from these studies that resistance to infantile paralysis is not so much the result of the presence of antibody in the circulating blood as the concentration of virus-inactivating substance within the brain and spinal cord.

Of potentially greater importance were the observations (1) that the concentration of antibody in the circulating blood can be progressively increased by continued intramuscular injections of live virus, and (2) that when the antibody in the circulating blood has increased approximately 1,000 times, it appears to spill over into the central nervous tissues, after which the monkey is found to be solidly resistant to large quantities of the virus even when injected directly into the brain. It remained to be seen whether or not these important observations could be reproduced with the various types of human infantile paralysis viruses which are capable of causing disease and with infantile paralysis virus which has been inactivated and is therefore incapable of causing disease.

(*See* also Ear, Nose and Throat, Diseases of; Epidemics; Nervous System.) (H. M. Wr.)

**Infant Mortality.** Infant mortality in the United States dropped sharply from 1946 to 1947 according to provisional data covering the first nine months of both years. For each of the first nine months the rate in 1947 was well below that of 1946, the period as a whole showing an improvement of 12%. For all of 1946, the estimated number of infant deaths (deaths under one year of age) was 112,649, and the infant mortality rate 34.5 per 1,000 live births. Only ten years previously, the infant mortality rate was at the relatively high level of 57.1 per 1,000 live births.

In 1945, the latest year of complete record for the United States, the infant mortality rate for the white population was 35.6 per 1,000 live births; for the Negro population, 56.2 per 1,000; and for other races, 74.3 per 1,000. There was a striking contrast in mortality between large and small communities. Thus, in 1945, the rate was only 34.8 per 1,000 live births in cities of 100,000 population or more. For smaller cities, of 25,000 to 100,000, the rate was 38.1, while in communities of 10,000 to 25,000, the rate was somewhat higher, namely 39.8 per 1,000 live births. The highest rate, 43.4, was recorded in places of 2,500 to 10,000 population. On the other hand, the recorded rate in rural areas was only 39.1. Some of the differences may have arisen from variations in the completeness of registration of births and infant deaths. It was suspected that the registration of infant deaths might not be as complete as that of births in rural areas; such a situation would lead to an understatement of the actual infant mortality in those places.

Provisional United States data for the leading causes of death in infancy during 1946 showed a setback from 1945 for only one cause, premature birth. Thus, for pneumonia and influenza, the rate in 1946 was 3.9 per 1,000 live births as compared with 5.3 in 1945. For diarrhoea and enteritis, the corresponding rates in the two years were 1.8 and 3.0 respectively. Congenital malformations showed a decrease from 5.0 in 1945 to 4.4 in 1946, while the rate for injury at birth was the same—3.6—in the two years. But infant mortality from premature birth rose from 11.6 per 1,000 live births in 1945 to an estimated rate of 12.5 in 1946.

Several factors contributed to the continued reduction in U.S. infant mortality. First, there had been a rise in the standards of obstetrical practice. Then, the proportion of births occurring in hospitals had risen rapidly, from 37% in 1935 to 79% in 1945. In addition, hospitals had improved and expanded their obstetrical services and in many instances had segregated maternity cases. The growth of hospital insurance plans providing maternity benefits brought the advantages of hospital confinement to many mothers who could not afford such services otherwise. Other factors favouring a reduction in infant mortality were the premarital and prenatal examinations for syphilis required by many state laws and the modern methods of treating this disease.

Contrary to the experience in the United States, provisional data for England and Wales pointed to a small increase in infant mortality from 1946 to 1947; there was a rise of almost 4% in the infant mortality rate in London and the other large cities when the first ten months of the two years were compared. For the whole of 1946, there were 33,413 deaths under one year of age in all of England and Wales, the infant mortality rate being 40.8 per 1,000 live births. For Canada, where the latest available data were for 1946, the number of deaths under one year of age was 15,281—a rate of 46.9. Of the other English-speaking countries, Australia in 1946 had the low rate of 29 infant deaths per 1,000 live births, and the population of European origin in New Zealand had a rate of only 26 per 1,000. For the white population of South Africa the rate in 1946 was 36 per 1,000, while Scotland experienced the relatively high rate of 54 per 1,000.

Of the countries with infant mortality rates available for 1946, the record was particularly poor in Chile, with 160 per 1,000 live births, in Bulgaria (124) and Portugal (110). (*See* also DEATH STATISTICS.)

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(A. J. Lo.)

**Infantry:** *see* MUNITIONS OF WAR.
**Inflation:** *see* BUSINESS REVIEW; CONSUMER CREDIT; PRICES. *See* also under various countries.
**Influenza:** *see* EPIDEMICS.

## Information and Educational Exchange, Office of.

The Office of Information and Educational Exchange (OIE) in the department of state undertook at the outset of 1947 to enlarge the scope of its operations, which are designed to present a full and fair picture of the United States to the other countries of the world. The operations of OIE during the first part of 1947 were proceeding on the basis of an annual budget of approximately $20,000,000 and were grouped generally as follows:

**Radio.**—With the addition of the daily broadcast in the Russian language beamed to Russia in Feb. 1947 and the Greek language program beamed to Greece in May 1947, the "Voice of America" radio, employing 36 short-wave transmitters, was broadcasting 59 hours of programs daily in 26 languages to foreign countries. These daily programs included news bulletins and commentaries from editorials published in papers throughout the U.S. as well as a wide variety of feature material revealing the cultural life of the people of the country. These programs during the year drew more than 150,000 letters from listeners in more than 60 countries and in 40 languages.

**Motion Pictures.**—Documentary and informational motion pictures were made available to foreign audiences estimated to reach approximately 10,000,000 persons a month. These motion pictures were made in 24 languages.

**Press.**—A daily news bulletin sent by wireless to U.S. missions abroad gave in excess of 7,000 words a day news developments, texts of official documents and speeches relating to foreign affairs. These bulletins were translated by OIE officers abroad and distributed to the editors, civic and government leaders and others in foreign countries who requested them.

This division of the OIE was also responsible for the publication of the Russian language illustrated magazine *Amerika.* This magazine was circulated at the rate of 50,000 copies per issue in the U.S.S.R. under an agreement with the soviet government. Its retail sale at the price of 10 rubles or approximately 83 cents a copy in Russia paid most of the cost of its publication.

**Exchange of Persons.**—The exchange of persons program during the year was divided into two separate operations. In the first, the state department acted chiefly as a catalytic agent, stimulating and assisting private agencies in renewing their own international interchanges.

The second of these enterprises was inaugurated during 1947, when the department undertook the administration of the new Fulbright act providing for the use of foreign currencies received by the United States in payment for overseas war surpluses for the enrolment of U.S. students, professors and specialists in the schools of those countries. In July of 1947 President Harry S. Truman appointed a board of foreign scholarships, provided in the Fulbright act, to supervise the program.

**Libraries and Institutes.**—United States libraries in tion during the first part of 1947 totalled 67 in 41 cou In addition, 27 cultural centres with 45 branches were in tion in the 20 other American republics. Cultural centres from libraries in that they have, in addition to books, c in English and a wide variety of group activities.

**Legislation.**—All of the activities of the OIE were carried on under congressional appropriation but withou basic congressional authority required for regular gover operations. At the time congress began consideration o OIE budget for 1947–48, a measure was before congress this basic congressional authorization but had not been en into law. Because of the lack of this basic authority the appropriation was stricken from the appropriation bill i house. A limited amount, however, to carry on a min operation pending congressional action on the basic aut measure was provided by the senate when the bill came b that body for consideration and was later agreed to b house.

This total appropriation for the OIE operations was $12 000 for 1947–48, as compared with the $20,000,000 whic been available for the program in the previous fiscal year. more than $1,000,000 was required for liquidation in red the program, the OIE's actual operating budget for 19 was thus reduced to $10,901,233.

Drastic reductions thus were made in the program i latter half of 1947 to bring the expenditures to the approp sum.

William Benton, who had been the assistant secreta state for public affairs during the organization of these c tions in the state department, resigned his post in Sept. and was succeeded (1948) by George V. Allen, U.S. ambas to Iran. In prospect of the early passage of the basic aut ing legislation, the lack of which brought about the sharp tailment of the budget of 1947–48, the state department pared for congress a new budget of $38,000,000 for 19 operations and a request for $6,000,000 additional appro tion to complete the operations for the 1947–48 fiscal (*See* also RADIO.)
(L. J.

**Inland Waterways:** *see* CANALS AND INLAND WATER
**Inner Mongolia:** *see* MONGOLIA.
**Insects:** *see* ENTOMOLOGY.
**Instalment Buying and Selling:** *see* CONSUMER CRED

## Institutum Divi Thomae.

The Institutum Divi Th is the graduate school o ence of the Athenaeum of Ohio, Cincinnati. In its prog major emphasis is placed upon the training as research wo of a limited number of graduate students who follow a scribed course of study and conduct investigations in affiliation with staff members.

During 1947 further positive results were obtained in treatment of certain types of human skin cancer by the i tion of deproteinized tissue extracts. Laboratory studies undertaken with a view to learning the nature of the active stance or substances in the extracts and clarifying their of action as manifested by metabolic and cytologic effects ability to induce resistance to or cause regression of tumou animals. Clinical facilities were being expanded to provid a broader evaluation of the possibilities of this mode of the

Progress was made in concentrating materials present in mal tissues which convert *Staphylococcus aureus,* inclu penicillin-resistant strains, to avirulent forms, both *in vitro* in animal infections. Existing evidence suggested that the terials inhibit toxin formation by the organisms. It was orted that certain of the extracts, previously found to be bactericidal against strains of *Mycobacterium tuberculosis in vitro,* lso exhibit activity in animals infected with tuberculosis.

Other investigations conducted during the year in the laboratories of the Institutum and its affiliated units include studies f antibiotics present in extracts of bacteria and moulds, the cceleration of enzymatic activity, the action of mercurial ermicides in terms of enzyme phenomena, additional studies in cancer, particularly from the enzymatic viewpoint, tissue culture studies, certain physical and biological effects of slow electron bombardment, spectroscopy and investigations in the nutrition of poultry and cattle.

The Donner foundation increased the Institutum's facilities for marine biological research and teaching in Palm Beach, Fla., by the donation of Donner hall adjacent to the present building, Bradley hall. Donner hall would be devoted to laboratories while Bradley hall would provide library, living quarters, and dining hall. (E. S. C.)

**Insulin:** *see* DIABETES.

## Insurance.

**Life.**—Legal reserve insurance companies of the United States and Canada were believed to have passed the $200,000,000,000 mark for life insurance in force (excluding reinsurance) at the end of 1947. This was an increase of about 9% over 1946. New insurance issued during 1947 totalled about $25,000,000,000, equal to the 1946 all-time record; group life exceeded the 1946 record by more than 15%, and industrial by about 3%. New ordinary life insurance fell short by about 3%. Assets at the end of 1947 were approximately $55,000,000,000, after the companies had paid or credited to policyholders and beneficiaries slightly more than $3,000,000,000 during the year.

Mortality among policyholders in 1947 was probably the lowest in history. New low death rates were established for such important causes of death as influenza, pneumonia, tuberculosis, syphilis, appendicitis, and puerperal diseases. Death rates for diseases of middle and later life continued upward, however, with the cardiovascular-renal diseases, cancer, and diabetes all showing increases in rate. The motor vehicle fatality rate declined slightly from 1946, but that for all other accidents dropped much more.

The flow of U.S. life companies' funds into the business economy of both the U.S. and Canada was greatly accelerated during 1947. Demand for new capital was exceptionally heavy in both the bond and the mortgage markets. Life companies were able to acquire approximately $4,200,000,000 net in utility bonds and notes, industrials, and city mortgages, about evenly divided among these three categories. No appreciable change took place in the portfolios of farm mortgages, municipal bonds, or rails. In addition to $15,000,000,000 in corporate bonds and notes, the companies now held $1,500,000,000 of stocks—mainly preferred. City mortgages aggregated $7,700,000,000, of which about 10% was partially guaranteed or insured by the government.

Direct investments by life companies in housing, although hampered by high building costs, rose to roughly $200,000,000—nearly half again as much as at the beginning of the year. Other income-producing real estate investments—primarily commercial and industrial—grew rapidly from about $70,000,000 to $175,000,000 during the year.

Investments in U.S. government and Canadian dominion securities declined by about $1,400,000,000 in 1947—the first drop since the early 1930s. Nevertheless, these securities still amounted to approximately $21,000,000,000, or two-fifths of total assets.

Because of a sharp upswing in market interest rates during the closing months of 1947, the life companies were able to invest new money on much improved terms. This rate (after deducting investment expenses, but before allowing for asset gains or losses) had declined to a new all-time low of 2.9% in 1946, compared with a high of more than 5% in the mid-1920s.

By the end of 1947, U.S. companies had made or announced changes necessary to bring their policy provisions into conformity with the new standard valuation and nonforfeiture laws. In most jurisdictions, these laws (the so-called Guertin laws) were applicable to policies issued after Jan. 1, 1948, or earlier if a company desired. Coincident with the changes in policy provisions, most companies took occasion to raise the level of premium rates of new policies to reflect the low interest rates which had prevailed for some time. This was not required by the Guertin laws. The interest rates adopted for new premium rates ranged from 2% to 3%, the majority of the companies choosing 2½%. (L. A. L.)

**Automobile.**—During 1947 all U.S. automobile rates were increased substantially. Many companies believed that the fire, theft and collision rates were now adequate. The figures for the first six months of 1947 indicated that while the liability rates were also probably adequate, there was still a deficiency in property damage rates. All automobile insurance business was difficult to place during the year. (F. M. R.)

In Great Britain, the abolition of wartime discount, new rates of commission to agents and a full-scale premium revision, followed by the government's decree withdrawing basic gasoline, combined to focus interest on motor insurance. Premium income remained at a high level. The over-all underwriting result was again adversely affected by the high cost of claims. (P. Ss.)

**Hospital, Medical and Surgical.**—Blue Cross nonprofit hospital service plans continued the rapid membership growth which started in 1943, adding 3,600,000 new members during the year to reach an estimated total of 29,600,000 in the U.S. and Canada on Dec. 31. New plans covering the states of Mississippi, South Carolina and Wyoming began operations, leaving only Arkansas without a plan approved by the American Hospital association. In Canada, Alberta and Saskatchewan remained unserved. A total of 91 plans were in operation.

Blue Shield medical-surgical care plans experienced their largest enrolment, reaching a total of 7,250,000 by the end of the year in 49 plans. Associated Medical Care plans, co-ordinating body formed in 1946, reported that growth equalled or exceeded Blue Cross growth at a comparable period of development.

Commercial insurance companies became increasingly active during 1947 in this field, devoting particular attention to large employed groups. Best available estimates indicated that a total of 11,000,000 persons carried hospital expense indemnity policies, 7,000,000 carried surgical indemnity policies and 600,000 carried medical indemnity policies. In addition, about 1,250,000 persons were covered in industrially operated hospital-medical programs, but this type of coverage was declining. About 700,000 persons held membership in co-op or group clinic plans including hospital care.

Fifty bills calling for compulsory sickness insurance were introduced in 16 state legislatures; all were defeated. Twenty bills of this type were introduced in the U.S. congress, but, of these, the Taft-Smith-Ball-Donnell bill providing grants-in-aid to states establishing state-sponsored hospital-medical programs received most attention. The Wagner-Murray-Dingell bill providing for a nationalized system of compulsory prepaid care was again introduced. None of these bills were reported out of committee.

Chief interest in foreign programs centred on the National Health Service act passed by parliament in Great Britain late in 1946 and scheduled to come into full operation July 5, 1948, nationalizing hospital and medical care. Preparations for inaugurating this compulsory program went forward during the year. In New Zealand, the compulsory insurance program underwent criticism as costs increased steadily. (A. G. S.)

**Accident and Health.**—Premium income set a new record of $775,000,000, a 15% increase over 1946. Loss ratios on individual policies rose slightly while experience on group insurance improved. Although frequency of hospital confinement increased, average duration was less so that net claim payments under hospitalization policies were about the same.

A survey by the Health and Accident Underwriters conference showed that nearly all companies had liberalized their hospitalization policies, modifying waiting periods and pre-existing condition clauses.

Medical care insurance was being offered individuals with specific amounts for doctors' calls, usually with the elimination of three or five calls, or on a blanket basis, providing $150 to $500 medical and surgical with $25 or more deductible. The cost of medical care under group insurance made it prohibitive unless the employee paid at least 50% of the cost. (C. D. Sp.)

**Fire.**—The U.S. government extended the period for fire insurance companies to align themselves with the Atlanta decision of 1943, which reversed a supreme court decision rendered more than 75 years before to the effect that insurance was subject to the states and not to the U.S. government. The deadline was set for July 1, 1948.

Losses paid by U.S. fire insurance companies during 1947 were estimated roughly at $400,000,000. (*See* also FIRES AND FIRE LOSSES.) (E. R. H.)

**War Damage, British.**—Value payments released by the War Damage commission on Nov. 10 affected nearly 210,000 properties, and, together with cost of works payments, required £270,000,000 in the financial year. This brought the total paid for repair of damage to land and buildings to approximately £679,300,000. Contributions under this section of the War Damage act were estimated to yield £200,000,000.

On July 14 the board of trade made payments totalling £55,000,000 under the private chattels scheme. More than 250,000 claimants received the balance of outstanding agreed claims, together with interest and any supplementary payment due. Payments were mainly under the free cover provided to about 20,000,000 persons. Receipts were under £16,000,000 and the deficit approached £104,000,000. No date was announced for payment of outstanding claims under the business scheme. (P. Ss.)

**Marine and War Risk.**—The premium income from marine insurance rose materially in 1947 because of the vast increase in overseas shipping. In addition to the large capital sums insured, the rate structure remained high by reason of the continuation of surcharges which came into effect during World War II. Were this not so, it is likely that the entire marine insurance industry of all countries would have shown a severe loss in 1947.

Theft and pilferage were rampant, and in some parts of the orient and western Europe the ports were in a state of almost complete anarchy. In the western hemisphere, while conditions were not quite as bad, thefts were extremely serious despite considerable efforts to combat them. At the annual conference of the International Union of Marine Insurance at Cannes, France, in Sept. 1947, representatives of all nations put the question of theft and pilferage near the top of the agenda.

The volume of premiums on hull insurance remained much higher than before World War II. The underwriting experience, however, was not favourable and probably resulte net loss for the year. (*See* also SOCIAL SECURITY; VET ADMINISTRATION.) (H. C. T

**Insurance, Old Age:** *see* SOCIAL SECURITY.
**Inter-Allied Debts:** *see* WAR DEBTS.

# Inter-American Affairs, The Institute of.

The Institute of Inter-American Affairs, a nonprofit gover corporation which operates under the U.S. department of was reincorporated for a period of three years by an act o gress which was approved by President Truman on Aug. 5, The former Inter-American Educational Foundation, Inc merged with the institute by this act, and became a di within the institute.

The purposes of the institute, as prescribed by congress act of reincorporation, are "to further the general welfa and to strengthen friendship and understanding among, th ples of the American republics through collaboration with governments and governmental agencies of the American r lics in planning, initiating, assisting, financing, administ and executing technical programs and projects, especially i field of public health, sanitation, agriculture, and educatio

The programs of the institute are carried on in each American country under authority of a co-operative agree signed by representatives of the U.S. and of the host go ment. During 1947, field technicians of the Food Supply di were at work in Haiti, Costa Rica, Peru and Paraguay agreements were signed extending the programs there until 30, 1948. While choice of exact projects depends on local and circumstances, in general all food supply projects inv (1) demonstrating approved methods of irrigation, dra erosion control, cultivation; (2) assisting local producers i taining seed, fertilizer, insecticides, etc.; (3) initiati strengthening agricultural education and extension prog (4) assisting in construction of food storage facilities an provement of distribution and marketing systems; (5) de strating improved methods of livestock and pasture ma ment; (6) training of nationals to carry on future activiti

By the end of 1947, approximately 1,500 activities had undertaken by the institute's Health and Sanitation div with more than 1,000 of them completed in 18 countries. ing the year there were about 3,000 doctors, engineers, n and other professional or technical persons employed on health and sanitation projects; 130 were U.S. citizens.

Also during 1947, program extensions were negotiated Venezuela, El Salvador, Honduras, Ecuador, Peru, Uru Haiti and Bolivia. Agreements were terminated in Nicar Costa Rica and the Dominican Republic, in each of countries the projects, which had been initiated throug operative health services made possible by the institute, transferred to national health authorities for operation. H and sanitation programs also had been conducted in B Chile, Colombia, Guatemala, Mexico, Panamá and Paragu

The institute's health and sanitation program stresses raising of health standards in Latin American countries. ultimate objective is greater productivity, higher levels of ing and an expanding economy in all the Americas. Activiti the Inter-American co-operative health services include h education, training of professional and technical personnel tension of sanitation and malaria control, and provisio health centres, hospitals, and other health facilities and ices. With fellowships for training in public health, san engineering, nursing and related subjects, 474 Latin Ameri had studied in the United States.

The U.S. and the host government each contribute a share of e money, materials and trained men and women needed for e projects. Activities are under the direction of the U.S. repesentative. Expenditures of the pooled funds are decided jointly y the chief of party of the institute and an appointee of the co-perating national government. Agreements, originally signed or one- and two-year periods, were renewed in most countries. lso, the program extensions were notable for increased proortions of financial contributions by the countries where the ork was done. In the beginning, the United States usually put at least half of the money and sometimes more. Later, all ational contributions exceeded U.S. funds—in one instance by 1 to 1.

The Education division during 1947 had co-operative prorams with immediate and long-range objectives in 12 Latin merican countries. Altogether, it had sent about 60 educational pecialists from the U.S. to work with the ministers of educaon in the other republics on programs of vocational, health and ural education, and teacher training and secondary education. uring its entire operations, nearly 600,000 books, pamphlets, aps, charts and other teaching materials were made available field parties in the other American republics. Also, 168 disnguished educators from those countries were sent to the U.S. or lectures, study and other educational activities.

Each country has its own peculiar education problems, and onsequently the type of program developed by the division aries from country to country, in accordance with those probems. All however, provide for: (1) the sending of a small roup of U.S. educational specialists to work with the minister f education and his staff; (2) the development of teaching aterials; (3) the bringing of distinguished educators, superisors and teachers to the U.S. to lecture, study and to particiate in national, state and local educational programs.

(A. R. Hs.)

**nter-American Defense Board.** The board is an autonomous internaional organization created in March 1942 in accordance with esolution XXXIX of the third meeting of the ministers of oreign affairs at Petrópolis, Brazil. Membership includes miliary, naval and air delegates from each of the American repubics. Its mission is to study and recommend measures necessary or the defense of the hemisphere.

During 1947 the board held 18 plenary sessions, at which the rincipal items under discussion were the organization and unctions of the permanent military agency which was to relace the existing board in the inter-American system. The proosed name was the Inter-American Military Defense council. n the basis of extensive study the board forwarded to the Pan merican Union and to the governments of the 21 American epublics its recommendations for the structural features of the ermanent agency. The proposed mission and functions of the ouncil were carefully defined, taking into account the proviions of the hemisphere defense treaty concluded at Rio de aneiro in Sept. 1947.

Committees of the board also studied various other subjects ertaining to the defense of the hemisphere, preparatory to subitting their recommendations to the governments. These comittees included the air survey committee, the committee on fficer training, the committee on language barriers and the comittee on industrial mobilization.

The board's secretariat is located at 1735 New York avenue, N.W., Washington 25, D.C. Lieut. Gen. M. B. Ridgway, U.S.A., was chairman in 1947.

(*See* also Inter-American Defense Conference.)

(F. A. I.)

**Inter-American Defense Conference.** The Inter-American Conference for the Maintenance of Continental Peace and Security met at Petrópolis, near Rio de Janeiro, Brazil, from Aug. 15 to Sept. 2, 1947, under the presidency of Foreign Minister Raul Fernandes of Brazil. Countries represented were Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Mexico, Paraguay, Peru, the United States, Uruguay and Venezuela, all members of the Pan American Union (*q.v.*). Nicaragua, also a member of the union, was not represented, lacking a government recognized by the other countries. The closing session of the conference was addressed by President Harry S. Truman of the United States, who also gave a reception to the delegates on board the U.S.S. "Missouri," anchored in the harbour of Rio de Janeiro.

The main task of the conference was to conclude the inter-American treaty of reciprocal assistance which was signed in Rio de Janeiro on Sept. 2 by delegates from all countries attending the conference except Ecuador, whose government had been overthrown by revolution during the course of the conference. Sixteen of the countries were represented by their foreign ministers, the delegation of the United States being headed by Secretary of State George C. Marshall. The director general of the Pan American Union and the secretary general of the United Nations attended by official invitation. Plenary sessions and committee meetings of the conference were open to the press.

**Background.**—The conference, and the treaty which it produced, derived from two earlier international meetings. The Act of Chapultepec, a declaration of the Inter-American Conference on Problems of War and Peace, Mexico City, 1945, stated that any attack by a state against an American state would be considered an act of aggression against all signatories and that in the event such an attack occurred or was threatened the signatories would consult in order to agree upon the measures it might be advisable to take. This declaration also called for the conclusion of an inter-American treaty embodying such provisions in the form of permanent international obligations which would be consistent with the then projected charter of the United Nations. Later in 1945, the charter of the United Nations, drafted at San Francisco, gave recognition to regional arrangements for the maintenance of international peace and security, setting forth certain provisions concerning such arrangements in chapter VIII. Article 51 of the charter, moreover, recognized the right of individual and collective self-defense in case of armed attack.

Following acceptance of these provisions of the U.N. charter, the United States announced its intention of meeting with its Latin American neighbours to conclude the treaty called for in the Act of Chapultepec. The conference was, however, postponed largely because of strained relations between Argentina and the United States. On July 2, 1947, the Brazilian government announced that the conference, for which it had been designated the host, would be convoked on Aug. 15. The governing board of the Pan American Union had earlier decided that the agenda of the conference would consist only of the conclusion of the projected treaty.

**Treaty of Reciprocal Assistance.**—Aside from the preamble citing antecedents of the treaty and certain traditional inter-American policies, the treaty may be summarized as follows:

The parties reaffirmed their previous pledges to settle their disputes by peaceful means (articles 1, 2). They agreed that an armed attack against an American state should be considered an attack against all of them (article 3) and undertook to assist in meeting the attack. The parties would consult in the event of such an attack to agree upon collective measures. If the armed attack should take place within the territory of an American state or anywhere within a region defined in article 4 of the treaty (the American continents, Greenland, adjacent waters and islands and the polar regions to the north and south of the American continents), the parties would undertake to give such immediate individual assistance to the attacked state as they considered necessary pending consultation. In case of any act of aggression, other than an armed attack, against an American state, or in the event of any other fact or situation that might endanger the peace of the Americas, the parties would consult on measures to assist the victim of aggression or to maintain continental peace and security (article 6). Such consultations would normally take the form of a meeting of foreign ministers, but the governing board of the Pan American Union might act provisionally as an organ of consultation (articles 11, 12).

In the consultative meetings, decisions to take measures under the treaty would be by a two-thirds majority (article 17). When such measures comprised any of the following (article 8), the decision to take them would be binding upon all parties (article 20), except that no state would be required to use armed force without its consent: "recall of chiefs of diplomatic mission; breaking of diplomatic relations; breaking of consular relations; partial or complete interruption of economic relations or of rail, sea, air, postal, telegraphic, telephonic, and radio telephonic or radiotelegraphic communications; and use of armed force." When a conflict between two American states was under consideration, parties to the conflict would not be allowed to vote (article 18), and the first action of the consultative body would be to call upon the parties to cease hostilities and restore the *status quo ante bellum* (article 7).

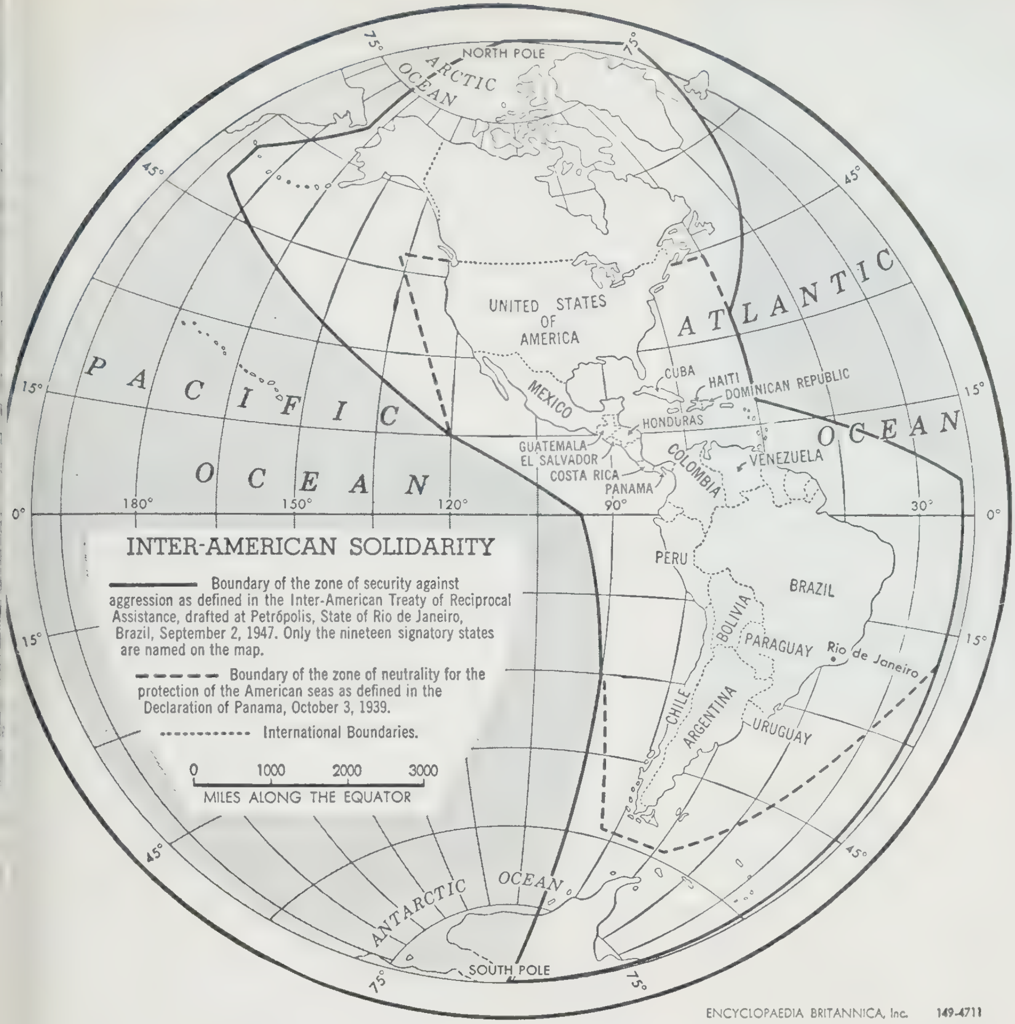
Frequent references to the charter of the United Nations provided proper concordance of the treaty with the San Francisco document. In case of armed attack, parties might (as permitted by article 51 of the charter), exercise their right of individual or collective self-defense until the Security council of
the United Nations had taken the measures necessary t
tain international peace and security (article 3). (
situation other than an armed attack, prior approval
Security council was required, according to the charter
enforcement action could be taken under the treaty.)
ten of the treaty specified that nothing in the treaty "
construed as impairing the rights and obligations of t
Contracting Parties under the Charter of the United N

The treaty, open for signature by all American states
de Janeiro, would come into effect when two-thirds of
natory states had deposited their ratifications with t
American Union and would continue in force indefinit
might be denounced by any party on two years' notice
Pan American Union (articles 22, 23, 25). Without p
to any other acts which the consultative meetings migh
acterize as aggression, the treaty defined two acts which
in any case be so considered: armed attacks and inva
territory (article 9).

**Significance of the Conference.**—Several advances i
American policy and procedures were made in the tr
Rio de Janeiro. Whereas the Act of Chapultepec had i
only an obligation to consult in case of acts of aggressi
new treaty incorporated in addition an obligation on eac
to assist any other American state in meeting an armed
Furthermore, the voting provisions of the treaty introd
new factor in making it possible for two-thirds of the
to decide upon measures up to and including economi
tions in which all parties would be bound to participate w
or not they had voted in favour of them. No such man
provision had ever been incorporated in inter-American
ments before; the provision went further than the Unit
tions charter, omitting the veto power entirely, except
state would be required to use armed force without its c
This provision was believed to offer an effective means
community of American states to carry out its will with
ing blocked by a small, intransigent minority.

Partly because of the thorough preparatory work d
the governing board of the Pan American Union, no
differences over basic issues appeared at Petrópolis. Som

PLENARY SESSION of the Inter-American conference of foreign ministers which convened at Petrópolis, near Rio de Janeiro, Brazil, on Aug. 15, 1947


INTER-AMERICAN SOLIDARITY
Boundary of the zone of security against aggression as defined in the Inter-American Treaty of Reciprocal Assistance, drafted at Petrópolis, State of Rio de Janeiro, Brazil, September 2, 1947. Only the nineteen signatory states are named on the map.
Boundary of the zone of neutrality for the protection of the American seas as defined in the Declaration of Panama, October 3, 1939.
International Boundaries.
0 1000 2000 3000
MILES ALONG THE EQUATOR
NORTH POLE
ARCTIC OCEAN
UNITED STATES OF AMERICA
ATLANTIC OCEAN
PACIFIC OCEAN
MEXICO
CUBA
HAITI
DOMINICAN REPUBLIC
HONDURAS
GUATEMALA
EL SALVADOR
COSTA RICA
PANAMA
COLOMBIA
VENEZUELA
PERU
BRAZIL
BOLIVIA
PARAGUAY
Rio de Janeiro
CHILE
ARGENTINA
URUGUAY
ANTARCTIC OCEAN
SOUTH POLE
180°
150°
120°
90°
30°
0°
15°
45°
75°

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ment took place over whether different procedures should be stipulated regarding acts of aggression originating within and without the continent. This question was decided largely in the negative; acts of aggression would invoke the same obligations of assistance regardless of their origin. Debate over the voting procedure under the treaty was also important, some delegates arguing for a requirement of unanimity, others for a simple majority. The two-thirds rule for voting under the treaty was adopted overwhelmingly as the best compromise between the two more extreme positions.

Bibliography.—The texts appeared in the U.S. department of state bulletin for Sept. 21, 1947. *See* also the report of the director general of the Pan American Union on the conference and the report of the foreign relations committee, U.S. senate, of Dec. 5, 1947 (U.S. senate, 80th congress, executive report No. 11, "Inter-American Treaty of Reciprocal Assistance"). (J. C. Dr.)

**Inter-American Highway:** *see* Roads and Highways.

**Interior, U.S. Department of:** *see* Government Departments and Bureaus.

## Interior Decoration.

The year 1947 in the United States saw the token postwar developments of 1946 carried forward with a vigour which, because of complex inflationary trends, still was unable fully to meet mass-demand or to keep products within expected price ranges. A more normal and healthy buyer's attitude was in evidence, with deliberate selectivity and attention to quality—a desire to get value received. No radically new designs or materials were shown; rather the pent-up developments of the war and reconversion years were finally bearing fruit.

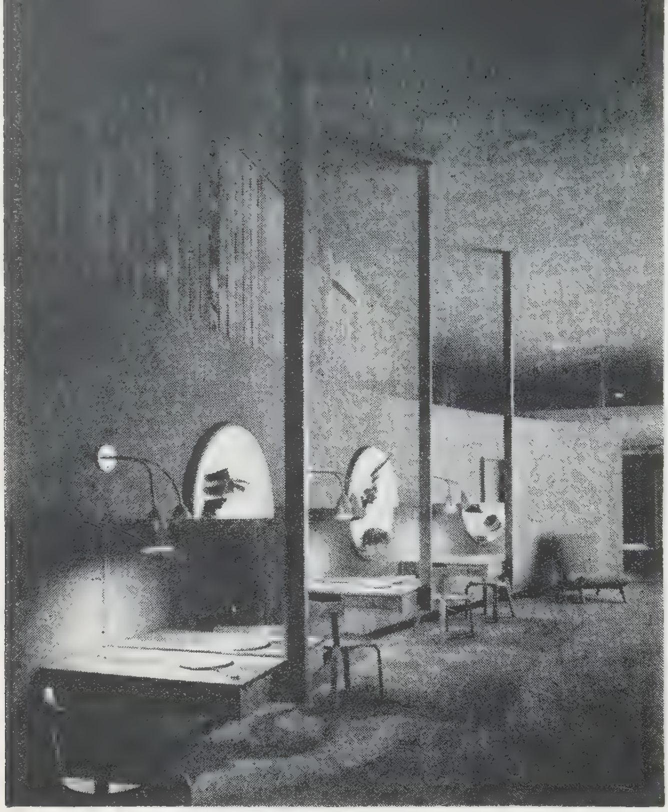
It was important to note the increasing influence of the designer in all phases of interior decoration—an influence going beyond surface form and colour to interpret and correlate the various functions of contemporary life. The gradual and belated emergence of the designer in this role could be noted as a most important incipient trend for 1948. Multipurpose furniture, compact built-in equipment and intelligent storage all pointed toward real utilization of space and simplification of form.

**Interior Surfaces.**—A variety of materials, many new, were available for interior surfaces. Products were offered which in one coat would cover concrete, brick, masonry or wallpaper, filling uneven surfaces in a single operation; plastic tile was available for bathrooms, kitchens, etc., in sizes up to 4 ft. by 8 ft., reducing installation costs; veneers and plywoods were in good supply and so were war-developed adhesives with which to apply them; improved paints were also in supply, as were wallpapers in which a trend toward good design was evident. In addition, a whole group of wall coverings—coated fabrics; materials on paper backing in marble, leather or wood effects; decorative substances such as bits of glass, mirror or wood on fabric back; solid plastics; cork tile; three-dimensional papier-mâché; and simple insulating materials—gave a wide and very interesting range for wall treatments.

Floor surfaces were once again a matter of choice. Rubber tile, cork, asphaltic composition tile, terrazzo, Koroseal and improved linoleum were available in a good range of patterns and colours. Woven coverings in wool, cotton or linen, in interesting textures and colours, were available in the new 158-in. width. Many manufacturers used a plastic to hold yarn backing. Although carpets were in somewhat short supply, luxurious custom-made items in deep pile or carved rugs could be delivered on time.

**Window Treatment, Textiles.**—Windows were generally treated simply by decorative curtains hanging straight to the floor. Frequently, to avoid a broken-pattern wall, the curtains were extended to cover wall as well as window, giving the overall space of a room the simplicity of a backdrop. The public acceptance of designers like Dorothy Liebes pointed taste toward interesting handcraft weaves employing many novel materials. Bold abstract prints, painted textiles and rich floral patterns were also in demand. In the inexpensive bracket, durable paper curtains appeared—in only two patterns, however. A beginning was made toward using silk derived from kelp. This material, heavy with metals and suitable for drapery or upholstery, was proved to be absolutely fireproof, but in 1947 its source was limited to the kelp beds off southern California.

**Furniture.**—There was a marked trend toward contemporary design, which accounted for more than 40% of goods shown,



MILLINERY DEPARTMENT designed by Albert Henry Hill for a store in Fresno, Calif., and completed in 1947

according to a survey. The idea of multipurpose furniture and sectional furniture such as Module became firmly established. The Charles Eames moulded plywood furniture reached the market but could not meet the brisk demand. The new Saarinen-Swanson designed birch furniture, using upholstery fabrics designed by Marianne Strengell, aroused a great deal of interest, particularly since it was scaled for moderate-sized rooms. Metal, glass, rope and bent forms were all used with more or less effect. Perhaps the outstanding characteristics of the new lines were their plastic quality, as in tables adjustable vertically; well-engineered sectional lines susceptible to many variations, chairs like the Barwa designed for scientific relaxation in more than one position; and the full utilization of space for storage, not only in free-standing pieces but also in prefabricated cabinets and closets of all types, and including compact continuous built-in furniture particularly for bedrooms and for radio-phonograph and record units. Even the bathroom was provided with a tub, lavatory and toilet in one continuous form with the lavatory moveable above the other units.

While there was a marked tendency to make use of unused space by continuous storage and shelving, there was an equally marked tendency in the more advanced lines of furniture toward lightness of weight, without sacrifice of strength, and toward airiness and lift of line. Good traditional furniture continued to hold its own but there was somewhat less, rather than more, of it. Upholstered furniture, improved smartly-styled sofa-beds and occasional pieces were all in supply.

**Lighting.**—A number of lamp manufacturers who had heretofore concentrated on reproductions or adaptations of traditional forms for the first time introduced contemporary lines. Flexible metal lamps, both desk and floor types, with exceptionally clean outlines, sometimes as sensitive in appearance as a line-drawing, were on the market. Indirect lighting, using fluorescent tubes, was appropriate for many interiors and was particularly easy to install in conjunction with some of the new wall-covering panels. The dressy elegant occasional lamp with elaborate shade was also in some demand.

**Decorative Accents.**—Some very high quality glass and crystal were developed in the United States and were us decorative accents of lasting elegance. Ceramics contin flourish because of their appropriateness to informal c porary living. There were sufficient regional craftsmen w in this field to produce a variety of individual expre There was also an interest in metalwork, including ename

**Plants.**—The appeal of the "indoor-outdoor" room, w merging of green growing plants and everyday indoor made this feature popular with new home builders. Larg orative plants were likewise used when possible in city int and they provided living accents for almost any room in a Small sunken indoor gardens—more properly pits for plants—coffee tables with a box section for plants, or, usually, large leaf plants in free-standing decorative pots, all employed. (G. M.

## International Bank for Reconstruction and Development.

During 1947 the International Bank f construction and Development, whic cially began operations on June 25, 1946, strengthened i ganizational structure, developed and clarified its basic p and embarked upon its first borrowing and lending activiti

Five additional nations joined the 40 which were memb the end of 1946, and admission of a sixth was authorized new members' subscriptions to the bank's capital, plus app increases in those of some other countries, raised auth capital subscriptions by present members of the bank $7,790,500,000 to $8,248,000,000. Twenty per cent of scribed capital is required to be paid in and is availab loans provided consent is given by the member whose cu is involved; the other 80% is subject to call only if nec to meet the bank's obligations. Paid-in capital at the e 1947 aggregated $1,599,985,000, not including authorized ments, of which only $726,075,000 was in gold or United dollars, the currency mainly in demand.

On July 15, 1947, the International bank made the first offering of its bonds, after laws or administrative rulin many states had been modified to permit banks and insu companies to invest in the bank's securities. The bank o $100,000,000 ten-year 2¼% bonds due July 15, 1957, and $ 000,000 twenty-five-year 3% bonds due July 15, 1972. offering was made through more than 1,700 securities de more than twice the largest number ever to participate in a single security distribution, and it was substantially subscribed.

During 1947 the bank made four loans to finance the chase of industrial and transportation equipment, fuels an materials, fertilizers and other products needed for urgen construction in Europe: to France, on May 9, $250,000 to the Netherlands, on Aug. 7, $195,000,000; to Denmar Aug. 22, $40,000,000 and to Luxembourg, on Aug. 28, $12, 000. In the last instance, for the first time, a loan was partly in a currency other than dollars, Belgium having sented to the use of francs equivalent to $2,000,000 fro capital subscription. All these loans were for a 25-yr. with interest at 3¼%, plus a 1% commission to build up a cial reserve against defaults. The loan agreements pro for control by the bank over use of loan proceeds and for lar consultation and submission of information by the borr on significant economic and financial developments. At the of 1947, five other formal applications for credits were u consideration, and informal discussions preliminary to the mission of specific loan requests were in progress with se additional members.

The four loans to European countries received priority ause of the urgency of their need, the advanced status of their econstruction plans and the early contribution they could make o expanding world production. During 1947, however, the bank ave increasing consideration to programs for developing less dvanced regions. The general principle was adopted that the ank's funds, limited as they are in relation to total needs for apital, should be used at strategic points to bring about maximum increases in productivity in the shortest possible time, and o stimulate investment from other sources. The bank also indicated in its second annual report, issued Sept. 11, that it ntended to play an active role in promoting sound financial programs, encouraging the removal of unnecessary trade barriers nd the regional integration of production programs, where ppropriate, and otherwise seeking to assure economic conditions which would maximize the benefits resulting from its loans. t also expressed willingness to assist in working out international financial settlements and in selecting and recruiting experts to provide technical assistance where necessary.

The bank recognized that developments in connection with he European Recovery program (*q.v.*) would undoubtedly ffect its role in the work of European reconstruction. The report of the Committee of European Economic Co-operation proposed that the bank finance a major part of the projected capital equipment imports, but the amount proposed was larger han the bank expected to have available in view of its limited unds and the financial needs of other regions. Nevertheless, it eemed clear at the end of 1947 that substantial further credits rom the International bank to certain of the participating ountries could be anticipated to cover part of the European Recovery program requirements; and that other bank credits, by developing markets and sources of supply outside western Europe, would make an important contribution to the program's uccess.

On Feb. 23 John J. McCloy was elected to succeed Eugene Meyer, first president of the International bank, who had resigned the previous December; and Robert L. Garner succeeded Harold D. Smith, who died in office, as vice-president. During the year the bank's staff was substantially increased; on Nov. 30 it numbered 380 persons of 23 nationalities.

The bank's board of governors, at its second annual meeting in September, approved the appointment of an advisory council composed of the following: Sir Arthur Salter, chairman, Pedro Beltran, Edward E. Brown, R. Dickson Harkness, Herbert Hoover, Leon Jouhaux, Sir C. V. Raman, Lionel Robbins and S. K. Alfred Sze.

An agreement was concluded between the bank and the United Nations which confirmed the bank's administrative and financial autonomy, but provided for consultation and exchange of information on matters of mutual interest. (*See* also BANKING.) (J. J. McC.)

**International College of Surgeons:** *see* SOCIETIES AND ASSOCIATIONS.

**International Court of Justice.** The International Court of Justice held its second session at The Hague, the Netherlands, Feb. 10–March 14, 1947. It dealt primarily with administrative matters, no case having been submitted for adjudication. Nevertheless, the second year of the court was marked by events pointing the way to greater utilization of the judicial process in the settlement of international controversies.

On Oct. 15, 1946, the Security council adopted a resolution providing that the court might be open to a state not party to the statute, upon its filing with the registrar of the court a declaration, particular or general, accepting its jurisdiction "in accordance with the Charter of the United Nations and with the terms and subject to the conditions of the Statute and Rules of the Court," and undertaking to comply "in good faith with the decision or decisions of the Court" and accepting "all the obligations of a Member of the United Nations under Article 94 of the Charter." A particular declaration is one accepting jurisdiction with respect to a particular dispute or disputes which have already arisen, while a general declaration is one accepting jurisdiction generally in respect of all disputes or of a particular class or classes of disputes which have already arisen or which may arise in the future.

Under article 93 of the charter of the United Nations a state not a member of the United Nations may become a party to the statute of the court on conditions to be determined by the general assembly upon recommendation of the Security council. The council, Nov. 15, 1946, adopted a resolution recommending the conditions on which Switzerland, which had inquired, might become a party to the statute. The assembly, by resolution of Dec. 11, adopted the council's recommendation. The resolution was communicated to the Swiss government, Dec. 31, 1946, but toward the end of Dec. 1947 that government had not yet adhered. The resolution provided for the deposit by Switzerland with the secretary general of the United Nations of an instrument containing:

> "(a) Acceptance of the provisions of the Statute of the International Court of Justice;
>
> "(b) Acceptance of all the obligations of a Member of the United Nations under Article 94 of the Charter;
>
> "(c) An undertaking to contribute to the expenses of the Court such equitable amount as the General Assembly shall assess from time to time after consultation with the Swiss Government."

In addition to the 17 states subject to compulsory jurisdiction under article 36(5) of the statute, by virtue of unexpired acceptances of such jurisdiction under the statute of the predecessor court, nine states had accepted compulsory jurisdiction under article 36(2) of the statute.

On April 9, 1947, the Security council adopted a resolution recommending that the United Kingdom and Albania refer to the court a dispute between them, arising out of an incident on Oct. 22, 1946, in the Straits of Corfu, in which two British ships were damaged by mines with resulting loss of life and injury to their crews.

On May 22, 1947, the British ambassador at The Hague transmitted to the court an application, dated May 13, 1947, instituting proceedings against Albania in respect of the incident, claiming that Albania was internationally responsible.

In a note filed with the registrar, July 23, 1947, Albania stated that, while it would have been within its rights in holding that the United Kingdom was not entitled to bring the case before the court without first concluding a special agreement with Albania, it was prepared—though reserving its rights respecting the manner in which the case was brought—to appear before the court.

On July 31, 1947, the president of the court issued an order fixing as time limits for the presentation of the memorial of the United Kingdom, and the countermemorial of Albania, Oct. 1 and Dec. 10, 1947, respectively.

The memorial of the United Kingdom was filed on scheduled time. On Dec. 9 Albania filed a preliminary objection to the application of the United Kingdom government of May 13, 1947, and on Dec. 10 the president of the court issued an order giving the United Kingdom until Jan. 20, 1948, for filing its observations.

The general assembly, on Nov. 14, 1947, approved three resolutions prepared by its sixth (legal) committee recommending that organs of the United Nations and specialized agencies should refer points of law to the court for advisory opinions; authorizing the Trusteeship council to request advisory opinions; urging acceptance of the compulsory jurisdiction of the court, insertion in treaties of clauses providing for the submission of disputes to the court and recommending that as a general rule states should submit their legal disputes to the court.

On Nov. 17, 1947, the general assembly passed a resolution asking the court for an advisory opinion regarding the admission of states to the United Nations under article 4 of the charter. (*See* also INTERNATIONAL LAW; UNITED NATIONS.)

(G. H. H.)

**International Emergency Food Council:** *see* FOOD SUPPLY OF THE WORLD.

**International Information and Cultural Affairs, Office of:** *see* INFORMATION AND EDUCATIONAL EXCHANGE, OFFICE OF.

**International Labour Conference:** *see* INTERNATIONAL LABOUR ORGANIZATION.

## International Labour Organization.

The constitution and procedures of the I.L.O. were retooled and geared into the machinery of the United Nations. The I.L.O. took its place as an independent, specialized agency of the U.N. with adequate provision for co-ordination and co-operation in its larger tasks. The cost was great in terms of increased budget and personnel for highly technical services, and representation in almost continuous, sometimes overlapping, meetings in all parts of the world. In the months of Jan.–July 1947 such meetings were scheduled. In July the 30th session of the conference voted a budget for 1948 of $4,449,295, an increase of 15.13% over 1947.

The largest conference in number of delegates (173) and advisers (309) in its history met in Geneva, Switz., June 19–July 11. There were represented 48 states members (including Austria readmitted at this session), 40 of them with complete delegations. Representatives of the U.N., the U.N. Educational, Scientific and Cultural organization, the International Monetary fund and the World Health organization also participated. The total I.L.O. membership (July 15) was 53 with two states, El Salvador and the Republic of the Philippines, having declared their intention of accepting membership when necessary constitutional formalities were completed. Yugoslavia gave notice of withdrawal effective June 16, 1949, but was expected to reconsider before withdrawal became effective. Five conventions, applicable to nonmetropolitan territories, were adopted: (1) social policy, by vote 103–1, with 25 abstentions; (2) right of association and settlement of labour disputes, by vote 121–0, with 3 abstentions; (3) labour inspectorates, 120–0, with 3 abstentions; (4) application of international standards, 95–20, with 12 abstentions; (5) maximum length of contracts of employment of indigenous workers, 99–0, with 24 abstentions. Thus was brought to a close the prolonged debate in a tripartite discussion of many delicate questions in colonial areas at four successive sessions of the conference (1944–47). One more convention was adopted concerning labour inspection in industry and commerce, 134–0, with no abstentions. To this were added two recommendations: (1) on labour inspection in general, and (2) on labour inspection in mining and transport, both adopted by vote 135–0, with no abstentions. The conference adopted four resolutions: concerning freedom of association and protection of the right to organize and to bargain collectively; international machinery for safeguarding freedom of association; points to serve as a basis for adoption of conventions on this subject at the 1948 session of the conference; and, finally, placing the question on the agenda for a first discussion at the 1948 session. This action was in response
reference by the U.N. Economic and Social council of th
tion of "guarantees for the exercise and development o
union rights" to the I.L.O. for study and report. The
general assembly on Nov. 17 by vote of 46–6 approved th
ciples of trade union rights laid down by I.L.O. and d
that it and not the World Federation of Trade Unions w
proper authority to deal with freedom of association a
dustrial relations as the U.N. specialized agency on labour
Ratifications of conventions reported to the conference J
numbered 944, and later July reports made the total 9
increase of 25 within a year. The report of the commit
experts on the application of conventions (Conf. Docs
VI App.) and of the conference committee on the appli
of conventions (Prov. Rec. No. 26) showed satisfactory
ress and a determination to make full use of new constitu
requirements, such as reports on conventions not ratifie
action taken under recommendations to increase the effe
ness of both.

There were three director general reports. (1) The 30t
sion report (Conf. Doc. Rep. I) presented the usual eco
and social background on a world scale of the topics
confronted the conference. Its discussion was more ext
than usual. No other event of the year in internationa
presented a better documented analysis of world econom
trends, a tripartite debate on fundamentals and a guide to
for I.L.O., U.N. and other international agencies. (2) Fi
port of the I.L.O. to the United Nations[1] was prepared
article V, 2, a, of the agreement between the U.N. an
I.L.O. (May 30, 1946) which provided for regular repo
the activities of the organization. The period covered ext
from the establishment of the U.N. to July 15, 1947. (3
third director general report was prepared for the Prepa
Asiatic Regional conference in New Delhi, India, Oct. 27–N

Industrial committees for six important international i
tries held meetings, some their second session, in 194
proved more effective than anticipated as a new triparti
proach to solutions of international industrial and labour
lems. The governing body considered the advisability o
ferring the conclusions in many cases to the general confe
as a first discussion of matters to be dealt with in conve
and recommendations. (*See* also CHILD WELFARE.)

(S. McC.

## International Law.

The value of activity relating
ternational law in 1947 was
tioned by some jurists who believed this body of law shou
kept within the narrow field which it occupied during the
century. The numerous national and international agencie
gaged in the development of international law, on the
hand, pursued their work with vigour and confidence that
would help adapt it to the conditions of a shrinking and
dependent world whose governments were equipped with
ons which would make another war intolerably destructive.
work was, for the most part, based upon the assumption
the principles of justice which the law ought to maintain
those set forth in the preamble of the United Nations cha
"to save succeeding generations from the scourge of war .
reaffirm faith in fundamental human rights . . . to establish
ditions under which justice and respect for obligations ar
from treaties and other sources of international law ca
maintained, and to promote social progress and better stan
of living and larger freedom." These principles diverged w
from those derived from the prevailing 19th century conce

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[1] Vol. I *Report;* Vol. II *Appendices* included I.L.O. constitution, as amended and i
in 1947, agreement (U.N. and I.L.O.), membership July 15, governing body, conv
and recommendations, 1919–47, etc. (Geneva).

hat sovereign states are the only subjects of international law, re bound only by rules to which they have consented, and are resumed to retain freedom to refuse to submit to any superior uthority and to advance their policies even by war. It was ot surprising that the transition to the new conceptions involved difficulties and proved alarming to some international awyers.

The new principles, it was true, did not originate in the U.N. harter. They were inherent in concepts of natural law with which modern international law originated in the 16th century, nd in the efforts to give practical effect to human aspirations or peace and justice at the Hague conferences of 1899 and 907 and in the League of Nations. But as the world had hrunk, the need for a more effective law preventing war and protecting human rights had become obvious to an increasingly arge proportion of the world's population.

Strangely, the Soviet Union, which in its domestic policy had been most radical, had become most conservative in regard to nternational law, and remained the most devoted champion of unlimited national sovereignty. The United States, on the other hand, which had been notable for its aloofness from international organization and its insistence on national sovereignty, had officially sponsored projects such as those for the control of atomic energy and for modifying the veto vote in the Security council which would greatly augment the effectiveness of international authority and reduce that of sovereign states. Certain elements of U.S. opinion moved even further, and organizations favouring world government or world federation had attracted a considerable following.

Responsible agencies concerned with the development of international law avoided either extreme. They declined to be dogmatic about the sovereignty of either the nations or the world, but sought to develop international law as the changing conditions of the world community and the merits of each particular problem suggested.

**Interpretation of the U.N. Charter.**—One issue concerned the utilization of political as opposed to juridical procedures in interpreting international law. The issue arose during 1947 in several discussions concerning interpretation of the charter of the U.N. For example, when India complained that Indian nationals in South Africa were denied the human rights assured them by the charter, South Africa contended that the matter was essentially within its domestic jurisdiction, and consequently U.N. organs could not consider the matter. Certain states wished to obtain the advisory opinion of the International Court of Justice on this contention, but the general assembly passed a resolution on the merits of the question, urging a settlement in accord with the provisions of the charter, thus by implication deciding that the matter was not within the domestic jurisdiction of South Africa.

Again, when the question arose concerning the conformity of the U.S. proposal for an interim committee of the general assembly to deal with political problems which the Security council failed to settle, the soviet government claimed that the primary responsibility of the Security council to maintain international peace and security would be encroached upon. The British suggested reference to the court, but this was not done, and the general assembly, by approving the U.S. proposal, decided by implication that it was not contrary to the charter.

In both of these cases the majority of the members preferred to interpret the charter by the political action of the general assembly, rather than by juridical advice of the court. The Soviet Union, however, took a third position in the latter case, holding that each member was ultimately justified in interpreting the charter itself, and since it regarded the interim committee of the general assembly as contrary to the charter, announced that it would not participate in the meetings of that body. The soviet delegation took a similar position when the general assembly confirmed the trusteeship agreements without determining who were the "states directly concerned," which under the charter should draw up these agreements. Consequently it refused to participate in the Trusteeship council, which it considered to have been set up in violation of the charter.

UNITED NATIONS committee on international law whose activities, in 1947, were devoted to the study of how international law might eventually be codified

Whether South Africa was obliged under the charter to place the mandated territory of South-West Africa under trusteeship and the extent to which the general assembly could make recommendations concerning non-self-governing territories, were issues involving charter interpretation which had not been decided at the end of 1947.

Charter interpretation was also involved in discussions regarding use of the veto by the great powers. It was suggested that the declaration made by these powers at San Francisco agreeing to use the veto with moderation should be regarded as an authoritative interpretation of the charter, and it was also contended that the Soviet Union had failed to manifest this moderation. When the Soviet Union vetoed the admission of several new members, acknowledging that its objective was political, in order to induce other states to vote for certain of its candidates, the general assembly asked the International Court of Justice to give an advisory opinion on the right of a state to base its vote upon applicants for membership on grounds other than those stated in the charter. This was the only case in which an issue of charter interpretation was referred to the court, but the second general assembly in Oct. 1947 passed a resolution introduced by Australia urging greater use of the court for this purpose.

In practice the members preferred political procedures for this purpose, perhaps from a fear that judicial interpretation might impair the opportunity of the U.N. to develop in accord with experience and changing conditions. This attitude, however, was balanced by a growing opinion favourable to judicial interpretation by countries outside the soviet bloc. The latter tended to support the right of nullification by individual members.

**Status of States.**—Formerly, sovereign states had been regarded as the proper subjects of international law, although nonsovereign states, international organizations and individuals had been accorded a limited status. Actions of the U.N. developed this tendency. The Ukraine and Byelorussia, although they could not be regarded as sovereign states, were admitted as original members of the U.N. The same was true of India, which subsequently, however, became a sovereign state. The first assembly admitted Afghanistan, Iceland, Sweden and Siam, and the second assembly admitted Yemen and Pakistan, the latter resulting from the division of India. Eleven other states had applied for admission by the end of 1947. Albania, Bulgaria, Hungary, Mongolia and Rumania were supported by the Soviet Union, but failed to obtain the necessary majority in either the Security council or the general assembly, concurrence of which was necessary for admission. On the other hand, Austria, Finland, Eire, Italy, Portugal and Trans-Jordan, supported by the western powers, failed of admission only because of the soviet veto in the Security council. Unsuccessful efforts were made in the second general assembly to bring pressure to eliminate this veto, including the reference to the International Court of Justice already referred to.

The exclusion of Franco Spain from relations with members of the U.N. or from participation in U.N. agencies was continued, but resolutions of the second general assembly were less drastic than those of the first assembly.

The conclusion during 1947 of peace treaties with Germany's five European satellites made these countries eligible for admission to the U.N., although, as noted, they were not actually admitted. A remarkable feature of these treaties was the provision that they should come into force when ratified by the Soviet Union, the United States, the United Kingdom and France. Although the former enemy states were invited to ratify, their ratification was not necessary for the validity of the treaties. Thus the instruments, although they acquired a treaty status among the great powers, could hardly be regarded as peace treaties in the usual sense, but as joint declarations by these powers, assuming legislative authority with reference to the former enemy states.

Negotiations on the German peace at Moscow in the spring and at London in the fall of 1947 reached a deadlock. There seemed little hope of agreement between the western powers and the Soviet Union. In view of the exercise of Germany's sovereignty by the four powers, a peace by declaration of these powers, rather than by treaty with a nonexistent German government, would seem appropriate; but apparently different declarations would apply in the western and eastern zones.

Peace negotiations with Japan were not begun, but in view of the continuance of government under the emperor, that country, differing from Germany, had some status under international law.

This was not true of Korea, which was still divided into two zones, occupied respectively by U.S. and soviet forces. Efforts to break the deadlock failed, and the U.N. general assembly sent a commission to investigate the problem. (*See* also Peace Treaties.)

The special meeting of the assembly called for May 1947 to consider the Palestine problem appointed a commission which proposed to the second general assembly that the country be partitioned. This proposal was accepted, and a committee to supervise the transition from British mandatory control was appointed. No provision, however, was made for forces to implement the decision, and hostilities broke out between Jews and Arabs. The partition proposal involved a Jewish state of three separated fragments, an Arab state, also of three fragments, and an international state of the Jerusalem area. The Trusteeship council of the U.N. was authorized to draft a statute for the latter area. Jerusalem was to be the second international city created since World War II, the first being Trieste, which was internationalized under the Italian peace treaty. (*See* al estine; Trieste, The Free Territory of.)

Problems of status concerning a number of colonia arose during 1947. Thus the former Italian colonies in although renounced by Italy, remained under British n occupation. The Italian treaty, however, provided that principal powers failed to agree on their status within from the coming into force of the Italian treaty, the should be turned over to the general assembly of the U number of proposals for trusteeship of the colonies we sidered by the principal powers.

During the year the Pacific island of Nauru was placed trusteeship of Great Britain, Australia and New Zealan the North Pacific islands, formerly under Japanese ma were placed under strategic trusteeship of the United Thus all of the former mandated territories had been under trusteeship except Palestine and South-West Afric though South Africa had so far resisted the pressure U.N. to place its mandated territory under trusteeship, it to report on this area to the Trusteeship council. The body not only considered this report, which it thought quate, but also examined reports from the administrat trusteeship territories, and considered petitions from t moans and the Ewe people of Togoland for more self-g ment. (*See* also Trustee Territories.)

The status of the Indonesian republic was involved i troversy before the Security council between the Nethe and that country. A commission sent to the spot arran the autumn for the cessation of hostilities.

Under the influence of the U.N., persistent tendency oped toward the breakup of empires and the developm self-government of colonial peoples, with the result that t tinction between sovereign and nonsovereign states had b somewhat blurred.

**Status of International Organizations.**—The status 12 recognized and prospective specialized organizations the U.N. was determined by agreements completed by 9 of with the U.N. Three organizations—the International organization, the International Refugee organization an International Maritime Consultative organization—had n completed or received sufficient ratifications of their co tions. Under these agreements, the specialized organizatio tained their autonomy, and gained the right to send delega appropriate meetings of the U.N. organs. There were als visions for mutual exchange of documents and for consul on personnel and budgetary problems with the U.N.

**Status of Individuals.**—One of the most important de ments of international law following World War II wa recognition that individuals have a direct relationship t world community. Formerly international law had consi that the rights of the individual flowed solely from his rel ship to the state of his residence or of his nationality. U.N. charter, however, called for respect for human right Geneva in the fall of 1947 the Human Rights commission, the chairmanship of Mrs. Franklin D. Roosevelt, produ draft declaration of human rights to be placed before the general assembly, and a draft covenant of human rights open for ratification by states. There was discussion i commission of the procedures for implementing these righ petition of individuals, by discussion in the commission, o sibly by invocation of the jurisdiction of a court of h rights. No conclusions on this matter were reached, how The importance of the question was indicated by an argu made in the supreme court of the United States that the h rights provisions of the charter had become binding law i United States, and that a pledge to assure observance of h ghts and fundamental freedoms without distinction as to race, ex, language, or religion, forbade U.S. courts to assist in the nforcement of restrictive covenants discriminating among races r religions.

The liabilities of individuals under international law were also eveloped by the numerous war crimes trials, both in Europe nd the far east, developing the principles set forth in the Nuernerg charter and enforced by the International Military triunal at Nuernberg. The Committee on Progressive Development of International Law and Its Codification, set up by the rst general assembly of the U.N., recommended the drafting f a code of international criminal law, including the Nuernerg principles, and this was approved by the assembly. It also iscussed the possibility of an international criminal court, but o action was taken. The assembly instructed the Economic nd Social council to prepare a draft convention on the international crime of genocide. (*See* also WAR CRIMES.)

The status of members of the U.N. secretariat and of delerates to the U.N. was defined in the Headquarters agreement etween the U.N. and the United States and approved by the econd general assembly. This agreement supplemented the act f congress providing immunities for international organizations nd their personnel in the United States.

**Prevention of War.**—The international law concerned with revention of war developed in 1947 through efforts to improve he procedure of the U.N. so that it could act against aggressors without the inhibiting influence of the veto. The general assembly, in which there was no veto, provided for an interim committee to study disputes which the Security council failed to deal with, and established a precedent by dealing itself with mportant problems threatening the peace, such as Palestine, Korea and the Balkans. The general assembly also passed resolutions condemning all forms of propaganda likely to provoke hreats to peace, and urging members to disseminate information expressing the undoubted desire of all peoples for peace.

There was much private discussion during 1947 of the possibility of developing a supplementary convention, by which members of the U.N. might agree to contribute forces to deal with a state declared to be an aggressor by the general assembly. Such a convention might implement the right of individual and collective self-defense recognized in the charter, and would be similar to the convention of Rio de Janeiro agreed to by the American republics. This provided for collective defense of the Americas through a procedure involving the votes of two-thirds of those states. The law concerning the prevention of war developed not only through this treaty, but by the judgments in several war crimes trials during the year dealing with the offense of aggressive war. The Binion case in the United States also contributed to the subject by holding that war began with the attack at Pearl Harbor and not with the congressional declaration of war against Japan the following day and against Germany and Italy four days after the assault.

Little progress was made during 1947 on the important problems of atomic energy control, disarmament and organization of U.N. forces. The Atomic Energy committee continued its work, and the majority reiterated in the second report submitted to the general assembly its endorsement of the main elements of the Baruch proposal, but the Soviet Union remained opposed to the concept of international ownership of dangerous fissionable materials, and clung to the veto on sanctions. (*See* ATOMIC ENERGY.)

**Economic and Social Matters.**—The International Civil Aeronautics organization helped develop international law of the air, and the Geneva conference in the autumn contributed toward the reduction of commercial barriers by a convention which considerably lowered tariffs, and by a draft convention for establishment of an International Trade organization to maintain principles of freer and less discriminatory trade. The latter convention was to be acted upon by the Havana conference in 1948.

The policy of the United States of giving aid to Greece and western European countries under the Truman doctrine and the Marshall plan was attacked by the Soviet Union as violating the sovereignty of those states. It was not opposed by any organ of the U.N., however. (*See* EUROPEAN RECOVERY PROGRAM.)

The United Nations Educational, Scientific, and Cultural organization continued its activities to promote freer international communication of culture and information, and considered a treaty on this subject. The Economic and Social council of the U.N. arranged for a conference on freedom of information in the spring of 1948. The International Labour organization cooperated with the Human Rights commission, and initiated several conventions on labour rights, especially on the right of association. The second general assembly passed a resolution on the latter subject.

**Institutions for the Development of International Law.**—The most important agencies directly concerned with international law in 1947 were the International Court of Justice (*q.v.*) and the International Law commission. The court perfected its rules, and the Security council gave it jurisdiction of the Corfu channel case between Great Britain and Albania. Great Britain agreed to place the dispute concerning British Honduras before the court, but Guatemala did not consent. The general assembly asked for an advisory opinion on the question of the grounds upon which members of the U.N. might refuse to vote for applicants to membership. The record for two years of the court's existence could be compared with that of the first two years of the Permanent Court of International Justice under the League of Nations, during which time eight requests for advisory opinions were considered.

During 1946 and 1947, China, Denmark, France, Guatemala, the Netherlands, Norway, Sweden, the United Kingdom and the United States accepted the compulsory jurisdiction of the court, in some cases with reservations. Added to the states still bound by the optional clause of the statute of the Permanent Court of International Justice, transferred to the new court, 27 states were now obliged to submit to the court's jurisdiction. Further accession to the optional clause was urged in a resolution of the second general assembly.

The general assembly, the Security council, the Economic and Social council and nine specialized agencies which had completed agreements with the U.N. were now entitled to ask the court for advisory opinions.

The second general assembly passed a resolution urging greater use of the court, especially in interpreting the charter and the constitutions of the specialized agencies. At Switzerland's request the assembly also defined the conditions under which a nonmember of the U.N. could become a party to the court statute and the conditions under which nonparties to the statute could have access to the court.

Establishment of the International Law commission was authorized by the second general assembly, on recommendation of the Committee on the Progressive Development of International Law and Its Codification. The commission was to be appointed by the third general assembly from recognized international lawyers, to prepare proposals for the codification of international law, the rights of states, and offenses against the peace and security of mankind, including the crimes defined by the Nuernberg tribunal. A convention on the crime of genocide and a convention on human rights were under consideration by the Economic and Social council, but these matters might also eventually be considered by the International Law commission. The commission also was to consider the means of making the sources of customary international law more available, and consult with private organizations in the field.

During 1947 the work of the U.N. and other official bodies in the field of international law was exploratory, and few final conclusions were reached. The powers still manifested a preference for political over juridical methods, but provisions were made for greater use of legal institutions to develop and apply international law in the spirit of the purposes and principles of the charter. (*See* also UNITED NATIONS.) (Q. W.)

**International Monetary Fund.** During 1947 the International Monetary fund began actual operations and engaged in a considerable volume of exchange transactions. The fund's first exchange transaction occurred on May 8, 1947, when France purchased $25,000,000 (U.S.) from the fund in exchange for francs. Total sales of foreign exchange by the fund to member countries against their own currencies to Dec. 31, 1947, are summarized in the following table:

| Country | Sales of U.S. Dollars | Sales of Pounds Sterling |
|---|---|---|
| | (In millions) | |
| United Kingdom | 240.0 | |
| France | 125.0 | |
| Netherlands | 46.0 | 1.5 |
| Mexico | 22.5 | |
| Belgium | 11.0 | |
| Chile | 8.8 | |
| Turkey | 5.0 | |
| Denmark | 3.4 | |
| | 461.7 | 1.5 |

Among the other matters which the fund dealt with during the year were the admission of new members, the establishment of par values for certain countries, revisions of the quotas of certain members, external gold transactions at premium prices, gold production subsidies, exchange restrictions and multiple currency practices.

During 1947 five additional countries (namely, Italy, Turkey, Syria, Lebanon and Australia) were admitted to membership, while the application of Finland for membership was approved by the board of governors meeting in London in Sept. 1947. The addition of these 5 raised the total number of member countries to 45. As of Dec. 31, 1947, the aggregate quotas of members of the fund amounted to $7,921,500,000, as compared with $7,412,500,000 at the end of 1946.

The fund established par values for four of the newly accepted members; namely, Turkey, Syria, Lebanon and Australia. During 1947 a par value for Venezuela, which accepted membership on Sept. 30, 1946, was also set. The par values established were those proposed by the respective countries and were based on existing rates for the U.S. dollar for these nations. The par values of these currencies are:

| Country | Currency | Date Established | U.S. Cents per Currency Unit |
|---|---|---|---|
| Venezuela | Bolivar | April 18, 1947 | 29.8507 |
| Turkey | Lira | June 19, 1947 | 35.7143 |
| Lebanon | Pound | July 29, 1947 | 45.6313 |
| Syria | Pound | July 29, 1947 | 45.6313 |
| Australia | Pound | Nov. 17, 1947 | 322.4000 |

Certain member countries still did not have par values established for them and therefore were not able to use the resources of the fund unless special terms or conditions were arrived at with the fund. These member countries were Brazil, China, the Dominican Republic, Greece, Poland, Uruguay, Yugoslavia and Italy. In addition, par values for the Netherlands Indies and for French Indo-China had not been established. In many cases, the principal reason for not establishing par values was the existence of disturbed monetary conditions, but in others
lative requirements caused the postponement.

The quotas established for Italy, Syria, Lebanon and T
were $180,000,000, $6,500,000, $4,500,000 and $43,000,00
spectively. Australia's quota was set at $200,000,000, the
figure which had been originally agreed to at Bretton W
N.H. In addition, authorization was given by the board of
ernors to revise the quotas of certain member countries if
applied for proportionate changes in their subscriptions i
International Bank for Reconstruction and Development (
Thus, the quota of Iran might be raised from $25,000,0
$35,000,000 and Egypt's from $45,000,000 to $60,000,000

In June 1947 the fund requested all of its members t
operate in the elimination of external gold transactions at
mium prices. Such transactions generally involve a loss of
from monetary reserves and might contribute to the u
mining of exchange stability. Previously, in accordance wit
fund agreement, the fund had prescribed a margin for sales
purchases of gold by members, thereby tending to stabiliz
price of monetary gold for all members and preventing
significant divergencies from par of the external value of r
ber currencies through transactions in gold.

In Dec. 1947 the fund gave consideration to the questic
gold production subsidies in connection with a proposed
production subsidy by the Canadian government. The fun
nounced that all member countries which proposed to intro
new measures to subsidize the production of gold were u
obligation to consult with the fund on the specific measur
be introduced. A subsidy in the form of a uniform pay
per ounce for all or part of the gold produced would const
an increase in price which would not be permissible if the
price paid by the member for gold were to become in exce
parity plus the prescribed margin, as set forth in the articl
agreement. Subsidies involving payment in another form m
also, depending upon their nature, constitute an increas
price. Subsidies on gold production, regardless of their f
were inconsistent with the fund agreement if they underm
or threatened to undermine, exchange stability. Furthermo
subsidies contributed directly or indirectly to monetary i
bility in other countries, they were of concern to the fund.
fund declared its intention to continue to study and to re
with its members their gold policies and any proposed cha
to determine if they were consonant with the provisions of
fund agreement and conducive to a sound international p
regarding gold. In the present circumstances the prop
Canadian action was determined by the fund not to be in
sistent with the policy of the fund.

During 1947 the fund also paid considerable attention to
problems of exchange restrictions and multiple currencies.
fund agreement provides that during the transitional pe
member countries may, subject to certain safeguards, main
and adapt to changing circumstances exchange restrictions
payments and transfers for current international transacti
Most member countries availed themselves of these transiti
arrangements. Only five countries (namely, El Salvador, Gu
mala, Mexico, Panamá and the United States) assumed
obligation to permit freely payments and transfers for cur
transactions. With regard to multiple currency practices,
fund took a practical attitude, keeping in mind the spe
problems of the member countries concerned.

The second annual meeting of the board of governors
convened in London Sept. 11, 1947, and adjourned Sept.
until Sept. 1948, when the third meeting was to be convene
Washington, D.C. Among the matters on which the boar
governors took action at the London meeting were the a
cation of Finland for membership and the requests of Iran

gypt for quota increases. (*See* also BANKING; EXCHANGE CONTROL AND EXCHANGE RATES.) (A. N. O.)

**nternational Refugee Organization:** *see* REFUGEES.

**nternational Trade.** World trade during the first half of 1947 showed substantial gains over he previous year, and prewar levels generally were exceeded. n analysis of the trade of 42 countries which accounted for hree-fourths of world trade in 1938 indicated that actual volume of trade was 10%–20% above the 1946 level and slightly bove the 1938 level.

The striking increase in foreign trade of the countries of the estern hemisphere, more than double prewar volume, was lmost entirely responsible for these gains. Dominant in the rade picture of the hemisphere was the fivefold increase of .S. exports by value (250% by volume) since 1938.

Trade of the eastern hemisphere during the first six months f 1947 gained significantly over the previous year, but volume emained around 35% below the prewar level. A significant art of this decline was caused by the virtual disappearance of erman and Japanese trade.

Although a large proportion of U.S. exports was financed hrough government loans and grants, the nations of the world iquidated approximately $4,500,000,000 of their gold and dollar ssets to pay for U.S. goods and services. Resulting dollar hortages led to tighter import controls during the year by many nations which sought to limit U.S. purchases to the most ssential commodities.

Other forces, however, operated to promote the eventual reer flow of world trade. On Oct. 30, 1947, representatives of he U.S. and 22 other nations meeting in Geneva as the Preparatory Commission of the United Nations Conference on Trade and Employment drafted the charter for the International Trade organization and concluded a series of multilateral rade agreements aimed at a reduction of trade barriers. These greements, which affected the trade of nations doing about hree-fourths of the world's commerce, marked the first successul multilateral effort to reduce tariffs. (*See* TARIFFS.)

**United States Trade.**—The dollar value of U.S. exports eached an all-time peak of approximately $14,500,000,000 in 1947—nearly $5,000,000,000 more than in 1946 and $11,500,000,000 above the 1936–38 average. Rises in prices, however, accounted for nearly half the increase over the previous year. In volume, 1947 exports were 250% larger than in the prewar period.[1]

Imports during 1947 were valued at approximately $5,500,000,000, nearly $750,000,000 higher than in 1946. In terms of volume, however, imports were actually a little lower than in the previous year; the price factor accounted for more than the entire gain in dollar value. Imports in 1947 by value were twice the 1936–38 average, but were only 9% above prewar volume.

Forty-three per cent of United States exports went to western hemisphere destinations in 1947 compared with 34% in prewar years. The proportion of total shipments to Europe declined during the same period to 36%, from 43% prior to World War II.

The change in the import pattern was more striking. Almost 60% of 1947 imports derived from western hemisphere countries compared with 37% in the prewar period, while Europe contributed only 14% in 1947 in contrast with 29% in 1936–38. The proportionate share contributed by Asia was also down sharply to 18% in 1947 as against 30% in the prewar years.

Prior to the multilateral trade agreements concluded at Geneva on Oct. 30, the United States had signed reciprocal trade agreements with 29 nations.

**Canada.**—The focus of development in Canada's foreign trade shifted during 1946 and 1947 from exports, where it had been concentrated during the war years, to imports. During 1947 imports reacted strongly to the easing supply situation, rising to a new record of $2,500,000,000. Exports, meanwhile, had declined from $3,200,000,000 in 1945 to $2,300,000,000 in 1946 but recovered to $2,800,000,000 in 1947.

**Table I.**—*U.S. Exports and Imports by Continents and Percentage Distribution, Annual Average 1936–38, 1946 and January-November 1947*

(Value in millions of dollars)

| Continent | Exports, including re-exports | | | General Imports | | |
|---|---|---|---|---|---|---|
| | 1936-38 average | 1946 | Jan.-Nov. 1947 | 1936-38 average | 1946 | Jan.-Nov. 1947 |
| Total | $2,967 | $9,739 | $13,350 | $2,489 | $4,909 | $5,139 |
| orth America: | | | | | | |
| Northern* | 462 | 1,475 | 1,980 | 353 | 916 | 1,010 |
| Southern | 270 | 1,069 | 1,552 | 248 | 732 | 929 |
| outh America | 274 | 1,152 | 2,156 | 325 | 1,095 | 1,100 |
| urope | 1,243 | 4,097 | 4,843 | 708 | 796 | 738 |
| sia | 499 | 1,342 | 1,762 | 748 | 881 | 941 |
| Oceania | 91 | 117 | 294 | 40 | 183 | 143 |
| frica | 128 | 488 | 764 | 66 | 306 | 277 |

Percentage Distribution

| Continent | Exports, including re-exports | | | General Imports | | |
|---|---|---|---|---|---|---|
| | 1936-38 average | 1946 | Jan.-Nov. 1947 | 1936-38 average | 1946 | Jan.-Nov. 1947 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| orth America: | | | | | | |
| Northern* | 15.6 | 15.1 | 14.8 | 14.1 | 18.7 | 19.7 |
| Southern | 9.1 | 11.0 | 11.6 | 10.0 | 14.9 | 18.1 |
| outh America | 9.2 | 11.8 | 16.1 | 13.1 | 22.3 | 21.4 |
| urope | 41.9 | 42.1 | 36.3 | 28.5 | 16.2 | 14.4 |
| sia | 16.8 | 13.8 | 13.2 | 30.1 | 17.9 | 18.3 |
| Oceania | 3.1 | 1.2 | 2.2 | 1.6 | 3.7 | 2.8 |
| frica | 4.3 | 5.0 | 5.7 | 2.7 | 6.2 | 5.4 |

*Includes Iceland.

**Table II.**—*United States Exports and Imports by Commodity Groups*

| Commodity Group | Exports U.S. merchandise | | | Imports for consumption | | |
|---|---|---|---|---|---|---|
| | 1936-38 average | 1946 | Jan.-Nov. 1947 | 1936-38 average | 1946 | Jan.-Nov. 1947 |
| | (Value in millions and tenths of millions of dollars) | | | | | |
| Total | $2,925.0 | $9,502.5 | $13,180.8 | $2,461.2 | $4,792.2 | $5,088.3 |
| Foodstuffs | 305.3 | 2,166.3 | 2,191.4 | 719.6 | 1,317.0 | 1,485.8 |
| Animal products, inedible | 49.0 | 171.5 | 169.0 | 176.3 | 456.1 | 277.1 |
| Vegetable products, inedible | 217.1 | 712.6 | 649.1 | 372.6 | 596.5 | 732.6 |
| Textile fibres | 321.9 | 551.3 | 395.1 | 177.5 | 482.3 | 332.4 |
| Textiles and textile manufactures | 87.2 | 731.4 | 1,292.5 | 204.1 | 280.9 | 271.5 |
| Wood and paper | 110.5 | 211.1 | 347.6 | 263.5 | 554.6 | 745.9 |
| Nonmetallic minerals | 453.3 | 935.5 | 1,413.1 | 129.4 | 428.0 | 407.0 |
| Metals and manufactures | 366.2 | 727.5 | 1,243.3 | 215.4 | 363.4 | 511.6 |
| Machinery and vehicles | 784.2 | 2,223.8 | 4,095.9 | 20.5 | 44.2 | 60.2 |
| Chemicals and related products | 127.0 | 500.1 | 716.5 | 86.9 | 99.3 | 93.6 |
| Miscellaneous | 103.4 | 571.4 | 667.5 | 95.3 | 169.8 | 170.5 |
| | Per cent distribution | | | | | |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Foodstuffs | 10.4 | 22.7 | 16.6 | 29.2 | 27.5 | 29.2 |
| Animal products, inedible | 1.7 | 1.8 | 1.3 | 7.2 | 9.5 | 5.4 |
| Vegetable products, inedible | 7.4 | 7.5 | 4.9 | 15.1 | 12.4 | 14.4 |
| Textile fibres | 11.0 | 5.8 | 3.0 | 7.2 | 10.1 | 6.5 |
| Textiles and textile manufactures | 3.0 | 7.7 | 9.8 | 8.3 | 5.9 | 5.3 |
| Wood and paper | 3.8 | 2.2 | 2.6 | 10.7 | 11.6 | 14.7 |
| Nonmetallic minerals | 15.5 | 9.8 | 10.7 | 5.3 | 8.9 | 8.0 |
| Metals and manufactures | 12.5 | 7.7 | 9.4 | 8.8 | 7.6 | 10.1 |
| Machinery and vehicles | 26.8 | 23.4 | 31.1 | .8 | .9 | 1.2 |
| Chemicals and related products | 4.3 | 5.3 | 5.4 | 3.5 | 2.1 | 1.8 |
| Miscellaneous | 3.5 | 6.0 | 5.1 | 3.9 | 3.5 | 3.4 |

**Table III.**—*Canada: Distribution of Merchandise Trade*

(Millions of Canadian dollars)

| Country | Imports | | | | Exports | | | |
|---|---|---|---|---|---|---|---|---|
| | 1937-39 Average | 1945 | 1946 | 1947* | 1937-39 Average | 1945 | 1946 | 1947† |
| Total | $746 | $1,586 | $1,867 | $2,550 | $920 | $3,218 | $2,312 | $2,775 |
| United Kingdom | 127 | 141 | 142 | 185 | 363 | 963 | 598 | 751 |
| Other British commonwealths | 77 | 131 | 139 | 160 | 123 | 523 | 307 | 418 |
| Europe (except British) | 41 | 19 | 40 | 60 | 69 | 386 | 321 | 350 |
| United States | 471 | 1,202 | 1,405 | 1,965 | 303 | 1,197 | 888 | 1,034 |
| Latin America | 18 | 87 | 126 | 160 | 20 | 58 | 93 | 130 |
| Other | 12 | ..... | 15 | 20 | 42 | 91 | 105 | 92 |

*Estimated from 11 months' figures.
†Preliminary.

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[1] Approximately 25% of U.S. exports were still subject to control in 1947.

Because the accelerating import was, in the main, a dollar import, and the dominion's export customers in the sterling area and Europe were unable to pay in dollars for a considerable portion of the food and other goods they were taking from Canada, a critical drain of exchange reserves arose and imports were again placed under restriction. These restrictions were aimed chiefly at the reduction of U.S. trade and were accompanied by a project to ration capital goods import to increase production for export to the U.S.

**Latin America.**—Most of the countries of Latin America reached a difficult stage in the transition to postwar trading patterns. Following a period of exceptionally heavy foreign buying supported by accumulations of war-earned dollar exchange, a growing inflation led to speculative and nonessential purchasing which placed a strain on dollar balances and focused attention early in 1947 on the need for regulatory measures. Import and exchange control restrictions were adopted which tended during the latter part of the year to arrest the upward trend of imports. Argentina, Brazil, Mexico, Colombia and Peru became particularly concerned over the need to conserve their dollar resources.

Table IV.—*Trade of Specified Latin American Republics for 1938, January-August 1946 and January-August 1947*

(Value in thousands of dollars)

| Country | 1938 |  | January-August 1946 |  | January-August 1947 |  |
|---|---|---|---|---|---|---|
|  | Exports | Imports | Exports | Imports | Exports | Imports |
| Argentina | $409,212 | $428,186 | $699,413 | $332,911 | $950,756 | $731,715 |
| Brazil | 295,620 | 294,589 | 624,172 | 398,745 | 736,731 | 817,943 |
| Chile | 140,669 | 102,785 | 139,738 | 120,604 | 172,443 | 164,928 |
| Colombia | 80,774 | 89,054 | 120,926 | 143,849 | 148,688 | 243,417 |
| Peru | 76,705 | 58,328 | 95,917 | 75,231 | 97,743 | 110,927 |
| Uruguay | 61,660 | 61,567 | 99,532 | 83,643 | 101,675 | 132,564 |
| Mexico | 195,871 | 115,475 | 253,216 | 336,109 | 293,578 | 457,177 |
| Cuba | 142,678 | 106,007 | *132,299 | * 98,564 | *205,771 | *149,258 |

*Data for January through April only.

Argentina's exports were still predominantly to the United Kingdom, but it had been able through agreement with that country to exchange sterling for dollars, and was purchasing heavily in the U.S. market until Aug. 20, when the convertibility privilege was withdrawn as a result of the stringent dollar position of the United Kingdom. Purchases from the U.S. were thereupon shut off completely for a period, but were later resumed on a selective basis.

Brazil's two-way trade had traditionally lain heavily with the U.S. After the war, Europe's needs caused a revival of trading with that area, however, and in consequence Brazil piled up a sizable export balance with countries other than the U.S. Dollar balances, on the other hand, declined as Brazil began to purchase U.S. products in quantity, and the government felt impelled in June 1947 to impose exchange restrictions granting priority to payments for imports considered essential.

Deferred wartime demand and the persistence of inflation in Mexico boosted the import balance in that country after 1944 to a point where the government found it necessary in July 1947 temporarily to prohibit the importation of certain nonessential goods constituting 15% to 20% of the value imports.

Table V.—*Principal United Kingdom Imports, 1938, 1946, and January-September 1947*

(In pounds sterling)

| Commodity | 1938 | 1946 | Jan.-Sept. 1947 |
|---|---|---|---|
| Meat | £90,679,859 | £139,244,465 | £113,121,199 |
| Dairy products | 80,013,976 | 115,108,246 | 103,319,192 |
| Grain and flour | 74,418,338 | 90,931,229 | 111,049,909 |
| Beverages & preparations | 46,512,572 | 61,718,669 | 62,610,140 |
| Oils, fats and resins, mfd. | 44,070,485 | 82,804,352 | 64,631,951 |
| Wood and timber | 42,852,348 | 52,381,816 | 68,642,062 |
| Wool, raw, waste and rags | 42,618,055 | 40,286,835 | 43,280,989 |
| Nonferrous metals & mfgs. | 40,817,190 | 41,544,196 | 53,922,657 |
| Fresh fruits & vegetables | 37,657,557 | 52,471,999 | 69,435,423 |
| Raw cotton and waste | 29,579,628 | 44,606,364 | 50,106,664 |
| Seeds and nuts | 30,595,876 | 62,134,743 | 88,748,862 |
| Tobacco | 23,284,633 | 65,621,925 | 31,850,029 |
| All other imports | 336,408,416 | 448,827,741 | 477,083,610 |
| Total imports | 919,508,933 | 1,297,682,580 | 1,337,802,687 |

**"TRYING TO MAKE BOTH ENDS MEET,"** a reference to Great Britai ficulties in balancing its foreign trade in 1947, by Vicky of the *Chronicle* (London)

Both Colombia and Peru also increased their restrictic the sale of foreign exchange during the year. On the other Cuba and Venezuela and a few of the smaller Central Am and Caribbean republics were exceptions to the difficult exchange situation. Because of the nature of their expo resources, demand for their products in the U.S. continu a sufficiently high level to balance their imports.

Since these measures to restrict imports were not accom by measures to reduce the volume, or even to curb the expa of the internal means of payment, the pressure for impo mained strong in Latin America.

Table VI.—*Principal Sources of United Kingdom Imports, 1938, 1946, and January-September 1947*

(In pounds sterling)

| Country | 1938 | 1946 | Jan.-S |
|---|---|---|---|
| United States | £117,980,480 | £226,876,145 | £228, |
| Canada | 78,708,393 | 195,149,546 | 173, |
| Argentina | 38,470,723 | 66,961,186 | 98, |
| Australia | 71,841,683 | 67,664,355 | 68, |
| New Zealand | 46,865,368 | 74,555,163 | 73, |
| British India | 49,939,297 | 68,934,648 | 66, |

**United Kingdom.**—The United Kingdom's foreign tra 1947 was marked by continuation of an adverse balan trade and application of measures to alleviate this situ The government continued selling external capital assets tailing imports and expanding exports, and drawing frequ on foreign loans. The suspension of sterling convertibilit announced in Aug. 1947, and one month later the gover introduced its new import-export program designed to n the gap in its balance of payments.

Table VII.—*Principal United Kingdom Exports, 1938, 1946, and January-September 1947*

(In pounds sterling)

| Commodity | 1938 | 1946 | Jan.-Se |
|---|---|---|---|
| Machinery | £57,867,565 | £113,799,631 | £129,4 |
| Cotton yarns & mfgs. | 49,680,714 | 63,211,348 | 56,2 |
| Vehicles | 44,491,048 | 113,513,725 | 117,4 |
| Iron and steel | 41,692,019 | 80,047,156 | 61,5 |
| Coal | 37,406,306 | 9,060,730 | 1,6 |
| Woollen yarns & mfgs. | 26,813,619 | 43,595,311 | 39,9 |
| Chemicals | 22,279,789 | 66,055,909 | 49,9 |
| Electrical goods | 13,430,405 | 37,391,502 | 35,0 |
| Nonferrous metals | 12,339,096 | 37,661,875 | 29,0 |
| Implements & instruments | 9,027,687 | 26,961,297 | 25,6 |
| Pottery, glass & abrasives | 9,610,109 | 27,625,167 | 23,4 |
| All other exports | 146,116,963 | 292,762,587 | 248, |
| Total exports | 470,755,320 | 911,686,238 | 817, |

Table IX.—*Preliminary Estimates of Percentage Distribution of Imports* of Participating European Countries from United States, Western Europe, Eastern Europe, and All Other Sources, 1938, 1946, and January-June 1947*

| | 1938 | | | | | 1946 | | | | | January-June 1947 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total imports Million dollars | Per cent of total imports From United States | From western Europe | From eastern Europe | From all other sources | Total imports Million dollars | Per cent of total imports From United States | From western Europe | From eastern Europe | From all other sources | Total imports Million dollars | Per cent of total imports From United States | From western Europe | From eastern Europe | From all other sources |
| rticipating European countries | | | | | | | | | | | | | | | |
| Austria† | $ 273 | 6.0 | 39.7 | 40.2 | 14.1 | $ 108 | 46.6 | 37.9 | 5.5 | 10.0 | $ 75 | 29.8 | 48.7 | 11.5 | 10.0 |
| Belgium-Luxembourg | 779 | 10.8 | 49.3 | 8.5 | 31.4 | 1,199 | 17.6 | 55.9 | 2.2 | 24.3 | 833 | 23.4 | 44.0 | 3.5 | 29.1 |
| Denmark | 355 | 7.9 | 79.1 | 6.5 | 6.5 | 591 | 9.0 | 75.4 | 7.7 | 7.9 | 293 | 21.5 | 58.0 | 9.9 | 10.6 |
| Eire | 202 | 11.4 | 62.7 | 3.7 | 22.2 | 289 | 11.8 | 61.5 | 1.0 | 25.7 | 213 | 18.8 | 58.7 | 1.9 | 20.6 |
| France | 1,326 | 11.5 | 30.8 | 4.8 | 52.9 | 2,566 | 38.9 | 22.3 | 1.7 | 37.1 | 1,401 | 27.1 | 21.1 | 1.6 | 50.2 |
| Germany‡ | 2,189 | 7.4 | 37.3 | 16.8 | 38.5 | 895 | 48.9 | 48.2 | 2.9 | — | 447 | 74.3 | 23.9 | 1.8 | — |
| Greece | 132 | 7.3 | 55.4 | 21.8 | 15.5 | 293 | 52.2 | 20.4 | 0.3 | 27.1 | 119 | 74.9 | 23.2 | 1.1 | 0.8 |
| Iceland | 11 | 0.9 | 96.4 | 1.8 | 0.9 | 68 | 25.1 | 65.2 | 3.7 | 6.0 | 36 | 22.2 | 63.9 | 5.6 | 8.3 |
| Italy | 593 | 11.9 | 49.7 | 12.6 | 25.6 | §730 | 62.6 | 16.2 | 1.7 | 19.5 | 1,021 | 50.4 | 19.0 | 4.1 | 26.5 |
| Netherlands | 778 | 10.9 | 53.3 | 8.3 | 27.5 | 809 | 24.9 | 51.2 | 2.5 | 21.4 | 730 | 31.6 | 38.8 | 4.4 | 25.2 |
| Norway | 293 | 10.0 | 64.1 | 6.9 | 19.0 | 442 | 21.8 | 56.5 | 4.6 | 17.1 | 383 | 26.9 | 54.3 | 4.7 | 14.1 |
| Portugal | 102 | 11.6 | 60.4 | 2.3 | 25.7 | 278 | 25.0 | 35.1 | 2.8 | 37.1 | 123 | 30.1 | 39.8 | — | 30.1 |
| Sweden | 525 | 16.2 | 56.4 | 8.9 | 18.5 | 858 | 24.1 | 43.3 | 8.2 | 24.4 | 630 | 31.0 | 40.6 | 7.8 | 20.6 |
| Switzerland | 368 | 7.8 | 64.5 | 11.5 | 16.2 | 800 | 16.0 | 49.8 | 7.2 | 27.0 | 520 | 21.6 | 49.8 | 9.4 | 19.2 |
| Turkey | 119 | 10.4 | 70.8 | 12.8 | 6.0 | 121 | 31.3 | 44.4 | 4.0 | 20.3 | 97 | 32.0 | 45.4 | 5.1 | 17.5 |
| United Kingdom | 4,496 | 12.8 | 24.7 | 8.1 | 54.4 | 5,230 | 17.5 | 15.2 | 1.5 | 65.8 | 3,305 | 18.5 | 15.9 | 1.7 | 63.9 |
| tal participating Europe | $12,541 | 11.0 | 39.1 | 10.3 | 39.6 | $15,277 | 24.9 | 32.8 | 2.9 | 39.4 | $10,226 | 29.0 | 28.3 | 4.2 | 38.5 |

*Excludes U.N.R.R.A. shipments.
†Prewar data for Austria are for 1937.
‡Data for 1938, prewar Germany; data for 1946 and Jan.-June 1947 include partial data from soviet zone.
§Excludes surplus property and gift packages.
Note: Owing to the multiplicity of exchange rates, data are tentative for 1946 and first six months 1947; western Europe excludes Spain.

The volume of goods imported into the United Kingdom in 946 was about 66% of the prewar volume, and by the third uarter of 1947 had increased to 89%.

Purchases during 1947 were restricted not only by world hortages of foodstuffs and raw materials but also by the deision of the British government to import only essential comnodities.

Europe, which provided about 33% of the United Kingdom's mports in 1938, supplied only about 22% during the first nine nonths of 1947. British Commonwealth countries continued to upply approximately 40% of total imports, while those from he western hemisphere increased from 33% to 47% during this eriod.

Imports from nonsterling countries accounted for 70% of the otal during the first nine months of 1947.

At the beginning of 1947 the government introduced a plan lesigned to increase the volume of exports to 140% of the 1938 evel. This goal was to be achieved by December, but in view f severe shortages in coal and other raw materials during the vinter months the program was unattainable. A revised export rogram was announced in September based on an expansion of xports to 164% of 1938 by the close of 1948.

During the third quarter of 1947 the volume index of exports vas 114%.

Of the United Kingdom's ten leading exports before World War II, only five—machinery, vehicles, iron and steel, chemicals and electrical goods—were exported in amounts equal to or exceeding prewar volume.

During the first nine months of 1947 manufactured goods comprised 88% of total exports.

Table VIII.—*Principal Purchasers of United Kingdom Exports, 1938, 1946, and January-September 1947*

(In pounds sterling)

| Country | 1938 | 1946 | Jan.-Sept. 1947 |
|---|---|---|---|
| British India | £33,764,754 | £79,750,047 | £68,123,454 |
| Union of South Africa | 39,493,503 | 75,359,969 | 67,989,207 |
| Australia | 38,164,905 | 55,181,503 | 49,450,775 |
| Eire | 20,281,525 | 39,522,872 | 37,728,820 |
| United States of America | 20,483,635 | 35,447,661 | 34,206,561 |
| Canada | 22,529,765 | 32,603,137 | 30,166,429 |

**Continental Europe.**—By the end of 1947, production in half of the countries of Europe had already exceeded prewar levels. In the first six months of the year the imports of the 16 countries participating in the European Recovery program reached a total of $10,000,000,000, 29% of which were from the U.S. and 33% intra-European. Of the $6,000,000,000 in exports during the first half of the year, approximately 52% went to European destinations and only approximately 5% to the U.S.

Unusually large imports into Europe would be needed for some years, first to compensate for the sharp but temporary reduction in the normal indigenous production of coal, food and fertilizer and, secondly, for the replacement and repair of plant

Table X.—*Preliminary Estimates of Percentage Distribution of Exports from Participating European Countries into the United States, Western Europe, Eastern Europe, and All Other Destinations, 1938, 1946, and January-June 1947*

| | 1938 | | | | | 1946 | | | | | January-June 1947 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total exports Million dollars | Per cent of total exports To United States | To western Europe | To eastern Europe | To all other sources | Total exports Million dollars | Per cent of total exports To United States | To western Europe | To eastern Europe | To all other sources | Total exports Million dollars | Per cent of total exports To United States | To western Europe | To eastern Europe | To all other sources |
| articipating European countries | | | | | | | | | | | | | | | |
| Austria* | $ 228 | 2.5 | 51.8 | 34.2 | 11.5 | $ 22 | 6.8 | 66.7 | 25.1 | 1.4 | $ 28 | 7.1 | 64.3 | 25.0 | 3.6 |
| Belgium-Luxembourg | 732 | 6.7 | 65.2 | 6.8 | 21.3 | 677 | 10.8 | 66.2 | 2.8 | 20.2 | 646 | 4.0 | 62.2 | 4.5 | 29.3 |
| Denmark | 335 | 1.1 | 89.9 | 4.0 | 5.0 | 336 | 3.2 | 78.0 | 14.9 | 3.9 | 211 | 3.3 | 70.2 | 21.3 | 5.2 |
| Eire | 117 | 0.5 | 98.0 | 0.1 | 1.4 | 154 | 1.5 | 97.4 | 0.1 | 1.0 | 64 | — | 98.4 | — | 1.6 |
| France | 880 | 5.5 | 49.7 | 5.7 | 39.1 | 852 | 6.2 | 49.2 | 1.4 | 43.2 | 897 | 3.0 | 41.4 | 2.0 | 53.6 |
| Germany† | 2,111 | 2.8 | 62.5 | 17.2 | 27.5 | 286 | 1.1 | 92.0 | 6.9 | — | 215 | 1.4 | 95.3 | 3.3 | — |
| Greece | 91 | 17.0 | 62.8 | 13.7 | 6.5 | 40 | 54.9 | 28.5 | 0.8 | 15.8 | 38 | 26.3 | 65.8 | 7.9 | — |
| Iceland | 13 | 9.2 | 83.9 | 1.5 | 5.4 | 45 | 13.1 | 61.9 | 23.4 | 1.6 | 15 | 6.7 | 80.0 | 13.3 | — |
| Italy | 552 | 7.4 | 41.5 | 9.2 | 41.9 | 287 | 16.5 | 48.9 | 3.1 | 31.5 | 375 | 5.1 | 50.1 | 4.8 | 40.0 |
| Netherlands | 572 | 3.6 | 64.9 | 7.0 | 24.5 | 296 | 4.8 | 72.8 | 4.8 | 17.6 | 279 | 2.1 | 64.5 | 6.5 | 26.9 |
| Norway | 193 | 7.7 | 73.7 | 6.2 | 12.4 | 242 | 5.3 | 66.1 | 6.6 | 22.0 | 175 | 5.1 | 62.3 | 12.6 | 20.0 |
| Portugal | 50 | 5.3 | 63.5 | 2.8 | 26.4 | 186 | 14.9 | 39.5 | 2.2 | 43.4 | 74 | 13.5 | 43.2 | — | 43.3 |
| Sweden | 465 | 8.9 | 67.0 | 11.4 | 12.7 | 644 | 7.2 | 62.2 | 9.1 | 21.5 | 346 | 10.7 | 57.5 | 8.7 | 23.1 |
| Switzerland | 301 | 6.9 | 60.5 | 11.2 | 21.4 | 625 | 16.9 | 52.2 | 4.8 | 26.1 | 372 | 12.6 | 49.7 | 7.8 | 29.9 |
| Turkey | 115 | 12.2 | 69.6 | 12.7 | 5.5 | 218 | 20.3 | 52.3 | 4.4 | 23.0 | 139 | 19.4 | 53.3 | 11.5 | 15.8 |
| United Kingdom | 2,302 | 4.4 | 28.9 | 5.9 | 60.8 | 3,674 | 3.9 | 31.5 | 4.3 | 60.3 | 2,076 | 4.3 | 27.9 | 4.8 | 63.0 |
| otal participating Europe | $9,057 | 4.9 | 51.2 | 10.0 | 33.9 | $8,584 | 7.1 | 48.7 | 4.9 | 39.3 | $5,950 | 5.4 | 46.8 | 5.8 | 42.0 |

*Prewar data for Austria are for 1937.
†Data for 1938, prewar Germany; data for 1946 and Jan.-June 1947 include partial data from soviet zone.
Note: Owing to the multiplicity of exchange rates, data are tentative for 1946 and first six months 1947; western Europe excludes Spain.

and equipment. These needs are superimposed on normal European requirements of raw materials. It was expected that the current large gap between imports and exports would diminish rapidly as expected increases in production led to expanding exports.

Tables IX and X are based on very preliminary reports of trade. As will be noted, figures are not available for all areas.

**Far East.**—The foreign trade of Japan, the most important trading nation of the far east prior to World War II, was beginning to return to peacetime channels in 1947. Imports were sufficient to meet urgent needs of the economy and to prevent disease and unrest. The small volume of exports consisted chiefly of raw silk and certain other items handled through the U.S. Commercial company and of shipments to such nearby areas as China and Korea. In the first half of 1947 a U.S. trade mission conferred with the supreme commander for the allied powers in Tokyo, and arrangements were made for the partial resumption of private trade with Japan.

China's foreign trade during the same period was increasingly affected by economic, political and military difficulties. From July 1946 to Sept. 1947, inclusive, net legal imports into China (excluding U.N.R.R.A. shipments) were valued at approximately U.S. $775,000,000, or almost three times net exports of about U.S. $285,000,000. While the value of exports was greater than in many similar prewar periods, the value of imports represented a still larger increase. The excess of imports had been the major cause of the continuous deficit in China's balance of payments and the serious drain on its foreign exchange resources. The Chinese government restricted nonessential imports and conserved foreign exchange by a system of quotas, import prohibitions, and exchange controls in an effort to reduce the excess of imports and obtain vitally needed commodities.

Copra, the production of which exceeded all records in 1947, remained the mainstay of Philippine exports, and, in fact, of the Philippine economy. Late in 1947 sugar became available for export for the first time since 1941. Heavy dollar receipts from U.S. expenditures in the Philippines and the great demand for goods for consumer needs and construction resulted in imports about three times prewar levels. Supplies of consumer goods and production for export increased, and inflationary trends abated.

Siam's trade, conducted through private channels, also progressed toward a normal peacetime status. Restrictions were still in effect, however, with respect to the four most important export commodities.

Although rubber production and export led to some revival of Malaya's trade, imports were still restricted generally to rehabilitation and essential goods. Trading conditions in other areas of southeast Asia were still far from normal. Difficulties were especially acute in Indo-China and in the Netherlands Indies because of disturbed political conditions. (*See* also BUSINESS REVIEW; EXCHANGE CONTROL AND EXCHANGE RATES; INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT; INTERNATIONAL MONETARY FUND; LEND-LEASE; TARIFFS; UNITED NATIONS RELIEF AND REHABILITATION ADMINISTRATION.) (T. C. BL.)

**International Trade Organization:** *see* TARIFFS.

## Interstate Commerce Commission.

The duties and powers of the Interstate Commerce commission are set forth in the Interstate Commerce act, originally passed in 1887 and later amended in many important particulars. The act is divided into four parts, and deals with the regulation of rail, motor and water carriers and freight forwarders. The regulatory powers of the commission extend, among other things, to the charges made by carriers for transportation services; to questions involvi valuation and financial reorganization of railroads; to the ance of securities; to the acquisition or control of these v carriers by other carriers or persons; to their accounting tices and the abandonment of lines of railway; and to m involving the determination of whether public convenienc necessity require the institution of new services by moto water carriers or by freight forwarders, or for the constr and operation of lines of railway.

There was no substantial change in the statutory author the commission during 1947. The full membership of 1 attained by the appointment of Richard F. Mitchell to fi vacancy caused by the death in 1946 of Commissioner Clau Porter. Commissioner J. Monroe Johnson continued to se director of the Office of Defense Transportation. Commis Clyde B. Aitchison served as chairman during the year and Commissioner William E. Lee was selected as chairma the year 1948.

The carriers subject to the jurisdiction of the comm were confronted with numerous and difficult problems c the year, including the rising costs of labour and materials, war shifts in the movement of commodities because of cha the location of plants and substitution of commodities changes in competitive advantages brought about by diffe in technological improvements between the different agenc transport. Private transportation had increased and was pa larly felt in the passenger field.

Numerous urgent appeals for increased revenues to me increased costs of transportation resulted in authorizati the commission of increased freight rates and charges, e and forwarder rates, passenger fares and Pullman charge interim increase of 10% in rail freight rates and charge permitted in October to be added to the increase effective J 1947, pending the investigation of the proposal for more stantial increases.

On May 12, 1947, the supreme court of the United upheld the findings and order of the commission requi substantial revision of class rates east of the Rocky mour Subsequently, the commission modified its order in the rate case, so as to permit a uniform increase of 22.5% i rates there prescribed. As so increased, the new class rat came effective Aug. 22, 1947, and were increased another under the interim order of Oct. 6, 1947. The rail carriers u took to formulate a nation-wide uniform classification requisite in the class-rate case. (C. B.

**Intestinal Disorders:** *see* ALIMENTARY SYSTEM, DISO OF.

## Intoxication, Alcoholic.

The trend toward differ ting more clearly betwee coholism" and "the use of alcohol" continued to devel 1947. The former includes those who become the victims c pernicious effects associated with its excessive use. In th jority of those who use alcoholic beverages, they neither as the source, nor do they cause physical and mental illn social ostracism.

Studies in the United States indicated that approxin 65% of the population over 21 years of age drink alc beverages (75% male, 56% female). Among the popu over 21 years of age, 27% of males and 8% of females habitually or regularly. Thus there is isolated, among thos drink, a fairly large group of people out of which emerg potential alcoholics.

The rates of chronic alcoholism were not greatly influ the many and diverse liquor control systems inaugurated ter repeal of prohibition in the United States. Between 1945 ıd 1947 the rate was reported to have increased in urban eas and decreased in rural communities. There was no ap- rent basis for believing that female inebriety was increasing ster than male inebriety. The narrowing gap between the sexes respect to drinking alcoholic beverages, however, appeared be in accord with the general world trend of society toward ss and less differentiation in the social behaviour of men and omen.

In France the year witnessed a movement in favour of alco- ol and a legislative proposal to abrogate the laws of 1940 and 41 restricting its uses. Those supporting such legislation con- nded that the laws aggravated the situation, that they pro- oted bootlegging and other antisocial trends and that such gimentation was contrary to French ideals. Those opposing lieved that the laws had improved public health.

The long-range approach to the solution of the problem of ronic alcoholism, more or less crystallized in the literature of 947, embraces education, research and treatment. The latter cludes community and hospital services and facilities for erapy, the training of personnel to undertake the duties in- olved, measures for social readjustment and prevention and ommitment centres for the intractable alcoholic. The majority pinion regarded these as a public function and that the send- g of drunks to jail "to teach them a lesson" is a primitive nd a useless gesture. Controversies still obtained on whether ere is a common denominator in all cases of alcoholism and hether specific physical and psychological dispositions account r the development of alcoholism rather than other symptoms f maladjustment.

One physical hypothesis was proposed to explain the nature nd causes of alcoholism. Its approach involved the interplay f hereditary and environmental factors. According to this ypothesis, some individuals inherit a constitutional metabolic attern which makes possible a readily developed intense appe- ite for alcohol. No standard body of observations, however, onfirmed this biochemical genetic hypothesis respecting alco- olism.

There was support for the opinion that habitual drunkards re at no time able to repress the true characteristics of their ersonality in conventional patterns and that they express their rue personality characteristics by having resort to alcoholic in- oxication. Among these are the cyclothymic, schizophrenic, sychoneurotic and psychopathic personalities and other situa- ional types of reaction among those whose standards of con- entional integration of the personality is individually too high or them.

The use of insulin combined with dextrose and vitamin B or the treatment of acute intoxication continued to receive ndorsement. Insulin alone, ranging from small to subshock loses, was also advocated, with rapid results reported in the obering process.

Favourable responses were reported from the application of ntensive combined therapy in cirrhosis of the liver, both with nd without fluid in the abdomen. The treatment consists of a naximum protein—high carbohydrate—high vitamin—low fat liet, plus liver extract and vitamins, and including methionine, asein, and choline and cystine. (*See* also Liquors, Alco- iolic.)

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(W. L. T.)

**Inventions:** *see* Patents.

**Inverchapel, Archibald John Kerr Clark Kerr,** 1st Baron, of Loch Eck (1882– ), British diplomat, was born on March 17, 1882, and was privately educated. He entered the British foreign service in 1906, and after service in World War I returned, and in 1919–22 was acting agent in Tangier; 1922–25, first secretary at Cairo; 1925–28 minister to Central American republics, and 1928–30 minister to Chile. In April 1931 he was transferred to Stockholm, in 1935 appointed ambassador to Iraq, in 1937 to China and in 1942 to the U.S.S.R., where he succeeded Sir Stafford Cripps. He was appointed ambassador to the United States on Jan. 25, 1946, but before taking up his duties he was engaged on a special mission to Java, to attempt mediation in the Dutch-Indonesian conflict. On Jan. 21, 1946, he was raised to the peerage, and took the title of Baron Inverchapel of Loch Eck. In Washington, on March 20, 1947, he presented to General of the Army Dwight Eisenhower the sword of honour given the latter by the city of London.

**Investment Banking:** *see* Banking.

**Investments, Foreign, in the U.S.:** *see* Foreign Investments in the United States.

**Iodine.** The iodine production of the United States is not reported. Imports increased from 220,526 lb. in 1945 to 886,578 lb. in 1946 but these figures do not have great significance, since imports are brought in only as they are needed to replenish a rather large stock that is maintained in the country. Over a 15-yr. period, imports had averaged about 1,000,000 lb. a year. (G. A. Ro.)

**Iowa.** A north central state of the United States, popularly known as the "Hawkeye state." Area, 56,280 sq.mi., of which 294 sq.mi. are water. The population in 1940 was 2,538,268, with 1,084,231 listed as urban and 1,454,037 as rural. Only 16,694 were Negroes, and 883 others were nonwhite, about half of whom were Indians. Of the white population 117,245 were foreign-born. In 1947 the population, exclusive of persons overseas in the armed services, was estimated to be 2,606,000. The principal cities are: Des Moines, the capital (159,819); Sioux City (82,364); Davenport (66,039); Cedar Rapids (62,120); Waterloo (51,743); Dubuque (43,892) and Council Bluffs (41,439).

**History.**—The principal state officers elected in Nov. 1946, who took office in Jan. 1947, were: governor, Robert D. Blue; lieutenant governor, Kenneth A. Evans; secretary of state, Rollo H. Bergeson; auditor, Chet B. Akers; treasurer, J. M. Grimes; secretary of agriculture, Harry D. Linn; attorney general, Robert L. Larson (to fill a vacancy) and superintendent of public instruction, Jessie M. Parker. The general assembly met in regular session from Jan. 13 to April 25, 1947. A special session, which convened Dec. 16–19, 1947, to consider income tax reduction, provided for an increase in exemptions of 50% and a deduction of 25% from the computed tax.

**Education.**—During the school year 1945–46, out of the school population (ages 5–21) of 627,456, 346,508 pupils were enrolled in the 8,149 public elementary schools; 113,986 in the 890 public high schools and 923 in the 21 junior colleges. Teachers in the public schools numbered 22,964. The general assembly in 1947 appropriated $2,000,000 annually for transportation of pupils to public schools and $1,000,000 annually to aid districts where a maximum levy on property fails to produce a minimum income per child.

There are three state-supported institutions of higher education—the State University of Iowa (1847) at Iowa City, the State College of Agriculture and Mechanic Arts (1858) at Ames and the State Teachers college (1876) at Cedar Falls. In Oct. 1947, these 3 institutions had a total enrolment of 22,670, of which 12,215 were veterans attending under the G.I. Bill of Rights. There are 23 other colleges sponsored by churches and private agencies. The total enrolment in these colleges in Oct. 1947 was 18,211, including 8,467 veterans. The number of veterans in college in Iowa dropped from about 25,000 in 1946 to 20,682 in 1947.

**Social Insurance and Assistance, Public Welfare and Related Programs.**—During the fiscal year ending June 30, 1947, Iowa paid out $21,083,963 for old-age assistance, of which $11,082,252 came from the federal government. The state appropriations for 1947–48 included $12,000,000 for old-age assistance, $300,000 for aid to the blind, $375,000 for aid to dependent children and $120,000 for child welfare. The general assembly of 1947 also appropriated $500,000 for the construction at Iowa City of a hospital-school for handicapped children. During 1946–47 a total of $9,689,645 ($1,299,954 of which was interest from the federal government) was collected for unemployment insurance and $2,878,067 was expended, leaving a balance on July 1, 1947, of $71,525,673. Approximately 400,000 persons were covered by this insurance.

On Dec. 1, 1947, there were 13,021 inmates in the state's charitable and correctional institutions—6,364 in the four hospitals for the insane; 1,677 in the hospital for epileptics and school for feebleminded at Woodward; 1,853 in the state school (for feebleminded) at Glenwood; 1,750 in the state prisons for men at Fort Madison and Anamosa; 72 in the reformatory for women at Rockwell City; 217 in the training school for boys at Eldora; 100 in the training school for girls at Mitchellville and 193 in the state juvenile home at Toledo.

**Transportation and Communications.**—There were in 1947 approximately 100,000 mi. of public highways in Iowa, of which more than 9,600 mi. were primary roads managed by the state and about 13,750 mi. were county trunk highways. By Jan. 1, 1947, Iowa had 5,557.6 mi. of paving, and 51,918.2 mi. of gravelled roads. During 1946–47 the state spent $7,920,467 on constructing primary roads and $5,009,859 for road maintenance.

At the close of 1946 the track mileage of steam railroads in Iowa was 9,214.86 mi. During 1946 these roads carried 9,539,970 passengers and 97,922,366 tons of freight. There were at the same time 397.20 mi. of electric interurban track on which 943,721 passengers and 3,658,890 tons of freight were transported. Motor buses carried 21,669,303 passengers in 1945. The number of motor vehicles registered in Iowa in 1946 was 862,812 of which 624,674 were passenger cars. There were 1,245 mi. of pipe lines for crude oil and gasoline and 2,690 mi. for natural gas. Telephones in Iowa in 1947 numbered 724,220, 292,200 of which were in local independent companies. In 1945, 70% of farms and 94% of urban dwellings had telephones.

**Banking and Finance.**—On June 30, 1947, there were 96 national banks in Iowa with deposits of $772,443,000 and resources of $813,086,000. The 557 state banks had deposits of $1,512,304,013, an increase of $146,508,872 over 1946, and assets of $1,596,633,023, an increase of $151,338,976.

In 1946–47 the state income from taxes totalled $107,667,298. The principal sources of revenue were the retail sales tax $36,772,165; gasoline tax $29,815,400 (compared with $19,622,625 in 1945); motor vehicle tax (for 1946) $12,865,066; personal income tax (one-half the levy only) $10,268,046; cigarette tax $3,586,442; inheritance tax $2,248,959; insurance tax $2,265,144 and profits from the state liquor stores $3,500,000. Expenditures for the biennium 1945–47 totalled $113,184,216. The appropriations for the year 1947–48 included approximately $20,000,000 for schools, $10,000,000 for hospitals and penal and correctional institutions and $12,000,000 for old-age assistance. By constitutional amendment all funds received from the gasoline tax and the motor vehicle registration fees is to be spent on the highways. In 1946–47 this amounted to more than $42,000,000. On Sept. 30, 1947, the state treasury reported a net expendable balance of $40,711,671.

**Agriculture.**—There were 206,155 farms in Iowa in 1947 (213,318 in 1940) with 34,703,088 ac., averaging 168.3 ac. per farm. The assessed valuation of farm land and buildings in 1946 was $1,680,898,530, estimated to be about 60% of actual value. For the first nine months of 1947 Iowa farmers received a cash income of $1,696,963,000. The total cash income for 1946 included $1,493,966,000 for livestock, $299,781,000 from crop sales and $46,539,000 from government payments. On Jan. 1, 1947, there were 10,689,000 hogs on Iowa farms, 5,189,000 cattle, 1,519,000 sheep, 412,000 horses and 15,000 mules. On Jan. 1, 1946, there were 22,748 auto trucks on Iowa farms, 177,431 tractors and 46,546 mechanical cornpickers.

Table I.—*Leading Agricultural Products of Iowa, 1947 and 1946*

| Crop | 1947 (est.) | 1946 |
|---|---|---|
| Corn, bu | 331,360,000 | 634,638,000 |
| Oats, bu. | 180,609,000 | 211,575,000 |
| Soybeans (grain), bu. | 26,310,000 | 35,604,000 |
| Wheat, bu. | 3,252,000 | 4,335,000 |
| Rye, bu. | 255,000 | 170,000 |
| Barley, bu. | 799,000 | 410,000 |
| Potatoes, bu. | 975,000 | 2,880,000 |
| Popcorn, lb. | 18,000,000 | 74,620,000 |
| Clover seed, bu. | 111,000 | 220,000 |

In 1946 Iowa farmers marketed 14,439,000 hogs for $684,938,000, 2,603,000 cattle and calves for $370,862,000, 3,037,000 turkeys for $20,788,000, 41,820,000 chickens for $56,206,000 and 328,330,000 dozen eggs for $108,678,000.

**Manufacturing.**—Iowa is not primarily a manufacturing state although the products of industrial establishments about equal the value of the agricultural products. In 1947 there were 3,835 manufacturing plants in Iowa employing about 148,000 workers. Payrolls aggregated $369,462,656, with an average annual wage of $2,491 ($1,262 in 1939). These plants turned out goods valued at $1,515,000,000. The number of retail stores in Iowa making sales tax returns for the first quarter of 1947 was 67,820.

Table II.—*Principal Mineral Products of Iowa, 1945 and 194*

| Mineral | 1945<br>Production | 1945<br>Value | 1944<br>Production | |
|---|---|---|---|---|
| Bituminous coal | 2,010,000 tons | $6,995,000 | 2,690,000 tons | $9 |
| Cement | 3,527,838 bbl. | 6,220,991 | 3,408,616 bbl. | 5 |
| Stone | 4,026,460 tons | 5,306,299 | 3,563,020 tons | 4 |
| Sand and gravel | 6,030,531 tons | 2,091,391 | 5,271,031 tons | 2 |
| Gypsum | 430,843 tons | 569,964 | 398,143 tons | |

**Mineral Production.**—Iowa ranked 29th among the states in t
value of minerals produced in the U.S. from 1911 to 1945.
(R. A.

**Iowa, State University of.** Located in Iowa Cit
this institution of
education in 1947 observed the centennial of its establis
It was created Feb. 25, 1847, and was the first state uni
to admit women on equal standing with men. Enrolment
fall of 1947 was more than 10,000 students, a record f
semester. Approximately 6,000 of the students were w
erans. Heavy enrolment before the first steps of the $10,
building program could be taken necessitated erection
merous barrack-type temporary buildings for classrooms,
tories, and offices. (For statistics of endowment, enr
faculty, library volumes, etc., *see* also UNIVERSITIES AN
LEGES.)

**Iowa State College.** This land-grant college was f
at Ames, Ia., in 1858. Enroln
the 1947 fall quarter set an all-time record. A veterans'
adjoining the campus provided temporary housing uni
1,200 families.

The Iowa State College Institute for Atomic Research,
lished in 1945, is recognized by the Atomic Energy com
as one of the seven major atomic research laboratories.
large buildings, representing an expenditure of $2,000,00
under construction for this program during 1947.

The college acquired 1,500 ac. of land near Des Moi
an expanded research program in livestock and poultry br
and feeding. Teaching, extension and research activities i
culture were co-ordinated under one head; similar admi
tive reorganization was completed in engineering. In Oct
the college celebrated the 75th anniversary of establishm
home economics. A building program, to cost between $1
000 and $12,000,000 was getting under way. (For statis
endowment, enrolment, faculty, library volumes, etc., *se*
VERSITIES AND COLLEGES.)

**Iran.** Known before March 1935 as Persia, an indep
kingdom of western Asia bounded on the east by
and Afghanistan, on the north by the U.S.S.R., on the w
Turkey and Iraq and on the south by the Persian gu
Arabian sea. Area: 634,413 sq.mi.; pop. (1946 est.): *c.* 1
000. Chief towns (pop. 1940 census): Tehran (cap. 540
Tabriz (213,542); Isfahan (204,598); Meshed (176
Shiraz (129,000). Language: mainly Persian, but some
and Armenian in the north, Kurd in the west, Arabic
south and Pashtu in the east. Religion: mainly Moham
(*Ithnā-ʻasharīya*), but *c.* 10% of the Mohammedans bel
the Sunni sect; there are also *c.* 50,000 Gregorian Arm
and a few thousand Catholic Armenians, 30,000 Nestoria
50,000 Jews. Ruler: Shah Mohammed Riza Pahlavi; prim
isters: Ahmad Ghavam-es-Saltaneh until Dec. 10, Ib
Hakimi (from Dec. 23).

**History.**—The year opened propitiously for Iran. The
ian army had entered the province of Azerbaijan, and the
government had made no moves, political or military, t
barrass the central government in Tehran or the army a
ties in Azerbaijan. Thus for the first time after Aug. 26,

hen British and soviet troops entered Iran, its full sovereignty d been re-established, and the whole country had once again me under the direct control of the central government.

Polling for the 15th session of the Majlis, which had been stponed several times, began on Jan. 11, 1947. Elections were ld in an orderly fashion, and out of 136 seats in the Majlis, e newly-founded "Democratic party of Iran," sponsored by hmad Ghavam-es-Saltaneh, and its adherents gained altogether seats, thus giving Ghavam a clear majority.

Because of general criticism, Ghavam reformed his cabinet June 22. The ministers of war, health, communications and ance retained their posts. A new ministry of national econ-ny was formed. When the new session of the Majlis con-ned, the government had to tender its resignation, and in the st week of Aug. 1947 Ghavam resigned the premiership; he as renominated by 78 votes out of 116. On Sept. 11 he formed s new cabinet, with himself as minister of interior, and on ct. 5 Ghavam submitted his cabinet to the Majlis and received vote of confidence of 93 votes for him and 12 against.

During September the soviet ambassador in Tehran delivered vo notes to the Iranian prime minister accusing the Iranian overnment of violating the agreement of April 4, 1946, and de-anding swift action in connection with the ratification of the l agreement. On Oct. 22, Ghavam submitted a lengthy report the Majlis giving the background of his negotiations with the viet government on the oil question. He emphasized that the 946 agreement was signed under heavy soviet pressure. A bill eclaring the oil agreement void was then submitted. It was ut to vote, and by 102 votes to 2 the Majlis resolved that (1) havam's oil negotiations and oil agreement with the soviet overnment should be null and void; (2) the government should ke measures to establish within five years the location and uantity of all oil resources, that negotiations might be started or its eventual sale to Russia; (3) it should be forbidden to rant any concessions for the extraction or refining of oil to oreigners or to create any oil company with the participation f foreigners; (4) in cases where the rights of the Iranian na-ion regarding the natural resources of the country were threat-ned, particularly in the case of the Anglo-Iranian Oil com-any, the government should take necessary measures and in-orm the Majlis.

Early in November, Ghavam officially informed I. V. Sadchi-ov, the soviet ambassador to Iran, of this decision. On Nov. 20 adchikov addressed to Ghavam a strongly worded note ac-using the Iranian government of having "treacherously violated ts undertakings" and charging it with responsibility for all the onsequences. The note created serious uneasiness in Tehran, ut one of its results was the weakening of Ghavam's personal osition. His own Democratic party, already not satisfied with is lip service to necessary social reforms, decided that also rom the point of view of foreign policy a change was necessary. n Dec. 10 Ghavam received a vote of nonconfidence in the ajlis and resigned. On Dec. 23 Ibrahim Hakimi, former prime inister, formed a new government.

At the end of May 1947 the shah for the first time in his eign toured Azerbaijan. His visit to the northwest province as the signal for celebrations, and was a symbol of the newly estored national unity.

**Education.**—(1938) 8,381 schools; 457,236 pupils; 13,078 teachers; ne university at Tehran.

**Banking and Finance.**—Revenue (ordinary est. 1944–45) 10,325,000,000 als; expenditure (ordinary est. 1944–45) 10,324,000,000; foreign loan nil); public debt (1944) 2,461,600,000 rials; notes in circulation April 1947) 6,640,000,000 rials; gold reserve (June 1946) 4,015,000,000 ials; commercial bank deposits (1947) 9,008,000,000 rials. Exchange ate (1946): 1 rial = 3.077 U.S. cents.

**Trade and Communication.**—Foreign trade (merchandise, 1946): im-orts 433,000,000 rials; exports 861,000,000 rials. Communication: oads fit for wheeled traffic (1938): *c.* 8,770 mi.; railways open to traffic (1945) *c.* 1,270 mi.

**Agriculture and Minerals.**—Production (in short tons): petroleum, crude (1946) 21,450,000; wheat (1941) 1,870,000; barley, 210,000; rice (est. 1937–38) 420,300; cotton (1943) 22,000; wool (1943) 13,200; beet sugar (1941–42) 26,400; tobacco (1940–41) 13,070.

**Iraq.** An Arab state of the middle east, between Iran, Syria and Saudi Arabia; an independent kingdom after 1932, when the British mandate was terminated. Area: 116,600 sq.mi.; pop. (est. Dec. 1946): 4,803,430. Chief towns (pop. est. 1946): Baghdad (cap., 832,927), Mosul (279,361), Basra (181,814). Language: Arabic; religion: mainly Moslem, but also Christian, Jewish and other communities. Ruler: King Feisal II; regent: Crown Prince Abdul-Ilah; premier: Seyyid Saleh Jabur (March 30, 1947).

**History.**—Elections were held in February, and Seyyid Saleh Jabur became Iraq's first Shia prime minister. His program announced that he would seek to amend the Anglo-Iraqi treaty of 1930. A ten-year treaty of friendship and alliance with Trans-Jordan, providing for joint military training, for measures of common defense and for economic co-operation, was ratified by the Iraqi parliament on May 4.

Iraq played a prominent part in the Palestine discussions of the United Nations during the autumn. On Sept. 22 the prime minister warned the British and U.S. embassies that, if the U.N. general assembly recommended the partition of Palestine, Iraq and the other Arab nations would give all assistance to the Palestine Arabs. After the U.N. decision on partition, the government, on Nov. 30, expressed great displeasure, called on its people to maintain order and assured them that it would carry out its responsibilities with regard to Palestine.

The withdrawal of all British land forces was completed on Oct. 26, leaving only a military mission and two R.A.F. air bases.

Progress was made with the Habbaniya flood-prevention scheme on the Euphrates. The Kirkuk-Mediterranean pipe lines were being doubled. (F. St.)

**Education.**—Nursery schools (1944–45) 56, scholars 7,891; elementary schools (1945–46) 944, scholars 97,453; intermediate schools (1945–46) 54, scholars 9,480; secondary schools (1945–46) 24, scholars 3,131; adult elementary schools (1944–45) 99, scholars 3,788; teachers' training colleges (1945–46) elementary (male) 4, students 969; (female) 2, students 269; higher (mixed) 1, students 347. Other colleges (1945–46) 14, students 2,750.

**Finance.**—Revenue, ordinary (1945–46) 19,675,699 Iraq dinars; expenditure, ordinary (1945–46) 23,608,552 dinars; gold reserve (Dec. 1946) 44,700,000; exchange rate (1947) 1 dinar=£1 sterling=402.7 U.S. cents.

**Trade and Communication.**—Foreign trade, 1945 (merchandise): imports (excluding British army stores) 18,465,768 dinars; exports (excluding crude petroleum) 9,817,868 dinars. Exports (1945) in short tons: grain, pulses and flour 281,420; dates 169,038; wool (raw) 3,026; hides and skins 6,041, intestines (casings) 1,659,295; live stock (number) 119,369; earth, stones and cement 41,974; ceramic products 71,041. Communications: roads (1940) *c.* 4,000 mi.; railways (1945) route open to traffic 965 mi.; passengers carried (1944–45) 4,869,523; goods carried (1944–45) 2,910,736 short tons. Vehicles registered (1945) cars 3,771; motorcycles 127; lorries 2,017; river craft (1945) steam and motor 168, net tonnage 10,872; shipping (1944–45) entered 1,341, net tonnage 5,719,040.

**Agriculture and Minerals.**—Production in short tons: crude petroleum (1946) 4,925,800; rice (1945) 279,900; tobacco (1944–45) leaf 7,322, crushed 4,409; wheat (1938–39) 860,000; barley (1938–39) 1,251,400; wool (1938) 9,100; cotton (1940–41) 3,960; cotton seed (1940–41) 9,350.

**Ireland:** *see* EIRE.

**Ireland, Northern.** Northern Ireland comprises the six counties of Antrim, Armagh, Down, Fermanagh, Londonderry and Tyrone; it forms part of the United Kingdom of Great Britain and Northern Ireland, but (from 1920) has its own parliament and executive (with limited powers for local purposes) although it is represented in the imperial parliament by 13 members. Area: 5,238 sq.mi.; pop. (March 1947) 1,335,000. Chief cities (pop. est. 1947): Belfast (cap. 448,600), Londonderry (49,000). Language: English;

religion: Roman Catholic 33.75%, Presbyterian 31.4%, Episcopalian 27% (approx.). Governor in 1947: the Earl Granville; prime minister: Sir Basil Brooke.

**History.**—The main items of the parliamentary session which opened on April 29 provided for a comprehensive health service, the establishment of a Tourist board and the consolidation of the law relating to the census of production. The Health Services bill received general approval, the cost of the new services being estimated at more than £5,500,000 annually. The Tourist Traffic bill was noncontentious but there was some objection to the Statistics of Trade bill, which the government regarded as essential to the maintenance of a high level of employment.

Throughout the year there was full employment in the shipyards: the tonnage launched in 1946 was 155,000, the largest after 1914. Launching ceremonies of historic interest were those of H.M.S. "Centaur," named by the Duchess of Kent; the Union Castle liner "Pretoria Castle," named by Mrs. Jan C. Smuts who spoke from her home in South Africa; and the Union Castle liner "Edinburgh Castle," named by Princess Margaret.

(D. J. O.)

**Education.**—(1946): Public elementary schools 1,649, scholars 186,664; secondary schools 76, scholars 21,021; technical schools 129, scholars 4,339; universities (1946–47) 1, students 2,400.

**Finance.**—(Estimate 1947–48) revenue £53,073,000; expenditure £32,838,000; public debt (March 1946) £2,995,300. Exchange rate (1947): £1 = 402.7 U.S. cents.

**Trade and Communications.**—External trade (1946): imports £125,000,000; exports £128,000,000. Value of linen and rayon exports (1946) £22,000,000. The United Kingdom exports of linen goods, linen threads and yarns in 1946 (included in the figure of £22,000,000) was £14,600,000; practically the whole of this came from Northern Ireland. Motor traffic roads 13,192 mi. Railways, broad gauge 619 mi., narrow gauge 52 mi. Canals and inland waterways, approximately 150 mi.

**Agriculture.**—Total area under crops and grass (June 1, 1947): 2,282,485 ac., including 842,000 ac. permanent grass, 344,000 ac. rotation grass, 381,000 ac. oats, 182,000 ac. potatoes and 17,500 ac. flax. Cattle 931,175; sheep 531,700; pigs 333,410; poultry 20,975,000. Agricultural shipments to Great Britain during 1946: fat cattle and sheep to the value of £5,357,034; poultry £1,701,852; eggs £4,718,844; seed potatoes £1,150,000 (141,000 short tons); ware potatoes £1,650,000 (246,000 short tons); fruit £1,326,000 (38,000 short tons); rye grass seed £1,028,000; milk 3,000,000 gal.

**Irish Free State:** *see* EIRE.

## Iron and Steel.

For convenience in coverage this subject is subdivided and handled under the three major headings—iron ore, pig iron and steel. Production data were available in 1947 from most of the important producing countries, but a few gaps will still be found in the tables, and some countries that should be included have been omitted for lack of data extending over several years.

**Iron Ore.**—Table I presents the available data on the output of iron ore in countries producing more than 1,000,000 short tons a year. The chief omissions from the table are Germany, the U.S.S.R. and Manchuria, while those of lesser importance include China and the Philippines, and one or two prewa ducers whose output declined to a low level during the war

Table I.—*World Production of Iron Ore, 1941–46*

(in thousands of short tons)

| | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|
| United States . . . . | 103,499 | 118,190 | 113,398 | 105,412 | 98,982 | 79,344 |
| Canada . . . . . . | 516 | 545 | 641 | 553 | 1,135 | 1,581 |
| Newfoundland. . . . | 1,084 | 1,336 | 608 | 520 | 1,103 | 1,393 |
| Brazil . . . . . . . | 832 | 708 | 356 | 862 | 789 | 1,102 |
| Chile. . . . . . . . | 1,877 | 450 | 330 | 744 | 1,042 | 1,491 |
| Austria . . . . . . . | 3,191 | 3,304 | 3,515 | 3,323 | 357 | 509 |
| Czechoslovakia . . . | 1,860 | 1,736 | 549 | 534 | ? | ? |
| France . . . . . . . | 11,652 | 14,063 | 18,606 | 10,332 | 8,779 | 17,873 |
| Great Britain . . . . | 21,251 | 22,294 | 20,713 | 17,328 | 15,819 | 13,670 |
| Italy . . . . . . . . | 1,477 | 1,168 | 553 | ? | 54 | 145 |
| Luxembourg. . . . . | 7,528 | 5,633 | 5,790 | 3,211 | 1,550 | 2,477 |
| Spain* . . . . . . . | 2,506 | 2,771 | 2,353 | 2,424 | 2,134 | 2,628 |
| Sweden . . . . . . | 11,605 | 10,725 | 11,927 | 7,995 | 4,332 | ? |
| India. . . . . . . . | 3,578 | 3,603 | 2,974 | 2,647 | 2,536 | ? |
| Japan . . . . . . . | 1,779 | 2,791 | 3,370 | 4,815 | 1,495 | 595 |
| Korea . . . . . . . | 1,864 | 2,511 | 2,600 | 3,734 | ? | ? |
| Algeria. . . . . . . | 362 | 368 | 202 | 864 | 1,326 | 1,842 |
| Australia . . . . . . | 2,585 | 2,590 | 2,682 | 2,443 | 1,750 | ? |
| Total. . . . . . . | 240,000 | 256,000 | 262,000 | 227,000 | 176,000 | 161,000 |

*Includes Spanish Morocco.

Production had declined sharply, not only from the wa of 1943, but from the prewar level.

*United States.*—The trend of the iron ore industry i United States in late years is shown in Table II.

Table II.—*Production of Iron Ore in the United States, 1941–46*

(In thousands of short tons)

| | 1941 | 1942 | 1943 | 1944 | 1945 |
|---|---|---|---|---|---|
| Crude ore | | | | | |
| Production . . . . . | 120,646 | 141,710 | 134,036 | 124,343 | 119,070 |
| Open-pit . . . . . | 88,971 | 104,042 | 97,272 | 92,281 | 88,407 |
| Underground . . . | 31,675 | 37,669 | 36,764 | 32,061 | 30,663 |
| Shipments. . . . . . | ? | 142,010 | 132,857 | 125,522 | 119,324 |
| Useable ore | | | | | |
| Production . . . . . | 103,498 | 118,189 | 113,398 | 105,412 | 98,982 |
| Shipments. . . . . . | 104,221 | 118,708 | 110,676 | 106,512 | 98,713 |
| Imports. . . . . . . | 2,625 | 819 | 447 | 519 | 1,337 |
| Exports. . . . . . . | 2,137 | 2,817 | 2,716 | 2,417 | 2,311 |
| Consumption. . . . . | 105,733* | 116,542* | 112,512 | 111,936 | 96,498 |

*Consumption for pig iron only.

There was a decline in iron ore production in the U States each year after 1942, the 1946 output being 20% than that of 1945, and 35% less than 1942. The larger dr 1946 was the result of the steel and coal strikes durin year. The short supply of domestic ore and the restorati activity in other countries led to greater imports, mostly Chile, Canada and Sweden.

Production improved in 1947, the total for the first 10 m of the year being 94,890,601 short tons, while shipment vanced to 96,000,381 tons.

Imports were stepped up even more than output, rea 4,007,797 tons through September.

*Canada.*—Production was expanding in 1947, but the bu the output is exported to the United States, which in turn plies most of the ore used in Canadian furnaces.

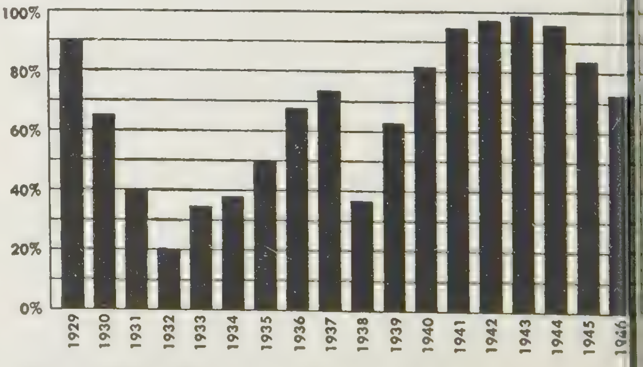
*Great Britain.*—Production during the first three-quarte 1947 was reported to be 9,040,000 short tons, a decline the 1946 rate.

**Pig Iron.**—The production of pig iron and ferroallo countries having an output in excess of 1,000,000 short t year is shown in Table III, along with the estimated world t

Before World War II the United States produced a littl than one-third of the total and Europe nearly 60%; afte war these proportions were about reversed, with half or in the United States and little more than a third in Europe

*United States.*—The salient data on pig iron and ferro in the United States are presented in Table IV.

In spite of the fact that the 1946 output was 16% less that of 1945 and 27% less than the 1944 peak, it was almost a third more than that of 1939, and would have appreciably more except for strikes. With no labour troub interfere, pig iron production picked up in 1947, with a through October of 48,471,731 short tons, foreshadowi



STEEL PRODUCTION in the United States, 1929-47; monthly averac centage of capacity (figures compiled by American Iron and Steel inst

ANT BLAST FURNACE, with a rated annual capacity of 500,000 tons of
n, shown nearing completion in April 1947 at the South Chicago works of
Carnegie-Illinois Steel corporation

ar's total not much short of the war peak of 61,000,000 tons 1944.

Canada.—Blast furnace production in Canada dropped from 964,936 short tons in 1945 to 1,520,753 tons in 1946, includ g 116,995 tons of ferroalloys and 1,403,758 tons of pig iron. 1947 the 1945 level of operations was restored with an out it of 1,630,149 tons of pig iron and 127,393 tons of ferro loys, a total of 1,757,542 tons in the first ten months of the ear.

*Great Britain.*—British production rose from 7,960,000 short ns in 1945 to 8,692,000 tons in 1946 and 6,976,000 tons in the st ten months of 1947—about even with the prewar level.

*Belgium.*—Blast furnace production rose from 803,000 short ns in 1945 to 2,393,000 tons in 1946, and 2,220,000 tons in e first 10 months of 1947, indicating a year's total approach g the prewar level of operations.

*Czechoslovakia.*—Output was expanding and the 1,059,000 ort tons produced in 1946 were approximately equal to the ewar rate, while 1,327,000 tons were produced in the first ten onths of 1947.

Table III.—*World Production of Pig Iron, 1941–46*

(In thousands of short tons)

| | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|
| stralia | 1,653 | 1,745 | 1,557 | 1,462 | 1,257 | 979 |
| gium | 1,567 | 1,399 | 1,797 | 792 | 803 | 2,393 |
| nada | 1,726 | 2,184 | 1,955 | 2,024 | 1,965 | 1,521 |
| ina | 2,161 | 5,228 | 2,059 | 2,339 | 544 | 1 |
| echoslovakia | 1,733 | 1,759 | 1,878 | 1,746 | 635 | 1,059 |
| nce | 1,700 | 1,788 | 2,407 | 1,242 | 1,321 | 3,860 |
| rmany | 17,012 | 17,021 | 17,606 | 14,738 | ? | 2,560 |
| eat Britain | 8,279 | 8,516 | 8,049 | 7,545 | 7,960 | 8,692 |
| ia | 2,251 | 2,049 | 1,959 | 1,602 | 1,562 | 1,485 |
| y | 1,223 | 980 | 710 | 255 | 67 | 189 |
| pan | 4,813 | 4,809 | 4,524 | 2,331 | 1,285 | 204 |
| embourg | 1,480 | 1,862 | 2,524 | 1,486 | 348 | 1,504 |
| .S.R. | 14,400 | 7,990 | ? | ? | ? | ? |
| ted States | 56,721 | 60,976 | 62,798 | 62,897 | 54,956 | 46,323 |
| Total | 121,000 | 123,000 | 122,000 | 110,000 | 100,000 | 90,000 |

*France.*—Blast furnace production expanded from 1,321,000 short tons in 1945 to 3,860,000 tons in 1946 and 4,629,000 tons in the first ten months of 1947, a rate approaching two-thirds of the prewar output.

Table IV.—*Data on Pig Iron and Ferroalloys in the U.S., 1942–46*

(In thousands of short tons)

| | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|
| *Pig Iron* | | | | | |
| Production | 59,078 | 60,765 | 61,004 | 53,224 | 44,842 |
| Shipments | 59,101 | 60,787 | 60,996 | 53,265 | 45,076 |
| Imports | — | 1 | 6 | 21 | 14 |
| Exports | 110 | 144 | 162 | 91 | 96 |
| Consumption | 59,043 | 60,315 | 60,952 | 53,187 | 45,072 |
| Castings | 7,230 | 6,517 | 6,818 | 6,567 | 6,611 |
| Open hearth | 45,539 | 47,108 | 48,281 | 41,683 | 34,608 |
| Bessemer | 6,131 | 6,258 | 5,583 | 4,751 | 3,723 |
| Electric | 93 | 394 | 240 | 163 | 113 |
| *Ferroalloys* | | | | | |
| Production | 1,898 | 2,033 | 1,894 | 1,732 | 1,481 |
| Shipments | 1,869 | 1,995 | 1,861 | 1,662 | 1,551 |
| Ferromanganese | 659 | 723 | 715 | 610 | 492 |
| Spiegeleisen | 186 | 150 | 155 | 158 | 112 |
| Ferrosilicon | 708 | 806 | 687 | 616 | 614 |
| Others | 316 | 316 | 304 | 278 | 333 |

*Luxembourg.*—After an almost complete collapse in 1945, production was stepped up to 1,504,000 short tons in 1946 and 1,651,000 tons in the first ten months of 1947. The Oct. 1947 output was at a rate in excess of 2,400,000 tons annually, or about one-third more than the prewar rate.

**Steel.**—Table V presents the steel output of countries having a production in excess of 1,000,000 tons a year.

In general, the postwar recovery among the European steel producers was somewhat behind that of pig iron. In Great Britain and some of the smaller countries the prewar level was approached or even exceeded, but the larger continental producers were still lagging.

*United States.*—The salient statistics of the steel industry in the United States are shown in Table VI.

The 1946 output was seriously curtailed by the steel and coal strikes. Although output in 1946 was considerably above the prewar output, it was still far short of current needs. The average rate of operations during the year was 72.5% and the highest month was 88.7% of capacity, while full capacity would still have failed to meet the demand.

The production rate was stepped up appreciably in 1947, with a total of 84,783,981 tons.

*Canada.*—The Canadian steel output declined from 2,881,323 short tons in 1945 to 2,334,631 tons in 1946, and was 2,945,166 tons in 1947.

Table V.—*World Production of Steel, 1941–46*

(In thousands of short tons)

| | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|
| Australia | 1,839 | 1,905 | 1,825 | 1,706 | 1,508 | 1,177 |
| Belgium | 1,785 | 1,526 | 1,839 | 701 | 807 | 2,513 |
| Canada | 2,712 | 3,110 | 3,004 | 3,016 | 2,881 | 2,335 |
| Czechoslovakia | 2,659 | 2,619 | 2,831 | 2,778 | 1,045 | 1,839 |
| France | 4,749 | 4,947 | 5,648 | 3,413 | 1,825 | 4,855 |
| Germany | 25,800 | 31,600 | 33,600 | 28,400 | 5,500 | 3,300 |
| Great Britain | 13,863 | 14,207 | 14,617 | 13,572 | 13,241 | 14,207 |
| India | 1,534 | 1,455 | 1,521 | 1,468 | 1,429 | 1,376 |
| Italy | 2,240 | 2,100 | 1,100 | 1,100 | 440 | 1,430 |
| Japan | 7,540 | 7,765 | 8,624 | 6,521 | 1,177 | 608 |
| Luxembourg | 1,155 | 1,720 | 2,368 | 1,389 | 291 | 1,429 |
| Poland | ? | 264 | 286 | 187 | 595 | 1,349 |
| Sweden | 1,283 | 1,354 | 1,338 | 1,320 | 1,323 | 1,336 |
| U.S.S.R. | 23,100 | 12,000 | 13,000 | 15,500 | 20,000 | 21,500 |
| United States | 82,839 | 86,032 | 88,836 | 89,642 | 79,702 | 66,603 |
| Total | 176,000 | 176,000 | 183,000 | 173,000 | 134,000 | 128,000 |

*Belgium.*—Production increased from 807,000 tons in 1945 to 2,513,000 tons in 1946 and 2,242,000 tons in the first three-quarters of 1947.

*Czechoslovakia.*—The monthly production rate increased by two-thirds during 1946, giving a year's total of 1,839,000 short tons, and continuing to 2,090,000 tons in the first ten months of 1947.

*France.*—The monthly output almost doubled in 1946, giving

Table VI.—*Steel Industry in the U.S., 1942–46*

(In thousands of short tons)

| | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|
| Capacity | 90,293 | 90,636 | 93,565 | 95,501 | 91,891 |
| Production | 86,030 | 88,836 | 89,642 | 79,702 | 66,603 |
| Basic open-hearth | 75,183 | 77,208 | 79,168 | 71,070 | 60,712 |
| Acid open-hearth | 1,319 | 1,414 | 1,196 | 870 | |
| Bessemer | 5,553 | 5,626 | 5,040 | 4,305 | 3,328 |
| Electric | 3,975 | 4,589 | 4,238 | 3,557 | 2,563 |
| Shipments | 60,465 | 59,906 | 60,353 | 57,242 | ? |

a year's total of 4,855,000 short tons, with continued improvement to 5,418,000 tons in the first ten months of 1947.

*Great Britain.*—British steel output rose from 13,241,000 short tons in 1945 to 14,207,000 tons in 1946, but dropped slightly to 11,357,000 tons in the first ten months of 1947.

*Germany.*—Steel production in Germany was still badly disorganized but was improving slowly. The 1946 output was 3,300,000 short tons, an amount that was almost equalled in the first three quarters of 1947.

*Luxembourg.*—With the monthly production rate almost doubling during 1946 the year's total was 1,429,000 short tons. In spite of a recession during the first quarter of 1947, production recovered to give a total of 1,531,000 short tons through October.

*Poland.*—The 1946 production of 1,349,000 short tons increased slightly to 1,263,000 tons in the first nine months of 1947.

*Sweden.*—Production dropped from 1,336,000 short tons in 1946 to 958,000 in the first nine months of 1947. (*See* also BUSINESS REVIEW; METALLURGY.) (G. A. Ro.)

**Iron and Steel Institute, American:** *see* SOCIETIES AND ASSOCIATIONS.

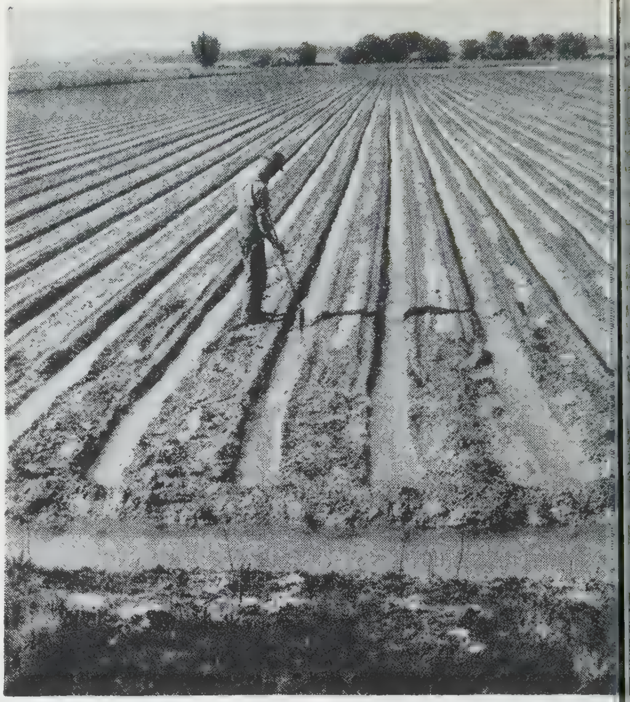
## Irrigation.

At the conclusion of the 1946–47 periodic U.S. snow surveys throughout the 17 western states, forecasts were made of a short snow crop throughout the high mountain areas of Arizona, California, Nevada and New Mexico. Severe irrigation water shortages thus appeared in prospect for hundreds of thousands of acres of irrigated lands in these states.

Generally ample water supplies for irrigation were forecast for the northern tier of western states; these forecasts were later verified by stream flow records. Stream flow for the 1947 irrigation season was considerably more than normal through Montana, Washington, western Canada, Wyoming and northern Idaho. Water supplies were about average in Colorado and northern Utah, but were less than normal in most of Oregon, southern Idaho and parts of Utah. Severe and damaging shortages developed in New Mexico, Arizona and parts of Nevada and California; but water stored in reservoirs was sufficient to offset the deficiency of natural stream flow.

At the end of 1947, snow fall covering the important watersheds of the west was greater than usual through Montana, Washington, western Canada and most of Idaho, Wyoming and Colorado. Mountain snow supplies were more than average in Utah and southern Colorado but less than average in Oregon and southern Idaho.

Plans and specifications were completed by the state of Montana for the Hysham pumping project to cost $220,000 and irrigate about 7,500 ac. of agricultural lands. A $330,000 project to irrigate 15,000 ac. was also contemplated for construction during 1948.



RECLAIMED FARMLAND on the Boise project near Nampa, Ida. A fa
shown irrigating a second crop of lettuce in Aug. 1947

The United States bureau of reclamation resumed a schedule of construction of its many irrigation projects during 1947. In the Missouri basin, Enders dam, third unit of an elaborate irrigation program, was placed under construction about 50 mi. northwest of McCook, Neb., on Frenchman creek, a tributary of the Republican river. It was to be an earth-fill structure 100 ft. high, creating a multipurpose reservoir for flood c
and irrigation with a total capacity of 83,000 ac.ft.—3
ac.ft. for flood control and 34,000 ac.ft. for irrigation; 1
ac.ft. was reserved for dead storage to provide for silt rete
The project was designed to supply irrigation water for 3
ac. already irrigated and supplemental water for an addi
17,000 ac.

Construction was also begun on the Tracy pumping pla
Alameda county, Calif., one of the major units of the C
Valley project and second largest pumping plant in the v
The contract cost of construction was estimated at $5,88
for this plant, which was designed to take surplus water
the Sacramento river and pump it into the 120-mi.-long I
Mendota canal. Completion of this feature of the Central
ley project would carry out one of the essentials of the pr
by supplying additional water to the water-deficient are
northern San Joaquin valley's west side farms to compe
for the San Joaquin river water stored in Friant reservoi
delivery to lands in Madera, Fresno, Tulare and Kern cou
on the east side of the valley. The pumping plant, design
lift 4,600 cu.ft. of water per second to a height of 200 ft.
exceeded only by the pumping plant of the Grand Coulee
project.

**India.**—India continued to lead the world in the extent
irrigated area, exceeding 70,000,000 ac. (reported to be
than the combined total of the next ten most irrigated cou
of the world). The total capacity of India's irrigation can
1947 was more than 4,000,000 cu.ft. per second or in exce
8,000,000 ac.ft. per day. Nevertheless, it was estimated in
that India was utilizing only 6% of the subcontinent's ava
water wealth.

The Thal project in the Punjab was formally opened in
1947. With a barrage consisting of 56 bays, each of 60 ft.
the spillway was designed to pass a maximum flood of 95
cu.ft. per second. Extra freeboard was provided to p
passage of a super flood of 1,000,000 cu.ft. per second. V
completed, the project would serve an area of 1,836,000 a

The proposed Bhakra dam (Punjab), a multipurpose pr
for irrigation and hydroelectric power development, was pla

be 480 ft. high and impound 3,500,000 ac.ft. of water, suffi- nt to provide a mean discharge of 6,600 cu.ft. per second for period of 270 days, approximately the extent of the dry ason. The project was estimated to serve an irrigated area of out 4,500,000 ac. Release of the water at the dam would nerate 160,000 kw.

Hajipur and Gudo barrages (Sind) were proposed for con- ruction across the Indus river. Canals from Hajipur barrage ere to be constructed for a capacity of 30,000 cu.ft. per sec- d, to irrigate 2,600,000 ac. The second barrage would pro- de water for the irrigation of 2,300,000 ac.

In the United Provinces it was proposed to impound 9,000,000 .ft. of water by the construction of the Rihand dam across e Rihand river near Pipri village. The dam would be 250 ft. gh and would release a perennial flow of 6,000 cu.ft. per sec- d to be utilized for irrigation in Bihar. Release of the water ould generate 150,000 kw. at the dam.

The Kosi dam project (Bihar), designed to provide for flood ntrol, irrigation and power, was to comprise mainly the fol- wing component units and connected features: (1) a dam pos- bly 750 ft. high, across the Chhatra gorge above the temple of hara Kashetra; (2) a power plant at the dam site capable of nerating 1,800,000 kw. of cheap power; (3) a barrage in epal across the Kosi with one canal taking off from either bank r irrigating about 1,000,000 ac. in Nepal territory; (4) a sec- d barrage near the Nepal-Bihar border with two canals on the ft bank and one on the right, for irrigating more than 2,000,- 0 ac.

**Iran.**—The government of Iran had under consideration a neral engineering and economic investigation, including irri- tion. The supreme planning board and the independent Irri- tion corporation of Iran listed about 30 priority projects, attered from Maghan steppe in the northwest to Iranian aluchistan in the southeast and from the Meshed area in the rtheast to Abadan Island in the Persian gulf in the southwest. leven separate projects were recommended for construction in e immediate future. Sufficient information had been collected four projects to warrant recommendations for immediate al decision and construction at an estimated total cost of 5,000,000. These four projects would furnish supplemental d new water supplies for about 500,000 ac. of excellent agri- ltural lands.

**Korea.**—The national government and the Korean Water tilization Association union had under construction and rang- g from 10% to 90% complete, a total of 26 national irriga- on projects, 9 tidal land projects and about 200 smaller provincial and community irrigation and tidal land projects.

The irrigation construction consisted of various dams, reservoirs, canals, diversion works, pumping plants, gates, dikes and levees.

All projects were in the area under U.S. administration.

(*See* also DAMS; METEOROLOGY; SOIL EROSION AND SOIL CONSERVATION.)

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## Islam.

The creation of the state of Pakistan (*q.v.*) was the greatest event for Islam not only of the year 1947, but since the abolition of the caliphate by Ataturk in 1922. The human, natural and economic resources of the new state caused it to rank as one of the most important and influential Moslem powers.

The decision of the United Nations general assembly at the end of November to partition Palestine (*q.v.*) was followed by a call for the declaration of holy war by el-Azhar university in Cairo.

An interesting development in the long struggle between Sunni and Shia was the appointment in Iraq of the first Shia prime minister ever to hold office there. Seyyid Idris Al-Senussi, the most important Islamic figure in North Africa, remained in Cairo throughout the year, as delay in settling the future of the former Italian colonies prevented his return to Cyrenaica.

International co-operation in Islamic studies, interrupted by war, was re-established; Professor Leo Mayer, of the Hebrew university, Jerusalem, lectured in London, Oxford and Copenhagen, and Fr. Gonzague Ryckmans, of Louvain, and Harry St. John Philby, British explorer in Arabia, both published constructive contributions to the history of Islamic origins. (F. ST.)

**Isle of Man:** *see* BRITISH EMPIRE.
**Isotopes:** *see* ATOMIC ENERGY.

## Italian Colonial Empire.

The ratification of the Italian peace treaty on Sept. 15, 1947, was something of a landmark for the former Italian colonies over which Italy on that day formally renounced its sovereignty. For a year from then they were to remain under British military administration, but if by Sept. 15, 1948, the United States, Great Britain, the U.S.S.R. and France should have failed to agree as to their future, the question would be brought up before the general assembly of the United Nations.

*Italian Colonial Empire**

| Country and Area square miles (approx.) | Population (est. Dec. 1947) | Capital, Status, Governors, Premiers, etc. | Principal Products,1947 (in short tons) | | Imports and Exports 1947 (in £) | Road, Rail and Shipping 1946 | | Revenue and Expenditure (Actual 1945-46) (in £) |
|---|---|---|---|---|---|---|---|---|
| AFRICA | | | | | | | | |
| lian provinces of LIBYA† 213,821 | 1,098,786 (including Libyan Sahara) | Tripoli; included (1939) in the national territory of Italy; under British military occupation | barley<br>wheat<br>other cereals<br>dates | 87,584<br>13,782<br>11,100<br>16,434 | imp. 2,360,395<br>exp. 3,197,236<br>Trade with Great Britain (Jan.-July 1947):<br>imp.: 183,564<br>exp.: 99,809 | rds.<br>ry.<br>shpg.: tonnage entered at Bengasi and Tripoli harbours: | 2,990 mi.<br>c. 150 mi.<br>284,607 | Rev.: 4,690,223<br>Exp.: 4,872,470 |
| YAN SAHARA 465,362 | (*see above*) | Homs; colony; under British military authority | | | | | | |
| ITREA‡ 86,166 | 1,062,499 (including 26,499 Italians) | Asmara; colony; under British military occupation | five cereals<br>beans | 116,163<br>6,068 | imp. 3,534,232<br>exp. 2,296,504 | rds.<br>ry. | 780 mi.<br>192 mi. | Rev.: 2,611,026<br>Exp.: 2,792,985 |
| MALILAND, ITAL-IAN‡ 270,972 | 923,800 (including 3,000 Italians) | Mogadiscio; colony; under British military occupation | maize (bags)<br>rice<br>sugar<br>alcohol (gal.) | 70,000<br>495<br>3,832<br>78,328 | imp. 983,041<br>exp. 441,955 | rds.<br>ry. | 5,540 mi.<br>nil | Rev.: 1,043,085<br>Exp.: 1,251,219 |

*The political units listed here were, in 1947, under British trusteeship pending ultimate decision by the United Nations assembly concerning disposal of the prewar Italian Colonial pire.

†Under British military administration Libya was divided in two provinces: Tripolitania (pop. 803,915) and Cyrenaica (pop. 294,871). There were 40,536 Italians in the former, but ly 77 in the latter.

‡The areas given here existed during the time of occupation of Ethiopia by Italy in which parts of Ethiopia were assigned to Eritrea and Italian Somaliland. *De facto* and 1938 areas : Eritrea, c. 46,000 sq.mi. and Italian Somaliland, c. 195,800 sq.mi.

This question of the Italian colonies seems, however, to have been the one problem about which the Four Powers found it—at least in the initial stages—relatively easy to agree, and during the year the prospect of Italy itself receiving the trusteeship over a portion of its prefascist empire increased very appreciably. While the Arab league would have liked to see Egyptian authority expand over Libya, and while Ethiopia was eager to acquire former Italian Somaliland and still more Eritrea, the French supported Italian trusteeship in Tripolitania in order to avoid any extension of Moslem influence along the frontiers of Tunisia. The Russians, who had originally made claims for themselves in Tripolitania, came around to the United States view, which also favoured Italian trusteeship there, and British objections melted away provided the British pledge to the Senussi with regard to no return of Italian authority in Cyrenaica was observed. This was the upshot of the Four Power conference on the former Italian colonies which opened in London on Oct. 3, 1947. The conference, further, appointed a commission of investigation (representing the Four Powers only) which left in November for a tour of Eritrea, Somaliland and Libya; after a preliminary dispute it was agreed to visit Libya last in order to have the latest information on the most complicated political situation. The commission was charged to collect all the necessary data, and in particular to ascertain the views of the local populations. It was to complete its reports not less than six and not more than seven months from the date of its departure from London; the other 19 signatories of the Italian peace treaty were to receive copies of the commission's reports. (*See* also PEACE TREATIES.) (E. WI.)

**Italian Literature.** Vigorous development characterized Italian literature in 1947 despite the disappearance of several independent politico-literary magazines (*Mercurio, Aretusa, Acropoli, Nuova Europa, Realtà Politica, Commento,* etc.), which were obliged to suspend publication because of lack of funds and mass following. Fiction, historiography, literary criticism and research all gave proof of astonishing vitality.

Italian novelists, particularly the young ones, had definitely turned their backs on surrealism and were beating along the path of realism. Some claimed to be writing proletarian novels, but they were in reality merely doing what their elders refused or felt little inclined to do—to live, observe and portray life in a world they knew. In this respect they took their cue from the renascent Italian motion pictures.

Among the writers harvesting rewarding fruits in this field were Vasco Pratolini, whose *Cronache di poveri amanti,* a stirring novel about Florence and its inhabitants in 1926, was animated by a profound tragic sense of life; Giuseppe Berto, whose first novel *Il cielo è rosso,* was a macabre yet poignant story of four homeless adolescents living in the ruins of a bomb-devastated city; and Carlo Coccioli who in *La difficile speranza,* told the story of a partisan, a family and a society yearning for a higher morality but crushed under the impact of historical events.

Other novelists, while drawing from reality, nevertheless either transferred that reality to a surrealistic plane or used it as a basis for psychological studies. Typical of the first group were *Il Sempione strizza l'occhio al Frejus,* Elio Vittorini's haunting story of unemployment, hunger and poverty in a family of workers; *Racconto d'autumno,* a contrast between old age and youth, with grotesque characters groping in a world of fable and reality; and Silvio Micheli's *Un figlio ella disse,* a swiftly-paced, cruel and nightmarish novel, not lacking in lyrical qualities. Among the writers of the second group were Natalia Guinzburg, who reflected the mistrust and suspicion pervading
the times in her portrait of a wife (*E' stato così*); and Al
Moravia, who turned out a distinguished fifth novel, *La ror*
about a Roman demimondaine.

Most of the well-known writers of established reput
published new works which added little to their stature.

The flow of literature on fascism and World War II
tinued unabated. An important work in this field was An
Gramsci's *Lettere dal carcere,* written by the intellectual l
of the Communist party to his family during the nine yea
his imprisonment which ended in his death in 1937.

The Italian campaign was described in *La guerra non*
*voluta io* by a U.S. judge, Michael A. Musmano, who
part in it.

Leo Valiani of the Action party, in *Tutte le strade condu*
*a Roma* and Luigi Longo, a Communist leader, in *Un p*
*alla macchia* gave eye-witness reports of partisan wa
while Gen. G. Messe in *La guerra al fronte russo* gave
first account of the fate of the Italian troops fighting ag
the Russians.

The few outstanding poetical works published during
included Salvatore Quasimodo's *Giorno per giorno,* Ra
Carrieri's *Lamento del gabelliere,* Franco Forlini's *Foglio d*
Giuseppe Ungaretti's *Il dolore,* Mario Luzi's *Quaderno g*
and Umberto Saba's *Mediterranee.* While these poets san
different keys of nostalgia, anguish and despair, Leonardo S
galli in *I nuovi campi elisei* celebrated in stern form the h
and marvels of his youth.

Among the most notable works in literary criticism were
two histories of Italian literature by E. Gennarini and b
Sapegno; Walter Binni's studies on Ariosto and Leopardi,
vanni Getto's on Dante, Giuseppe De Robertis' essays on
pardi and Luigi Russo's on *I promessi sposi.* (M. F. C

**Italian Possessions in Africa:** *see* ITALIAN COLONIAL
PIRE.

**Italy.** A republic of southern Europe, bounded on the n
west by France, on the north by Switzerland and
tria, on the northeast by Yugoslavia, on the east by the Ad
sea, on the southeast by the Ionian sea, and on the south
west by the Tyrrhenian sea and the Gulf of Genoa. The c
try also includes the large Mediterranean islands of Sicily
Sardinia as well as a number of smaller islands. Area: *c.*
733 sq.mi.; pop. (est. Dec. 31, 1946) 45,646,000. Chief t
(1936 census): Rome (cap. 1,562,580); Milan (921,5
Naples (739,349); Turin (608,211). Religion mainly Ro
Catholic. Provisional president: Enrico de Nicola; prime
ister: Alcide de Gasperi.

**History.**—The history of Italy during the year 1947 was d
inated by three themes: (1) intensifying economic difficu
helping to harden (2) the political deadlock between left
right; (3) the Italian peace treaty and the internationa
habilitation of Italy.

The end of the United Nations Relief and Rehabilitation
ministration hit Italy with particular severity. Among c
things U.N.R.R.A. imports had done much to check infla
but with their end not only was there less to eat and less to
upon in the factories, but also the alarming rise in prices
accentuated and, with this, the constant increase of mone
circulation. In March the enormous budgetary deficit coul
longer be ignored; in April, therefore, the government acc
to the demands from the right to halve the bread subsid
two-edged measure which increased the cost of living furt
while leftist demands for a better rationing system and th
striction of the luxurious living of the rich remained unsatis
There was a revival of confidence after the reconstruction o

vernment in May when, as minister of the budget, the disguished economist, Prof. Luigi Einaudi, inaugurated a deflanary policy with restrictions of credit. It was hoped that the nited States would share this feeling and provide dollar loans. did, in fact, reduce or convert a number of Italy's obligations onnected with the peace treaty and the Allied occupation) d offer financial help to certain major Italian industries, and ring the early summer industrial production rose to more an 70% of prewar figures. Meanwhile prices rose more and ore steeply. In March the cost of living was 42½ times that of 38, in September 65 times as great; a succession of strikes to sh up wages as well was inevitable. Even at the moment of eatest industrial production a formidable mass of unemployed d remained and this increased in the autumn. Thus, however flationary the government had hoped its policy would be—d in April and October it made efforts to force prices down—expenditure on public works was heavy and increasingly so. e bad harvest caused by drought and the freezing of a balance about £10,000,000 in Great Britain made matters worse. In ldition to the unemployed, the unskilled workers and profesonal classes were reduced to penury and ready to swell the nks of the political extremists.

As in the rest of Europe the cleavage between right and left ecame more marked during the year in Italy. In spite of an expected success on April 20 in the elections to the new tonomous diet of Sicily, the left lost ground, and the right, hich had recaptured control of the more influential newspapers, as able to expel the left from the government after the cabinet isis in May. The first stage in this process was in Jan. 1947, hen a group headed by Giuseppe Saragat seceded from the ocialist party in protest against its collaboration with the Comunists. This led to the resignation of the Socialist foreign inister Pietro Nenni and a cabinet breakdown in February. rom then until May an uneasy coalition—dominated by the hristian-Democrat party on the one hand and the Communists n the other, with Count Carlo Sforza at the foreign office and a w Socialist ministers in the background—struggled on, but once was realized that the budgetary deficit had exceeded L.600,00,000,000, the days of this cabinet were numbered. In May lcide de Gasperi, himself head of each successive government fter Nov. 1945, formed a cabinet composed almost entirely of is own Christian-Democrat party, the largest single group in e assembly. In the municipal elections in Rome on Oct. 12 e Christian-Democrats scored a striking success mainly at the xpense of the right-wing *Qualunquisti;* but although the Comunist-Socialist bloc suffered slight losses it was still stronger y one councillor than the Christian-Democrat, and the coninued existence of two evenly balanced groups on the city ouncil of Rome reproduced the seemingly inevitable deadlock f Italian political life. In the middle of November this deadock was disturbed by outbreaks of violence all over the counry; these usually took the form of Communist attacks upon the ffices of the right-wing political groups, especially those of the ost obviously fascist one among them which called itself the talian Social movement. On Dec. 14 De Gasperi formed a ew—his fifth—cabinet by including Republican and right-wing ocialist parties in the government's coalition. Randolfo Paciardi and Giuseppe Saragat, respective leaders of the two arties, became deputy prime ministers. The strengthening of e government found expression on Dec. 19 when the constitunt assembly passed a vote of confidence by 303 votes to 118, ith 14 abstentions.

Alongside economic cares and political complications Italy as kept very busy making itself a constitution. The constituon had been drafted during the last months of 1946 by a comission of 75 members of the constituent assembly. The draft (or *Progetto di Costituzione*) proposed to guarantee all the personal liberties rather vaguely "within the framework of the law." To satisfy leftists it declared in favour of the right to work, the right to strike and the right to "participate" in the management of factories; in May 1947 "participate" was altered to "collaborate," and there was a certain amount of controversy in the assembly at about that time over the definition of Italy as a "workers' republic."

But the attitude which the draft most evidently expressed was that of the Catholic Church, and this awoke the sleeping dog of Italian anticlericalism. It was an article announcing the incorporation in the new republican constitution of the Lateran pact made by Mussolini with the Vatican in 1929 that created the most critical issue of the year. This meant the imposition upon the community as a whole of the views of the church with regard to such basic matters as marriage and education, regardless of all the guarantees of individual liberty to disagree with these views. Most of the intellectual leaders of the country, including Benedetto Croce, considered this proposal as the surrender of their 19th century heritage, but on March 26 the assembly accepted the article by 350 to 149 votes; to everyone's amazement the Communists had voted in its favour in the interest, as they claimed, of the religious peace which the *Osservatore Romano* had declared to be at stake. A month later, however, the indissolubility of marriage was rejected although the Lateran pacts vetoed divorce. In addition to the compulsory religious instruction in all schools which the church required, the Christian-Democrats also pressed for state aid without state inspection for private, which nearly always meant Catholic, schools; they obtained only freedom from state control (April 29). At the same time the most revolutionary article perhaps of the whole draft was agreed upon, by which eight years' free, compulsory education was promised to every child; in the past the theoretical minimum had been six years which, however, rarely materialized.

The other major controversy in the constitutional debates raged round the subject of regional autonomy. Here again the Christian-Democrats were attacked on all sides with regard to the decentralizing articles of which they were the keenest supporters; the subject was debated most of June and July and the upshot was that the Christian-Democrats had their way. It was planned to introduce a new authority with legislative powers between the state on the one hand and the provinces and communes on the other, and the constitution, as amended, even

GRIEF-STRICKEN Italian women mourning their relatives at a mass funeral for ten persons killed in the 1947 May day massacre of agricultural workers and peasants near Palermo, Sicily

SUBWAY scheduled to pass beneath the ancient Colosseum in Rome, Italy, is shown under construction in 1947. Running underground as far as St. Paul's gate, the line was to connect Rome with existing lines to Ostia

slightly increased the powers of this new authority of the *regione*. In answer to the criticism that nothing but confusion would result from the possibility of legislation at three levels, it was voted that a commissioner should be sent to the capital town of each region to co-ordinate the activities of state and region. Of the 22 regions, Sicily, Sardinia, the Valle d'Aosta and the Alto Adige received even greater autonomy than the other 18. During the autumn the machinery for the election of both parliamentary chambers was set up. The most interesting innovation was the introduction of the use of the referendum to put an end to the deadlock which might be created if the two houses disagreed. The new constitution was finally approved on Dec. 22 by 453 votes to 62, with no abstentions. The constitution was promulgated by President De Nicola on Christmas eve.

The last week in July was devoted by the constituent assembly to the question of the ratification of the Italian peace treaty. Its terms were known during 1946 but the resentment they aroused in Italy was increased in the opening months of 1947 by the arrival of thousands of refugees from the territory to be ceded to Yugoslavia. In view of Italy's contribution to the Allied war effort after 1943 there was general bitterness over the reparations to be paid, as also over the loss of Trieste, a bitterness which was enhanced by the sensation of being a pawn in the game between east and west: on the right there was also great indignation over the loss of the fleet and the former Italian "empire," while on the left it was felt that it would have been more consistent with Allied principles if the treaty had been less arbitrarily imposed upon Italy. On July 31, after opposition from both the right and the left, the government carried the ratification of the treaty through the assembly by 262 votes to 68; the hostile voters were members of the parties on the right, while Communists and Socialists abstained. One of the arguments advanced against ratification was the equivocal attitude of the U.S.S.R., which, however, at last agreed to ratify the treaty on Aug. 29; it came into force on Sept. 15.

Contemporaneously the year was characterized by the scaling down of the Italian peace treaty by the western powers; the United States and Great Britain waived their right to confiscate the property of Italy's nationals; the United States and Great Britain waived most of their rights with regard to the Italian navy. Italy was invited along with the other powers to help pare Europe's response to the Marshall offer, and French Italian representatives worked together on a customs union ect. In fact by the end of the year the only serious obstac Italy's international rehabilitation was the soviet veto Italy's entry into the United Nations. (E. W

**Education.**—(1942) state elementary: teachers 12,960, scholars 4 329; parish schools: teachers 1,629, scholars 51,467; subsidized sch teachers 1,164, scholars 24,241. Secondary (classical, scientific and mal) schools: 1,274, teachers 24,873, scholars 346,095. Agricu schools: 887, teachers 5,612, scholars 42,983. Commercial schools: teachers 13,188, scholars 196,921. Industrial schools: 764, teachers 9 scholars 179,408. Nautical schools: 37, teachers 619, scholars 5,393 schools: 94, teachers 1,778, scholars 9,932. Nongovernment seco schools: 2,520, teachers 28,019, scholars 217,680. Universities: tota dents 145,793.

**Finance.**—(Est. 1947–48) revenue L.520,560,000,000; expen L.831,711,000,000; total public debt (Feb. 1947) L.1,303,000,000 bank deposits (1947) L.780,764,000,000; gold reserve (1947) L. 000,000,000; note circulation (June 1947) L.557,600,000,000. Curr lira; rate of exchange: U.S. $1 = L.350 (official rate) and L.59 ("free rate," October).

**Trade and Communication.**—Foreign trade (1946): imports L.84 000,000; (industrial raw materials L.40,710,000,000; food and L.27,290,000,000; semifinished products L.8,610,000,000; finished ucts L.7,600,000,000); exports L.54,530,000,000 (finished pro L.23,280,000,000; semifinished products L.15,020,000,000; indu raw materials L.4,300,000,000; food and cattle L.11,930,000,000) ports (Jan.–June 1947) L.82,364,376,000; exports (Jan.–June L.42,112,706,000. Railways open to traffic (March 1947): steam mi., electric 2,846 mi.; locomotives in service (1947): steam 4,065, tric 1,443; rail motor cars 907; coaches 5,182; luggage and mail 3,105; freight cars 116,212. Roads (1939) 110,712 mi.; load car road vehicles (1947): gasoline trucks 91,256; diesel trucks 27 methane, producer gas and other trucks 6,292. Radio receiving sets 31, 1945) 1,596,431; telephones 835,700.

**Agriculture.**—(1946–47, in short tons) wheat 6,749,750; rye 116 barley 254,500; corn 2,099,300; rice 523,400; potatoes 2,580,800; 498,100; tomatoes 928,900; fresh vegetables 3,879,000; sugar 275 cheese 186,200; butter 29,750; olive oil and seed oil 224,800. Exp produce (1946): fresh vegetables 30,660; citrus fruit 68,135; fresh 112,159; wine, etc., 14,837,280 U.S. gal. Livestock pop. (1946): 6,900,000; pigs 3,200,000; sheep and goats 8,692,000; horses 600 mules 210,000; asses 540,000; poultry 63,000,000; rabbits 40,000

**Industrial Products.**—In short tons: Sardinian coal (June 1946 1947) 866,467; other products (1946): steel 1,270,900; pig iron 716; wool 12,360; cotton goods 132,000; rayon 32,233; staple 14.740; waste 3,490; nylon 55. Exported products (10 months of in short tons): marble and alabaster 61,934; sulphur 11,583; esse oils and essences 78,388; paper 4,100; reeled silk 1,888; hats and (numbers) 4,020,334. Vehicles produced (1946) trucks 16,837; pass cars 11,038; buses 1,428; trailers 7,445. Total unemployed (April 1 2,169,400. (*See* also FASCISM; FOREIGN MINISTERS' CONFERENCES; IAN COLONIAL EMPIRE.)

**Ivory Coast:** *see* FRENCH OVERSEAS TERRITORIES.

**Jamaica.** The largest of the British West Indian Isla lying to the southward of the eastern extre of Cuba. The colony has two dependencies known, respecti as the Cayman Islands and the Turks and Caicos Islands. A Jamaica: 4,765 sq.mi.; Cayman Islands: 93 sq.mi.; Turks Caicos Islands: 202 sq.mi. Pop.: Jamaica (1946 census): 1,2 072, predominantly Negroes (77%) and mulattoes (18%), including about 13,500 Europeans, *c.* 42,000 East Indians *c.* 6,900 Chinese; Cayman Islands (1943 est.): 6,670; T and Caicos Islands (1943 est.): 6,138. Chief towns: King (cap. 201,911); Spanish Town (12,007); Montego Bay ( 500); May Pen (6,038); Port Antonio (5,482). The new stitution brought into effect in Nov. 1944 provided for a ernor (appointed by the British crown); a privy cou (charged with the general function of advising the governo all matters relating to the royal prerogative); an execu council, constituting the "principal instrument of policy in colony" and consisting of 10 members, of whom 2 are norm members of the legislative council and 5 are elected by house of representatives; a legislative council of 15, of wh 10 are nominated unofficials; and a house of representative 32 members elected on the basis of universal adult suffrage the 32 constituencies into which the colony is divided. Go nor: Sir John Huggins (appointed 1943).

**History.**—The outstanding event of the year 1947 occur

September when a conference met at Montego Bay to conler the question of closer association between the British West dian colonies. It was attended by representatives of the varis territories concerned. Arthur Creech Jones, the British cretary of state for the colonies, presided. It was agreed to commend to the legislatures of the participating colonies that intercolonial committee should be formed to work out a plan federation and that this committee should be invited to conude its deliberations by June 1949. Formal resolutions were ssed: (1) accepting the principle of federation; (2) advocating increased measure of responsible government in certain terriries; and (3) recommending, as an interim measure pending deration, the establishment of a British Caribbean Shipping mmittee on lines proposed in the report of a fact-finding eeting on shipping held in Barbados in July 1947. A group of nancial experts was appointed to consider and report upon the nancial implications of federation.

**Finance and Trade.**—The monetary unit in Jamaica is the pound sterling, ked with the pound in the United Kingdom. Revenue (1946) £7,951,-0; expenditure £7,781,000. Imports (1946) £12,523,000; exports ,328,000. The leading products of the colony are bananas and sugar. nanas constitute the largest single item of export. Other exported arties include sugar, rum, spices, coffee, timber and logwood extract.

(J. E. Sh.)

**apan.** An island nation in the western Pacific, under Allied military occupation following its defeat and surrener in 1945. In accordance with the terms of the Cairo and otsdam declarations of 1943 and 1945, Japan was stripped of s former overseas possessions and reduced to the four main lands of Honshu, Kyushu, Shikoku and Hokkaido (total area 46,690 sq.mi.), and minor adjacent islands. The population as officially estimated at 78,220,840 in July 1947, an increase approximately 5,800,000 over Nov. 1945. Net repatriation Japan contributed 4,451,000 of the increase, and natural owth the remainder. About 761,000 Japanese were reported ill held in soviet-controlled areas in October, but were being ipped home at the rate of 50,000 per month.

The chief cities of Japan, with populations according to the 40 census, are as follows: Tokyo (capital) (6,778,804); Osaka 3,252,340); Nagoya (1,328,084); Kyoto (1,089,726); Yokoama (968,091); Kobe (967,234). In 1945 there were 17,613,00 adherents of Shinto sects in Japan and in excess of 40,000,00 Buddhists. The Japanese sovereign is Hirohito. Prime inister (after May 25, 1947): Katayama Tetsu.

**Inter-Allied Policies.**—The basic objectives and control mainery of the Allied occupation of Japan remained unchanged 1947. Policy continued to be determined by the 11-power ar Eastern commission, sitting in Washington, D.C., and cared out by the supreme commander for the Allied Powers in okyo, Gen. Douglas MacArthur. The United States, as before, etained a preponderant control over occupation affairs and adanced most of the costs of occupation.

On June 19 the Far Eastern commission unanimously aproved a basic postsurrender policy for Japan, to remain effecve until a peace treaty should come in force. Designed to enure that Japan would not again menace the peace and security f the Pacific and to encourage a democratic and peaceful regime Japan, this statement of principles reaffirmed in its essentials e earlier U.S. declaration of Aug. 29, 1945. In 1947 the .E.C. also prescribed certain revisions in the Japanese educaonal system (March 27); forbade any Japanese activity in e field of atomic energy "for the time being" (Jan. 30); aproved principles to govern the rehabilitation of Japan's foreign ade (May 8); laid down standards for the reduction of apan's capacity in war industries which is in excess of "the eaceful needs of the Japanese people" (Aug. 14); and defined ose needs as being "substantially the standard of living preailing in Japan during the period 1930–1934" (Jan. 23).

Other F.E.C. decisions dealt with reparations, restitution and subsidiary issues. The commission followed its 1946 program of interim reparations removal of industrial equipment with further decisions establishing criteria for plant selection (May 22), and for the allocation of reparations shares (May 8) and removal costs (Feb. 13). No Allied agreement was reached on the total reparations bill, or on its percentage distribution among claimant countries. In April, however, the U.S. on its own responsibility directed Gen. MacArthur to proceed with an advanced allocation of 30% of the initially available equipment in the following proportions: China 15%; Philippines 5%; the United Kingdom (for Malaya and Burma) 5%; and the Netherlands (for the Indies) 5%. (*See* also Reparations.)

On July 11 the U.S. proposed a conference of the 11 powers represented on the Far Eastern commission to draft a peace treaty for Japan. It proposed further that voting should be by a two-thirds majority, and that when drafted the treaty be submitted to a general conference of all states at war with Japan. Nine countries agreed with the conference proposal and eight with the suggested voting procedure. The Soviet Union maintained, however, that the whole question should first be examined by the Big Four—China, the United Kingdom, the United States and Russia. China put forward a compromise suggestion for an 11-power meeting in which decisions would be by majority vote but would require the concurrence of each of the Big Four. No resolution of the impasse over voting procedure had been achieved by the end of the year.

The trial of Japan's war leaders on the charge of war crimes continued through 1947 in Tokyo. On Sept. 10 the International Military tribunal concluded the general defense phase of the proceedings and began individual defense cases. (*See* also War Crimes.)

**Political Trends in Japan.**—The year in Japan was marked by further implementation of political reforms under the new constitution. In April, elections were held for the diet, for 46 prefectural governors, 209 city mayors, more than 10,000 town chiefs and village headmen and numerous local and prefectural assemblies. The Social Democratic party emerged the victor by a slim margin in the diet, with 143 out of 466 seats in the house of representatives, and 46 out of 250 seats in the new, upper house of councillors. Close on its heels were the 2 conservative parties, the Liberals taking 131 seats and the Democrats 124 in the lower house. Other seats were distributed among minor par-

THE OTSUKA FAMILY, first Japanese tenant farmers to purchase the land they tilled, under the Allied council's land reform program. Ending an era of agrarian feudalism, the sale took place in July 1947 in the village of Seya

DANCE PANTOMIME interpreting "City of Peace" during a three-day celebration at Hiroshima, Japan, in Aug. 1947, commemorating the second anniversary of the first atomic bombing

ties and independents, including four Communists. At the prefectural and local level the Social Democrats were much weaker. Here the preponderant group elected to office were independents, most of them supported by the Liberal and Democratic parties.

Following the elections, on May 25, the prime ministership passed from Shigeru Yoshida, president of the Liberal party, to Katayama Tetsu, veteran Christian Socialist. Since his party enjoyed only a weak plurality in the diet, Katayama was compelled to form a coalition cabinet with the other major parties. Through the year conservative influences represented in the Democrats and Liberals remained dominant in Japanese politics. By August the Liberals had passed into open opposition, and on occasion joined with the Communists in denouncing the government. Their overtures for a single majority conservative party to rule Japan and negotiate the peace settlement were rejected, however, by the Democratic party. The latter continued along with the Social Democratic and Peoples' Co-operative parties to support the Katayama government against both radical and reactionary opposition.

With only a summer recess, the 93rd diet continued in session from May 20 until near the end of the year. In addition to the acute economic problems facing the country, it was occupied with a mass of legislation revising the political and economic structure of Japan in conformity with Allied directives and the new constitution. Among basic laws drafted for enactment were measures dealing with the reform of the civil service, a new criminal code, improved labour standards, the reorganization of the judiciary, local government and taxation, political parties, education and the decentralization of private control over finance and industry. The augmented powers of the national legislature and of local governments under the new constitution began to be evident in 1947. Initiative tended to remain with the bureaucracy, however, where traditionally it had been lodged. No strong political leadership emerged in the diet to weld contending factions into a dominant political force. A coalition of divergent interests, the Katayama cabinet had only limited freedom of action and lacked the power to deal decisively with the overriding issues of economic stabilization. A year ended it was under increasing pressure from both and left.

**Economic Reform and Recovery.**—Slow progress achieved in carrying out economic reforms initiated under A direction during the previous year. In March and July the ernment purchased 850,000 ac. of land at fixed prices from lords as a first step in the program to acquire 5,000,000 a 80% of all tenanted farm land, for resale to tenants. It commenced the resale of about 40,000,000,000 yen (book v of corporate securities which had been surrendered in pay of the anti-inflation capital levy or taken over under the gram for breaking up Japan's giant combines and liquid 157 other wartime institutions. The reorganization of Japa banking and industry to clear away the wreckage of war decentralize controls over economic life was still in its i phases. Meanwhile, in the field of labour, rapid strides made in raising legislative and administrative standards series of measures culminating in the organization of the ministry of labour on Sept. 1. Trade unions, now fully legal had a membership of 5,724,851 on July 31, and for the time were a potent force in Japanese politics.

As for economic recovery, two bright spots appeared i otherwise gloomy picture. Crops were good; and the year nessed progress toward the reactivation of foreign trade peacetime basis. Economic life continued to be demoral however, by shortages of food, fuel and raw materials, infl of the currency, ineffectual price control and rationing mea and uncertainties over reparations. Industrial productio April was only 30% of the 1935–37 level. Labour product was correspondingly low. The government opposed determ demands from workers for higher wages, meanwhile attem none too successfully to arrest the inflation and black-ma profiteering which gave rise to popular discontent.

Under these conditions, living standards continued far b the prewar level, especially in the cities. By June the u cost of living had soared to 60–70 times the 1937 index, factory wages were only 23 times the 1937 daily average. sumer goods shortages were universal; for example, the clo supply was scarcely 1 lb. per capita during 1947, as pared with 10 lb. in 1937. In housing the war left an accu lated deficit of 4,500,000 dwellings, and by July 1947, about 10% of the gap had been filled. Most serious was food shortage. Compared with 1941 food consumption mated at 2,105 cal. and 64.7 g. of protein daily per capita, sumption by urban workers in 1946 was 1,600 cal. and 60 protein. In the late spring of 1947 the actual ration in th large cities was only 1,100 cal. and 30 g. The average T family secured 20%–40% of its food from the black ma where prices were ten times the official price for staple it Farm families fared better; indeed, Japan's food problem sisted in good part in the difficulty of collecting and delive food to the cities. To remedy the 1947 deficiency, about 1, 000 tons of imported food had been released for distributio October.

The cumulative effects of wartime and postwar hards were recorded in the physical development of primary sc children, which in 1946 lagged one full year behind the standard of weight and height. Public health records, on other hand, were good in most respects. As a result of ener immunization campaigns conducted by Allied headquar communicable diseases were reduced to the lowest level in J nese history.

**Finance.**—Government finance continued through 1947 to reflect economic paralysis and financial disorganization left in the wake o war. At the root of inflation lay the national budgetary deficit, v again necessitated huge borrowings to meet expenditures. Expendi talled 192,200,000,000 yen in the fiscal year ending April 1947. Gen- al revenue came to only 115,600,000,000 yen, leaving 76,600,000,000 n, or 40%, to be financed by loans. Collections from the capital levy x reached 16,650,000,000 yen on April 30, 1947, and were expected total 40,000,000,000 yen by the end of the year. On Aug. 31 the na- onal debt had climbed to 304,630,000,000 yen, as compared with 220,- 00,000,000 yen a year previously. Outstanding domestic bonds amounted 200,715,000,000 yen, external loans 881,000,000 yen (at 1923 gold rity), and bank loans 93,304,000,000 yen. The general account budget r 1947–48 was set at 114,500,000,000 yen, with occupation costs fig- ed at 27,000,000,000 yen. Progress was expected in closing the infla- onary gap, but additional supplementary appropriations were anticipated large sums. The Bank of Japan's note issue continued to increase at the te of more than 200,000,000 yen per day in the first half of 1947, and Aug. 31 totalled 150,684,000,000 yen. Exchange rate, 1947: 50 yen $1 U.S.

**Trade and Communications.**—Imports into Japan were valued at $305,- 00,000 in 1946 and exports at $72,000,000. According to press reports, 947 imports were $420,000,000 to $440,000,000 and exports $425,- 00,000. Food accounted for $229,000,000 of imports, and textile fibres 91,000,000, both mainly from the U.S. Raw silk and cotton goods were he chief export items. The largest single transaction was the import of 05,353 bales of U.S. cotton from June 1946, through Sept. 1947, under n arrangement providing for the re-export of 60% of the fibre as manu- ctured exports. Cotton also began to arrive from India in Oct. 1947, n a contract calling for 170,000 bales.

In August important steps were taken toward the normalization of ade on a more diversified and expanded basis. Authorized foreign trad- s were allowed to re-enter Japan to re-establish private trade; foreign anks were permitted to resume normal trade services; and tele-communi- ations and mails were opened again to transactional messages. To assist financing trade, Allied headquarters also created an Export-Import evolving fund, utilizing as a credit base $137,000,000 of Japanese- wned gold and silver.

Government railways (length 32,000 km.) carried about 100,000,000 etric tons of freight and 3,000,000,000 passengers in 1946. Correspond- ng figures for Aug. 1947 were 9,272,000 tons and 304,552,341 passen- ers. At midyear the merchant marine comprised 763 vessels of more han 100 gross tons, totalling 1,330,000 tons and capable of transporting 00,000 tons monthly. Production and operation of aircraft by Japanese ationals was forbidden under the occupation. On Aug. 31 there were ,072,772 telephones in service, 657 land radio stations, 6,000,000 licensed adio receivers and 750,000 unlicensed sets.

**Agriculture.**—The 1946–47 harvest was as follows in metric tons: rice, ,977,000; wheat, 1,617,000; sweet potatoes, 5,512,000; silk cocoons spring, 1947), 26,500. Collections of summer crops in 1947, as of Oct. 0, were as follows in metric tons: rice and substitutes, 439,000 (brown ice equivalent); wheat and barleys, 799,000 (brown rice equivalent); weet potatoes, 188,000; white potatoes, 527,000. The food crisis in the ities, described above, was partly attributable to the decline of acreage nd yields. Tilled acres per farm family also dropped from 2.45 ac. in rewar years to 2.08 ac. as a result of demobilization, repatriation and ndustrial depression. About 640,000 ac. had been reclaimed for cultiva- ion from the end of the war to Aug. 1947, in a program to add 25% o the nation's cultivated area. Crop yields still suffered, however, from educed supplies of commercial fertilizer. These totalled only 1,434,851 ons in the year ending June 30, as against a 1936–40 average of 4,191,- 00 tons. Wartime and postwar shortages of feed had also reduced live- tock to the following figures: draft oxen and cows 1,830,000; milch cows 60,000; horses 1,070,000; pigs 90,000; poultry 20,400,000.

**Manufacturing and Mining.**—Japanese industries generally operated at a ow level in 1947, as already noted. One major handicap was inadequate oal production, which came to only 28,000,000 tons in 1947 as com- ared with an estimated minimum requirement of 36,000,000 tons. Crude il output was about 17,000 kilolitres monthly in the half year ending September. August output in other heavy industries was as follows in metric tons: pig iron, 33,467; steel ingot, 87,476; refined copper, 2,732; cement, 120,509; and caustic soda, 4,744. The textile industries were likewise handicapped by shortages of fuel and raw materials. Raw silk production in August was 8,725 bales; rayon, 1,684 tons; cotton yarn, 8,283 tons; and cotton cloth 56,257,000 sq.yd.—all far below prewar output. With the gradual revival of foreign trade, greater progress in industrial recovery was expected in 1948.

(*See* also NAVIES OF THE WORLD; OCCUPIED AREAS, ADMINISTRATION OF.)

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**Java:** *see* NETHERLANDS INDIES.

**Javelin Throw:** *see* TRACK AND FIELD SPORTS.

## Jet Propulsion.

The greatest gains in the new type reaction power plants were registered in the turbojet engine category during 1947. A wide variety of new fighters, multijet bombers and modified "mixed power" converted bombers were test-flown, powered by turbojets and in a few cases by turbopropjets, or propeller turbines. Several new companies in the U.S.A., Great Britain and other countries gained their initial experience with jet propulsion in the flight testing of their prototype aircraft. Behind the veil of military security, considerable progress could also be recorded in the nonturbine or duct-type reaction power plant—the ramjet, pulsejet and rocket. Successful experimental work for thrust augmentation by means of water/methanol injection, air bleed-off and afterburning technique was carried out. Component testing in several company laboratories, and research in jet fuels, high-temperature alloys and ceramics opened the way toward the solution of several problems.

**Turbojets.**—The most widely used U.S. turbojet engine in 1947 was the torpedo-shaped General Electric TG-180 (air force designation, J-35), with axial-flow compressor, delivering 4,000 lb. static thrust. During 1947 full responsibility for production and development passed to Allison division, General Motors, where more than 1,200 units were on order. The J-35 was the power plant of the North American XB-45 high-speed medium-range bomber (four units in twin nacelles) and the similar type Consolidated Vultee XB-46. The J-35 also powered the six-jet Martin XB-48, the eight-jet Northrop YB-49 Flying Wing and the six-jet, sweptback Boeing XB-47 Stratojet. The J-35 in August carried Marine Maj. Marion F. Carl to a world's high-speed record of 650.6 m.p.h. at Muroc lake in navy's Doug-

**EXHAUST END OF A RAMJET** issuing flame during a night test in 1947. Experimental work on the ramjet was being conducted at the laboratories of the Standard Oil Development Co. at Linden, N.J.

las 558 Skystreak trans-sonic-speed research aircraft. It also powered the North American FJ-1 carrier-based jet fighter, scheduled to go into production early in 1948.

Allison's redesigned version of the GE I-40 turbojet with centrifugal compressor (4,000 lb. thrust) was announced as its model 400 (air force J33-23), with 4,600 lb. static thrust, 20% more for take-off with water injection. This engine carried Lockheed's P-80R to an international speed record of 623 m.p.h. which held good for about two months. It was the power plant of the improved P-80B and was to be used in about half of the production Grumman F9F Panther carrier fighters.

The Westinghouse 19XB-2B version of the Yankee, with 1,600 lb. thrust, went into full production at Westinghouse and Pratt and Whitney for the McDonnell FD-1 Phantom twin-jet carrier fighter. The more powerful 24C (navy-U.S.A.F. designation, J-34) unit of 3,000 lb. thrust was test-flown in the faster McDonnell XF2H Banshee in May, and announced as the power plant of the Douglas 558-2 Skyrocket, along with Reaction Motors 6000C4 rocket engine. Four J-34's were announced as power plant of the Curtiss XP-87 "all-weather" long-range fighter. It was also reported as powering the McDonnell XP-85 and XP-88, Lockheed XP-90, Douglas XF3D-1 and McDonnell XF3H-1. An improved version of the TG-180 (J-35), designated TG-190, was bench-tested in 1947 by General Electric.

In Great Britain the Rolls-Royce Nene (5,000 lb. static thrust, 5,750 lb. with water injection) flew in a modified version of the D.H. Vampire, was publicly demonstrated at the Radlett air show in the Vickers Supermarine E. 10/44 Attacker, operated from a carrier deck in a British fleet air arm version of the 10/44, and was test-flown in the new Hawker N. 7/46 (Sea Fang) for the navy. An imported engine flew as power plant of the first prototype of the U.S. navy's Grumman F9F-2 Panther, and arrangements were being made at Pratt and Whitney to produce a U.S. version of the Nene during 1948 to power about 50% of the production Panthers. In Dec. 1947 the Armstrong-Whitworth AW 52 experimental tailless aircraft took to the air, powered by two Nene turbojets; the third model of the D.H. 108 tailless aircraft, with one Goblin III, also flew during the year. These were both forerunners of advanced high-speed, high-altitude commercial air liners. The power plant for one of these (D.H. 106) was the De Havilland Ghost (rating 5,000 lb. thrust, expected to develop more than 6,000 lb.) which was flight-tested as two of the power plants in the modified Ghost-Lancastrian. These were all radial-flow jet engines.

The only British axial-flow turbojet unit flight-tested up to the end of 1947 was the 3,500-lb. thrust Metropolitan-Vickers F 2/4 Beryl, two of which powered the Saunders-Roe SR/A1, the world's first jet-powered flying-boat fighter. A later version of the Beryl was rated at 3,750 lb. thrust. A much more powerful unit, the Rolls-Royce AJ-65 Avon, was first bench-tested in the spring of 1947 as that company's first axial-flow turbojet engine.

The Nene was going into production in France (by Hispano-Suiza) and in Australia for R.A.A.F. Nene-Vampires; the D.H. Goblin was being built in Sweden and Switzerland. Argentina imported some Derwent V's for a new jet fighter, and Canada some Goblins for R.C.A.F. Vampires. Sweden and Canada announced original turbojet engine developments, Canada's including the axial-flow Avro Chinook. The U.S.S.R. was reported to have made good headway with improvement of several German operational and development projects by Jumo, BMW and Heinkel, besides having imported some Rolls-Royce Derwents and Nenes.

**Turboprops.**—U.S. developments in the propeller-turbine field were mostly in the large high-powered units. These included the Flader XT-33, Wright XT-35, Northrop XT-37 Turbodyne and a big Allison unit—all in the 5,000–1 equivalent shaft horsepower class. The Wright XT-35 test-flown as the fifth power plant (in the nose) of a mod B-17, but no details were announced. The big unit had an put of about 5,000 h.p. but was capable of much higher dev ment; it was the world's most powerful propeller turbine to flown up to the end of 1947. The fourth model of the Nort XT-37 Turbodyne was reported to have a rating of 10,000 on bench tests. The Lockheed-Menasco L-4000 (XJ-37 5,000-lb. thrust unit, could be used as either a turboje turboprop. The Flader unit was dropped late in the year.

Flight testing of new airscrew/turbine units (turbopr made considerable headway in England during 1947. Thes cluded the Theseus-Lincoln (2 Bristol Theseus 2,400-h.p. u 2 Merlins). A second Avro Lincoln with four Theseus units scheduled for flight tests early in 1948. In October the Mar Lancaster (Armstrong-Siddeley 1,400-h.p. Mamba as 5th p plant, in nose) and Dart-Lancaster (Rolls-Royce 1,300-h.p. in nose, 4 Merlins) took to the air. The larger Armstrong-Si ley Python (4,500 h.p.) was also scheduled for flight test 1948, in a modified Lancaster bomber. The promising Na Naiad (1,590 h.p.) and Rolls-Royce Clyde (3,600 h.p.) were tensively bench-tested in 1947. Other British turboprops u development included the Power Jets 250 h.p. unit, De Havil H-3 and Bristol Janus (500 h.p.) and the big Bristol Pro (3,500 h.p.) for eventual use on the Brabazon I and Saund Roe SR/45 flying boat.

**Ramjets, Pulsejets and Rocket Engines.**—In tests off Virginia capes, speeds up to 1,500 m.p.h. were attained by 1 model ramjets. Five different designs were under test, u 20-in. diameter. Some were flight-tested in P-51 fighters ( tips) and underslung from P-61 Black Widows and B-29 he bombers. The main problems included flame blowout at su sonic speeds and a more efficient method of bringing an airc or missile up to the 400 m.p.h. required for initial compres in ramjets. The U.S. navy was especially active in pres fundamental research in the pulsejet engine, otherwise refe to as an intermittent ramjet or resonant (reso) jet. The effec valve life on current experimental pulsejet units was increa from the 45 min. on the V-1 buzz-bomb unit to about 7 Specific fuel consumption decreased from 4 lb. per hour pound of thrust to about 2.6 lb.

During 1947 several interesting developments took plac the rocket engine field (*see* also MUNITIONS OF WAR). J units were used commercially for assisted take-off of hea loaded cargo planes, and a set of them was built into the force's advanced six-jet bomber, the Boeing XB-47 Strato The Bell XS-1 with a Reaction Motors 6000C4 rocket eng flew at better than Mach 1.00 (speed of sound) at more t 35,000 ft. The Douglas 558-2 with J-34 turbojet and 600 rocket was unveiled and scheduled to be test-flown early in 1 Several advanced air force turbojet-cum-rocket fighters w reported as under development. Britain's Vickers-Armstro pilotless trans-sonic research aircraft was test-flown by be dropped from a Mosquito bomber. Big research rockets Boeing, Martin and North American aircraft were announc (*See* also AVIATION, MILITARY.) (N. F. S.

## Jewish Religious Life.

Outstanding in the story Judaism in the year 1947 v its continued struggle to re-establish itself in Europe after shattering blows of the preceding decade. The great centres Jewish life numerically and spiritually had shifted to the Uni States and Palestine, and the only marked movement of placed persons and other Jewish survivors of the Europe holocaust had been to the United States and to the internm amps of Cyprus en route to Palestine. Thus, during the year hundreds of rabbis and students sailed from Shanghai, where many had found refuge from eastern Europe, and other points to the U.S.

In the other direction, U.S. organizations such as the Joint Distribution committee helped make possible the observances of Jewish religious life in the D.P. camps of Europe. Books, religious supplies and millions of pounds of kosher meat and Passover supplies were shipped to the suffering Jewish remnants in Europe from Canada and the United States, and U.S. aid was given with outstanding generosity for rebuilding ruined synagogues and reopening religious schools in the old world. Talmudic academies (yeshiboth) were re-established, and the rabbinical colleges in such centres as Paris, Rome and Budapest reopened. Prayerbooks, copies of the Talmud and other Jewish books were increasingly made available for furthering Jewish cultural life in the war-devastated countries of continental Europe.

All this work was done against consummate difficulties. The surviving Jews in the communities of a country like Germany were in large measure elderly people, the children having been the first to be massacred. The adults who survived were often those who had been on the extreme borderline of Jewish life and who had escaped annihilation only because of marriage to a non-Jewish partner, or because their children had been brought up in the church. Moreover, everywhere there was a lack of rabbis. Thus, of the 46 rabbis deported by the Germans from France, not one survived to return.

The shortage of religious teachers was equally catastrophic. In Basle, Switzerland, new courses were established for training Jewish religious teachers for German-speaking lands, and in the United States steps were taken to make Jewish religious teaching as attractive as that of other academic professions. An important world conference on the basic problems of Jewish education was held in Palestine.

In general, in a country like Belgium or the United States there continued the marked tendency toward more intensive methods of Jewish education. The movement was away from the superficial Sunday school to the weekday school, and all-day Jewish schools sprang up in larger metropolitan centres.

From many parts of the world synagogues reported increased membership, expansion of their facilities for more cultural and social activities and increased interest in such matters as synagogue music. The reform synagogues in the United States organized a preaching mission which they called the American Jewish Cavalcade. On the other hand, synagogues everywhere were struggling with the basic problems of maintaining traditional Jewish religious observances and intensifying Jewish religious education.

The action of the United Nations in declaring for the establishment of a Jewish state in Palestine was welcomed by synagogues everywhere with enthusiasm tempered by a belief that the exclusion of Jerusalem from the Jewish state made this action spiritually incomplete and unsatisfying to Jewish religious tradition. (*See* also ANTI-SEMITISM.)

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(D. DE S. P.)

GEN. LUCIUS D. CLAY, U.S. military governor in Germany, addressing members of the Jewish community in Munich on May 20, 1947, as he rededicated the synagogue destroyed by nazi storm troopers a decade earlier

**Jewish Welfare Board, National.** The National Jewish Welfare Board (J.W.B.), organized in 1917, is the national association of Jewish community centres and Young Men's Hebrew associations and Young Women's Hebrew associations in the U.S. and Canada. It is also the officially recognized agency for serving the religious, welfare and morale needs of Jewish men and women in the armed forces and in veterans' hospitals. During 1947, a survey of J.W.B.'s programs, functions and operations, which was begun early in 1946 by Dr. Oscar I. Janowsky, professor of history of the College of the City of New York, was completed. It was carried out under the direction of a survey commission composed of 35 Jewish educators and communal leaders headed by Dr. Salo Baron of Columbia university. The commission submitted 21 recommendations to J.W.B., 20 of which were adopted at the 1947 annual meeting of J.W.B. in Pittsburgh.

The major recommendation called for the formulation of a statement of principles defining the unequivocal Jewish purpose of the Jewish centres. These principles, later adopted by J.W.B.'s Jewish Center Division committee, become a condition for continued complete affiliation of existing Jewish centres (within three years) and for new ones (at admission).

In 1947, the J.W.B. served its 309 affiliates (with 500,000 members) with programs for youth, adult Jewish education, centre fund-raising, surveys of community cultural resources, religious holiday program aids and similar services. The Jewish Music council and Jewish Book council, both sponsored by J.W.B., conducted nation-wide celebrations furthering interest in Jewish literature and music.

Program needs of the centre in Jewish culture were met, in part, by J.W.B.'s Lecture bureau which booked 1,045 programs during the year, the majority dealing with Jewish themes. Activation of the World Federation of Y.M.H.A.'s and Jewish centres (formed 1946) of which J.W.B. is a constituent, was begun through dispatch of a representative to South America to aid the centre program there. Sponsorship of a campaign for a Jerusalem Y.M.H.A.—a World Federation project—was accepted in principle by J.W.B.

Culminating five years of fact-finding concerning participation of Jews in World War II, J.W.B. completed and published a two-volume record *American Jews in World War II*.

Officers in 1947: Frank L. Weil was elected J.W.B. president for his 8th term; Mrs. Felix M. Warburg was honorary vice-president; Mrs. Alfred R. Bachrach, Lloyd W. Dinkelspiel, Irving Edison, Mrs. Samuel R. Glogower, Mrs. Walter E. Heller, Carl M. Loeb, Jr., Donald Oberdorfer, Dr. David de Sola Pool, vice-presidents; Joseph H. Cohen, treasurer; Robert K. Raisler, assistant-treasurer; Joseph Rosenzweig, secretary; Ralph K. Guinzburg, assistant-secretary. On October 1, Samuel

D. Gershovitz became executive director succeeding Louis Kraft, who became general secretary of the National council.

(F. L. W.)

## Jinnah, Mohammed Ali

(1876– ), Indian statesman and politician was born on Dec. 25 in Karachi. He studied law in England, and in 1906 he became an advocate of the Bombay high court. In 1910 Bombay Moslems elected him to the imperial legislative council. He joined the Moslem league in 1913 and was instrumental in getting Hindus and Moslems to hold joint sessions at the Lucknow conference in 1916.

LEADERS OF INDIA at Karachi, on Aug. 15, 1947, during the ceremonies ending British rule. Left to right: Fatima Jinnah, sister of the Moslem leader; Mohammed Ali Jinnah, governor general of the Dominion of Pakistan; Lord Mountbatten, governor general of the Dominion of India; and Lady Mountbatten

Jinnah's zealous advocacy of an independent India cooled considerably in the aftermath of World War I. His disagreement with Mohandas Gandhi over methods of obtaining the desired independence grew sharper, and he no longer was the leading Moslem proponent of concord with the Hindus. At the London round table parleys (1930–31), Jinnah, although not a delegate, demanded separate electorates for Hindu and Moslem communities as well as equality for Moslems in the sharing of offices in the central and provisional governments. In the succeeding years, Jinnah, who had become head of the Moslem league, unswervingly pursued a single goal: establishment of a wholly independent Moslem state; his efforts were crowned with success on Aug. 15, 1947, when he was made governor-general of the Moslem state of Pakistan. Later Jinnah lent his voice to those protesting the bloodshed caused by the outbreak of Hindu-Moslem warring after India achieved its independence, but to little avail, at least in 1947.

## Johns Hopkins University.

Johns Hopkins university is a privately endowed institution of higher learning located in Baltimore, Md. It sists of: three undergraduate schools (1) arts and scie (2) engineering (mechanical, civil, electrical, aeronautical, tary, industrial) and (3) business; McCoy college; the fa of philosophy (graduate); the school of medicine; the sc of hygiene and public health; and the Hopkins applied ph laboratory. For the year 1947–48, 2 new buildings, 27 faculty members and a new department of industrial engir ing were added. Of undergraduate students 61% were vete Undergraduates study under a group plan, while graduate dents study under the jurisdiction of department heads. T is no separate faculty for the graduate school, all faculty m bers teaching both graduate and undergraduate students. following degrees are offered: A.B., M.A., B.S., doctorate philosophy, hygiene, public health, engineering, history of m cine and education. President, Isaiah Bowman. (For statis of endowment, enrolment, faculty, library volumes, etc., UNIVERSITIES AND COLLEGES.)

(I. Bo

## Johnson, Herschel V.

(1894– ), U.S. governm official and diplomatist, was b May 3 in Atlanta, Ga. He was graduated from the Universit North Carolina in 1916, and served overseas with the A.I during World War I. After the war he studied at Harvard school and entered the U.S. foreign service. In 1941 John was named ambassador to Sweden by Pres. Franklin Roosevelt.

Recalled from Stockholm in 1946 to become deputy to ward R. Stettinius, Jr., then chief U.S. delegate on the U Security council, Johnson was appointed a regular delegate the U.N. general assembly in July 1947.

Johnson carried the burden of presenting U.S. policy bef the general assembly throughout 1947. During an acidulous bate with Andrei Gromyko on July 23, he admitted that held no brief for Greece, but said the latter at least was menace to world peace as were, he contended, Albania, Bulg and Yugoslavia.

Annoyed by the soviet use of the veto, Johnson presa formation of the "little assembly" plan on July 29, when he dicated to the general assembly that the U.S. would try to some way of defying Russia on the veto.

**Judaism:** *see* JEWISH RELIGIOUS LIFE.
**Jugoslavia:** *see* YUGOSLAVIA.
**Julius Rosenwald Fund:** *see* SOCIETIES AND ASSOCIATIC
**Jumping:** *see* TRACK AND FIELD SPORTS.
**Junior Colleges:** *see* UNIVERSITIES AND COLLEGES.
**Justice, U.S. Department of:** *see* GOVERNMENT DEPA MENTS AND BUREAUS.

## Jute.

The U.S. supply of jute, all imported, declined in year ending July 1, 1947, to a total of 35,000 to compared with 78,000 tons in the previous year, and an aver of about 80,000 tons during 1934–38. The cotton crop forme required about 70,000 tons of jute bagging but the sma crops of 1946 and 1947 reduced this need to about 40,000 to

(J. C. Ms.

## Juvenile Delinquency.

In 1947 approximately 92. children's cases were handled 220 courts in 17 states co-operating with the federal childre bureau. This juvenile court statistical reporting plan, in ope tion since 1927, remained the only reliable index of trends delinquency. In 1947 the total number of delinquency ca decreased 15%. Boys' cases still represented more than fo fifths.

Of all cases disposed of in these reporting juvenile courts 1,851) 73% were delinquency cases and 27% were depend-cy, neglect and other cases. On Jan. 1, 1946, the children's reau revived its plan of statistical reporting to include analysis all children's cases, in the belief that persons planning and lministering programs of service to children would find these ta valuable.

Numerous conferences on prevention and control of juvenile linquency were held in 1947. Philadelphia developed the Com-unity Neighborhood plan to elicit citizen participation in evention. The National Conference on Prevention and Con-ol of Juvenile Delinquency (Miss Eunice M. Kennedy, execu-ve secretary, Washington, D.C.) conducted meetings in New rsey, in Washington, D.C., and in Kansas City, Mo. The con-rence assembled literature and information for state-wide at-cks upon the problem.

Columbia university donated a research fund to the first *ear Book on Prevention of Delinquency,* scheduled for publi-tion in 1948.

The year 1947 showed the most constructive gains both in eatment and prevention of delinquency throughout the U.S. nce 1940.

(*See* also CHILD WELFARE; CRIME; FEDERAL BUREAU OF VESTIGATION.) (M. V. W.)

**ameroons:** *see* BRITISH WEST AFRICA; FRENCH OVERSEAS ERRITORIES; TRUSTEE TERRITORIES.

## ansas.

Located in the geographical centre of continental United States, Kansas was admitted to the union the 34th state on Jan. 29, 1861, and is referred to in popular sage as the "Sunflower state." Total area 82,276 sq.mi. of hich 82,113 sq.mi. are land; the population in 1947 was re-orted as 1,835,011, an increase of 50,558 or 2.8% from 1946 1940 census 1,801,028); 96.3% were white; 3.6% were Negro, e rest being all other races. Only 3% of the people were reign born; the population was about equally divided between rban and rural. Capital, Topeka, pop. 85,117, a gain over 946 of 5,963 (1940, 67,833). The two larger cities in 1947 ere Wichita, 160,370 (1940, 114,966), and Kansas City, 140,-50 (1940, 121,458).

**History.**—The principal state officials in 1947, elected in 1946 r two-year terms, were: Frank Carlson, governor; F. L. Haga-an, lieutenant governor; Frank J. Ryan, secretary of state; eorge Robb, auditor; R. T. Fadely, treasurer; E. F. Arn, at-orney general; L. W. Brooks, superintendent of public instruc-on. Since 1880 Kansas has been a "dry" state, but in the lection of 1948 the matter of repeal was to be submitted to vote of the people, with indications of a hard fight. Kansas w defines intoxicating liquor as containing more than 3.2% lcohol.

**Education.**—There were 3,166 one-teacher schools in the state during 947 with an enrolment of 35,387; a reduction by 4,230 schools in num-er of one-teacher schools during a 7-year period had been caused by onsolidations. The enrolment (1946) in elementary and secondary chools was 323,457, of which 88,824 were in high schools and 234,633 ere in elementary and secondary schools. A law requiring consolidation f school districts was declared unconstitutional by the state supreme ourt.

**Social Insurance and Assistance, Public Welfare and Related Programs.**—he populations of the various state institutions in 1947 were as follows: dustrial school for boys 119; industrial school for girls 79; hospitals r the insane 5,609; state hospital for epileptics 707; state hospital r tuberculars 419; state school for the blind 69; state school for the eaf 233; state orphans home 125; state school for imbeciles 1,317; ate penitentiary 1,003; state industrial farm for women 42; state in-ustrial reformatory 288.

**Communications.**—In 1944 the state had 9,373 mi. of rural highways nder state control; the steam railroad mileage was 8,448; the number f airports was 127, 38 of which were commercial and 45 municipal.

**Banking and Finance.**—The budget for the biennium 1947–49 totalled 37,213,993, representing an increase of $11,157,063 over the previous udget. Charitable institutions were to receive $8,134,965, compared ith $7,171,196; penal institutions $2,652,018 compared with $2,169,876; educational institutions $17,459,314 compared with $9,858,043. Approximately $28,808,022 was collected from sales tax (2%) in 1947, the highest of record and $6,861,170 more than during the previous year. The bonded indebtedness of the state as of Dec. 31, 1947, was $7,250,000. In 1947 the state collected in excess of $9,000,000 in income tax, the largest in history. As of Oct. 1, 1947, there were 174 national and 439 state banks, with deposits of $1,500,000,000.

**Agriculture.**—Receipts from marketings the first nine months of 1947 indicated a total cash farm income for the year of about $1,367,000,000 or about 50% larger than the previous year and the highest on record.

*Leading Agricultural Products of Kansas, 1947 and 1946*

| Crop | 1947 | 1946 |
|---|---|---|
| Wheat, bu. | 294,360,000 | 216,768,000 |
| Corn, bu. | 42,158,000 | 63,231,000 |
| Sorghum (grain), bu. | 10,860,000 | 11,448,000 |
| Oats, bu. | 40,860,000 | 40,556,000 |
| Soybeans, bu. | 1,760,000 | 2,178,000 |
| Hay, tons | 2,830,000 | 2,328,000 |
| Barley, bu. | 6,332,000 | 5,022,000 |

The year 1947 was the seventh consecutive year of favourable production in the southwest U.S. wheat belt, the Kansas crop comprising 27% of the total U.S. winter wheat production. Hay production exceeded the 10-yr. average and the oats crop was excellent, but the corn, sorghum and soybean yields were below average because of deficient moisture. The spring movement of cattle was about 8% smaller than in 1946—329,000 cattle and calves—but about 30% above 10-yr. average.

**Manufactures and Mineral Production.**—The mineral production of Kansas was valued at $210,187,000 in 1945, compared with $217,876,000 in 1944 and $220,413,000 in 1943. The state ranked ninth as a mineral-producing state. Its principal mineral products were petroleum, natural gas, zinc and coal. (F. CN.)

## Kentucky.

An east south central state of the United States, admitted to the union June 1, 1792, popularly known as the "Blue Grass state." Area, 40,395 sq.mi., of which 286 sq.mi. are water (chiefly the Ohio river). Population in 1940 was 2,845,627, of which 2,443,252 were white. Negroes constituted 209,721 or 7.5%, and 15,631 were foreign-born. The estimated population July 1, 1947, was 2,745,590. Capital, Frankfort (11,492); largest city, Louisville (319,077). Other cities: Covington (62,018); Lexington (49,304); Paducah (33,765); Owensboro (30,245); Ashland (29,537).

**History.**—In the quadrennial election Nov. 4, 1947, Earle C. Clements (Dem.) defeated Eldon S. Dummit (Rep.) for the governorship by 387,795 votes to 287,756. Other Democratic officers of the state were Lawrence W. Weatherby, lieutenant governor; George G. Hatcher, secretary of state; A. E. Funk, attorney general; Harry N. Jones, auditor; Edward F. Seiller, treasurer; Harry F. Walters, agriculture; Boswell B. Hodgkin, superintendent of education; Charles K. O'Connell, clerk of court of appeals.

EARLE C. CLEMENTS, elected governor of Kentucky, Nov. 4, 1947, on the Democratic ticket

**Education.**—Elementary schools in 1947 numbered 5,116, with 12,696 teachers and 415,296 pupils. In 576 public high schools there were 5,186 teachers and 116,500 pupils. The distribution of funds was $25.66 per capita.

**Social Insurance and Assistance, Public Welfare and Related Programs.**—The unemployment commission paid $400,000 monthly to about 40,000 civilians during 1947 and administered payments to 26,540 veterans in twice that sum. Old-age assistance was given to 47,285; aid to dependent children, to 9,150; and aid to needy blind, to 1,705. The population of the various correctional institutions was reported as follows: reformatory, 1,574; penitentiary, 835; women's prison, 52; house of reform for boys, 263; for girls, 53. At the close of 1947, 93 counties had voted dry.

**Communications.**—The highway department reported 10,252 mi. of highways under state control. Total receipts were $31,994,400, while expenditures were $26,613,600. The Milton-Madison bridge was freed of tolls Nov. 1.

**Banking and Finance.**—On June 30, 1947, there were 93 national banks with resources of $621,946,000; 295 state banks and trust companies with resources of $898,858,000. From its general fund Kentucky drew $24,948,813 for education; $10,823,307 for welfare work; $7,714,985 for expenses of government. Receipts in the same period came from these sources: $8,917,902 from property and inheritances; $19,087,493 from corporations and incomes; $12,678,022 from alcohol taxes and licences; $1,893,141 from other licences. The surplus of $25,000,000 on June 30, 1947, was reduced from a higher figure by the "escalator" clauses of the budget law. No state debt exists.

**Agriculture.**—The leading crops of 1947 appear as reported in the table.

*Leading Agricultural Products of Kentucky, 1947 and 1946*

| Crop | 1947 | 1946 |
|---|---|---|
| Wheat, bu. | 5,184,000 | 4,976,000 |
| Corn, bu. | 76,265,000 | 77,824,000 |
| Oats, bu. | 2,415,000 | 2,200,000 |
| Hay, all types, tons | 2,678,000 | 2,583,000 |
| Tobacco, all types, lb. | 416,167,000 | 505,885,000 |
| Potatoes, Irish, bu. | 3,366,000 | 3,996,000 |
| Soybeans, bu. | 1,908,000 | 1,566,000 |

**Mineral Products.**—During 1946 coal mines yielded 69,271,470 tons, and employed 57,576 miners with a loss of 113 lives. The output of petroleum was 10,924,283 bbl. Natural gas was estimated at 80,000,000,000 cu.ft. (E. T.)

**Kenya:** *see* British East Africa.

## Kidnapping.

Kidnappings in 1947 were featured chiefly by political motives, with alleged communist influences involved in several of the highly publicized cases. Notable in this category were numerous kidnappings in Austria. For example, several students were reported as kidnapped in Vienna in June by three men wearing U.S.S.R. military uniforms. In the following month Austrian Minister Oskar Helmer claimed that there had been 11 political kidnappings by Russian troops during the immediately preceding weeks and that the soviet occupation forces were prohibiting Austrian police from reporting such occurrences.

Palestine recorded an important case late in January when H. A. I. Collins, former British army major, was abducted by an armed group.

China also held its place as a centre for such crimes when the Rev. J. L. Devine, a former U.S. army chaplain was reported killed by Chinese Communists operating as a guerrilla force, following his kidnapping in September and an unsuccessful attempt to collect ransom.

In Buitenzorg, Java, Gov. R. Hardjadiparta was reported kidnapped during the coup d'état of May 23.

Kidnappings in the United States during 1947 showed no marked evidence of racketeering influences, even though Illinois, as a former centre of business kidnapping rings, was again prominent in the dispatches. The year had scarcely opened when the kidnapping of a woman in Dixon, Ill., was followed by the conviction and sentencing of Frank Sickles on charges of kidnapping her and several others. Two months later, an inmate of the Illinois Training School for Girls at Geneva killed a nurse employed at the school, and kidnapped the baby of another inmate. In May, William G. Fuller was sentenced for the 1945 abduction of three-year-old Mary Ann Kubon from a Chicago nursery school.

The populous states of New York and Pennsylvania also appeared in the kidnapping news, although some of the cases were of doubtful authenticity. In Lodi, Calif., Alice Dean Devine reported she escaped from kidnappers who allegedly demanded $10,000 ransom. From Hollywood came a report in October that Earl Carroll, night club owner and once widely known as a producer of musical comedies, had been held up on entering his Beverly Hills home at dawn and robbed of $400. The gunman then forced Carroll and his chauffeur into the producer's car, and after driving with them toward Hollywood ejected them from the car. Several hours after the crime was reported, police in distant San Bernardino arrested a suspect, aged in the Carroll car.

Perhaps the most shocking case of the year originate Kearney, N.J., where 11-year-old John Preston, Jr., was ported missing from his home on Sept. 14. Although a ran demand was made upon the boy's parents, and police br cast an eight-state teletype alarm, no police results were cured for several days. Then the father of 14-year-old Walter Smigelski presented his son before special agents of FBI, where admission of kidnapping and murder was fr made. The motive, said the boy, was to "prove he was a m and not a "sissy." Defense counsel sought to have young Sm ski tried before a court for juveniles, but he was held for ac of the grand jury, on Sept. 19, and indicted for murder Oct. 14. (*See* also Federal Bureau of Investigation.)

(Br. S

## King, William Lyon Mackenzie

(1874– ), C dian politician, born at Berlin (now Kitchener), Ont., Dec. 17. For a biograph account, see *Encyclopædia Britannica.*

King co-operated with the United States in measures for c mon defense of the two countries, and he participated in sev Churchill-Roosevelt conferences. In the general elections June 11, 1945, King's liberal party emerged victorious altho it failed by a slim margin to obtain a clear majority. King h self was defeated in his constituency in Prince Albert, Sa but was re-elected in a parliamentary by-election in Onta Aug. 6.

Several months after participating with Harry S. Truman Clement R. Attlee in the Washington, D.C., Atomic Energy ference in Nov. 1945, Mackenzie King asserted (Feb. 15, 19 that his government had unveiled a widespread espionage engineered by Russian agents, presumably seeking secret ato information.

In the early spring of 1947, the prime minister visited Pr dent Truman during the course of a vacation spent in the Un States; in June the president paid a return visit to Canada.

While touring western Europe in the fall, King stopped of London where he was received by King George VI and gi the Order of Merit (Nov. 17).

**Kiwanis International:** *see* Societies and Associati

## Kleffens, Eelco Nicolaas Van

(1894– ), Neth lands statesman, was b Nov. 17 in Heerenveen, the Netherlands. He was gradua with an LL.D. degree from Leyden university in 1918 and a member of the League of Nations secretariat, 1919–21. was appointed minister to Switzerland, and Netherlands rep sentative to the League of Nations (1939). Van Kleffens to England after the German invasion in May 1940, becom foreign minister for the Netherlands government-in-exile.

He attended the United Nations conference in San Franci in 1945, the U.N. sessions in London in early 1946 and following sessions in New York.

During the London meetings of the U.N. Security coun Van Kleffens and Andrei Vishinsky clashed over the latter's mand (Feb. 10, 1946) for an investigation of the Indonesian c pute. Van Kleffens replied that he would agree to an investi tion provided it were limited to the original charge of whetl or not Britain was threatening world security.

In 1946 Van Kleffens also represented the Netherlands on U.N.'s Atomic Energy commission and in 1947 he was nam (May 28) ambassador to the U.S. He asserted before Security council (July 31) that the Dutch attack on Indone was a "police action" and therefore beyond U.N. jurisdicti owever, the council rejected this contention as well as his later fforts to prevent the Indonesian delegation from getting a hearng on the ground that Indonesia was not a "sovereign state."

**nights of Columbus:** *see* SOCIETIES AND ASSOCIATIONS.

**orea.** A peninsula on the mainland of Asia directly west of Japan. On the north it is bounded by Manchuria, n the west by the Yellow sea, and on the east by the Sea f Japan. Area: 85,225 sq.mi., including 3,479 islands. Pop. Oct. 1, 1940) 24,326,327. As a result of the Potsdam agreeent of 1945, Korea is divided at the 38th parallel into U.S. nd soviet zones of occupation. Leading cities in U.S. zone ith estimated populations: Kyongsong (Seoul) 935,464; usan (Fusan) 249,734; Inch'on (Jinsen) 1,000,000. Leading ty in soviet zone: P'yongyang (Pyengyang or Heijo) 285,965. eligion: Buddhism, Confucianism and Taoism. In 1938 there ere 494,500 Korean Christians.

**History.**—A Peoples' Republic established on Sept. 6, 1945, y the Socialist and Communist parties was reorganized by he Russians into the Korean Peoples' Interim committee. ieut. General John R. Hodge, commander of the U.S. occupaon forces, denied recognition to the Peoples' Republic and ornized the Korean Advisory council consisting of 11 members, l of them from the Korean Democratic party led by Kim Koo nd Dr. Syngman Rhee. In Oct. 1946 Major General Archer . Lerch, U.S. military governor, established an interim legislave assembly consisting of 45 members elected by the people nd 45 appointed by the commanding general.

In 1946 and 1947 the joint commission established by the oscow conference failed to agree on which Korean parties nd social organizations should be consulted in the setting p of a government. The U.S.S.R. refused to consult with pares opposing the establishment of a trusteeship for Korea as rovided in the Moscow agreement. This difference appeared to ave been settled in May 1947 when Soviet Foreign Minister yacheslav Molotov agreed not to bar parties which had oposed the Moscow decision providing they now supported it. hen the joint commission resumed negotiations on May 20, 947, soviet representatives objected to parties which were embers of a "Committee Against Trusteeship" and to some ocial groups which they considered unrepresentative. The nited States representatives held that the soviet aimed to stablish a government controlled by a Communist minority. n Aug. 28 the U.S. proposed to the U.S.S.R. that the four owers adhering to the Moscow decision meet at Washington o consider the Korean question. When the U.S.S.R. rejected is proposal, the U.S. referred the question to the United Naons general assembly. On Sept. 27 the U.S.S.R. proposed the vacuation of soviet and U.S. occupation forces by Jan. 1948. he United States maintained that evacuation should follow the stablishment of a national government. In November the nited Nations assembly created a commission to hold Korean lections by the end of March 1948 and to aid in the establishent of a government.

**Education.**—Attendance in primary schools in May 1947 was 2,177,980 udents, in middle schools 158,325, and in universities and colleges 13,17. There were 3,208 primary schools and 384 middle schools in the .S. zone. Less than half of almost 5,000,000 children of ages 6 to 12 ere in school.

**Finance.**—Early in 1947 average family expenditures in Kyongsong were eported to have increased by 14,190% over 1937. Controls over sales of ommodities and a program of grain collection were instituted to prevent oarding and speculation. The official fixed rate of exchange was 15 yen r one U.S. dollar. In July the acting military governor approved a alanced budget not to exceed Y17,500,000,000.

**Trade and Communications.**—Foreign trade was largely on a governent-to-government basis. Japan was the chief source of parts and mahinery for industrial rehabilitation. The U.S. government gave Korea 91,000,000 under the civilian supply program. Included in the fooduffs sent to Korea were more than 395,836 metric tons of wheat, barley, flour and rice; 173,354,038 litres of petroleum products, and 106,423 metric tons of fertilizers. In June 1947 there were 617 locomotives of which 271 were operable, and 8,647 freight cars. Roughly the same amount was thought to be in the soviet zone.

KOREANS giving the communist salute as they greeted U.S. delegates of the joint U.S.-soviet commission arriving in the Russian occupation zone for a tour of inspection in July 1947

**Agriculture, Manufacturing, Mineral Production.**—Agriculture is the chief industry in Korea. The 1946 rice crop in South Korea was 1,849,535 metric tons, 18% below wartime production. Irrigation projects under construction were expected to add 101,320 ac. and an estimated 3,580,500 bu. of rice by 1948. The major spinning and weaving plants produced 8,740,400 lb. of cotton yarn and 21,700,040 yd. of cloth in 1946. Coal production totalled 208,476 tons in 1946. Korea has to import all bituminous coal. Shortage of coal was a major factor in delaying industrial recovery. In 1947 the military government in the U.S. zone was still engaged in the sale of former Japanese-owned property. Money proceeds were held by the national property custodian for delivery to the future government of Korea. (*See* also OCCUPIED AREAS, ADMINISTRATION OF.)

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(P. A. V.)

**Krug, Julius Albert** (1907–    ), U.S. engineer and government official, was born on Nov. 23 in Madison, Wis. He received an M.A. degree from the University of Wisconsin in 1930. Associated with several federal agencies as power engineer and consultant in the years between 1936 and 1941, Krug held an executive post with the War Production board in 1943. The following year, he joined the navy as lieutenant commander, but was back again with WPB as chairman in the fall of 1944. Krug resigned in Oct. 1945. He later returned to government employ at Pres. Harry S. Truman's behest (Feb. 26, 1946) to succeed Harold Ickes as secretary of the interior. In this post, he played an important role in the government's attempts to mediate the strikes of the coal miners in 1946.

The Centralia (Ill.) mine disaster (March 1947) in which 111 persons lost their lives led to sharp exchanges between Krug and John L. Lewis, with the latter attacking the secretary of the interior for alleged failure to enforce mine safety conditions; Lewis also requested that all but two mines be closed because of perilous working conditions. Krug rejected Lewis' demands, hinting (April 10) that the United Mine Workers chief was prompted by "motives other than a concern for safety."

Great significance was attached by administration supporters to a report made (Oct. 18) by a committee of specialists headed by Krug to the effect that "a considerable program of foreign aid" could be undertaken by the government without putting any undue strain on the country's natural resources.

**Kuwait:** *see* Arabia.

## Kyanite Minerals.

This group includes the closely associated minerals kyanite, andalusite, dumortierite and sillimanite.

**Kyanite.**—Production in the United States was 9,561 short tons in 1943, after which it increased, but was no longer reported. Imports dropped from 14,544 tons in 1945 to 10,782 tons in 1946, mostly from India. Consumption was estimated at 11,500 tons in 1946, down from 15,000 tons in 1945.

**Andalusite and Dumortierite.**—There was no U.S. production in 1946, as there were stocks to cover current demand.

**Sillimanite.**—The supply in 1946 was limited to 592 short tons imported from Australia, as there was no U.S. production. (G. A. Ro.)

**Labor, U.S. Department of:** *see* Government Departments and Bureaus.

**Labor Relations Board, National:** *see* National Labor Relations Board.

**Labour:** *see* Agriculture; American Federation of Labor; Child Welfare; Congress of Industrial Organizations; Employment; Federal Mediation and Conciliation Service; International Labour Organization; Labour Unions; Law; Motion Pictures; Municipal Government; National Labor Relations Board; National Mediation Board; Negroes, American; Radio; Relief; Shipbuilding; Strikes and Lock-outs; Supreme Court of the United States; United States; Wages and Hours. *See* also under various states.

**Labour Party, Great Britain:** *see* Political Parties, British.

## Labour Unions.

**United States.**—Developments in organized labour during 1947 were dominated in the United States by new federal legislation and by the continuing postwar boom in business. At its first session the new Republican congress devoted itself to overhauling the nation's labour policy and labour law. On June 23, the senate passed the Taft-Hartley act over the president's veto.

Adoption of this statute marked the first major revision in New Deal labour policies of the 1930s and in the Norris-LaGuardia and Wagner acts. The authors of the new policy had in mind a variety of purposes, but taken together they amounted to curbing the power of organized labour. The act consequently was an "omnibus" measure, containing not only revisions of existing statutes but also many novel features.

Revision of the Wagner act was made in two directions. One set of provisions had as their purpose limiting the authority of the law's administrative agency, the National Labor Relations board. Accordingly, the judicial and prosecuting functions were assigned to separate and independent agencies—the board, with its membership increased from 3 to 5, retaining its judicial functions and a new officer, the general counsel appointed by the president, charged with the duties of prosecution. To limit the authority of these administrative agents further, their findings were made subject to broader review by the federal courts, and the standards of evidence on which they were permitted to act were raised.

The Wagner act was further amended and enlarged in order to impose on unions standards of conduct similar to those required in the original law of employers. Hence the Taft-Hartley act enumerated unfair labour practices of unions, outlawed the closed shop, strengthened the employer's right of free speech, redefined the authority of unions over their members, removed foremen's unions from protection of the law and required all unions to file with the department of labour their constitutions and financial and membership statements.

MOCK STALIN FIGURE, impersonated by a member of the United Auto ers union employed at the Ford Motor Co. in Dearborn, Mich. Campai prior to the election of officers in March 1947, he charged communist c of leadership within his local

In addition to these features, the law removed the con tion service from the department of labour and set up an pendent agency to perform the same functions. There also elaborate regulations of the calling and waging of strike

By the end of 1947, there had been little experience wit operations of the Taft-Hartley act and there had yet bee court decisions interpreting the meaning of the law and powers of the administrators.

The business boom of 1947, on the other hand, added t strength of organized labour. Full employment and rising p and profits fortified the bargaining position of unions. They cessfully negotiated a second round of postwar wage incre amounting to roughly 15 cents an hour, and won many valu concessions in working conditions. By the end of the year had regained their early postwar losses in membership probably added some 500,000 new members. All these adva were made under much more peaceful conditions than had vailed in 1946. Time lost through strikes declined from 000,000 to 35,000,000 man-days. Both employers and u were unwilling to repeat in 1947 the losses they had suffere 1946. The unions, also, were apprehensive that a repetitio the labour troubles of 1946 would expose them to still drastic regulation by congress.

The passage of the Taft-Hartley act and the changes in tional labour policies implicit in this statute aroused all un to renewed political activity. Even the independent rail unions, though they were not subject to the act but conti to operate under the terms of the Railway Labor act, joined A.F. of L. and the C.I.O. in uncompromising opposition to new law. All branches of the labour movement were busy ganizing new political agencies or reviving old ones to us the national elections of 1948. Organized labour was unanin in its intention to defeat the congressional supporters of Taft-Hartley act and to erase that law from the statute bo

Political unity was not translated into union unity, howe The C.I.O. proposed that the A.F. of L. join with them in bilizing the political strength of organized labour, but the of L. opposed any joint action short of a complete merge the two organizations. This solution of the problem of disu the C.I.O. refused to accept. Forces of dissension within our movement thrived in 1947 as in previous years. John L. wis took the United Mine Workers out of the A.F. of L., with hich they had become only recently reaffiliated, because he s unwilling to sign the anticommunist affidavit required by e Taft-Hartley act. In the C.I.O., the fight against communist ctions broke out, notably in the large unions of automobile, ectrical and radio, and mine, mill and smelter workers. There s some shifting of affiliations, the most important of which s the shift of several locals from the independent telephone orkers to the C.I.O.

The struggle against the communist influence in unions in ternational labour organizations had swift repercussions in the ited States. The new international labour policy of the S.S.R., by which unions became instruments of Russian forgn policy, caused a cleavage in the World Federation of Trade nions. Since the C.I.O. was one of the founders of the W.F.T.U., is development proved highly embarrassing and it sent an issary to Paris to present to the W.F.T.U. the case for the arshall plan. The A.F. of L. was strengthened by these events nce it had been, from the beginning, an implacable foe of the .F.T.U. and had consistently opposed any traffic with comunist unions. (*See* also AMERICAN FEDERATION OF LABOR; USINESS REVIEW; CONGRESS OF INDUSTRIAL ORGANIZATIONS; AW; NATIONAL LABOR RELATIONS BOARD; STRIKES AND LOCKUTS.) (L. Wo.)

**Great Britain.**—The Trades Union congress held at Southort in Sept. 1947 represented 7,540,000 workers, as compared ith 6,671,000 in 1946, whereas the number of unions repreented fell as a result of amalgamations from 192 to 187. The ost important merger was that of the National Union of Disibutive and Allied Workers (275,000) with the Shop Assistnts' Union (101,000) to form the National Union of Shop, istributive and Allied Workers. This fusion brought together to one body the well-organized co-operative employees and e much less well-organized workers in private shops and wareouses.

Considerable progress was made in collective bargaining in he distributive trades, in which there had been also an extenion of statutory minimum wage regulation under the Wages ouncils act. The increase of trade union membership was well pread over the majority of industries, the largest increases beng in transport, building, and the engineering trades. The rise n total membership was, of course, largely the result of deobilization from the armed forces, which had increased the umber of male workers in industry, whereas the number of omen workers had fallen with the return of many married omen to family life.

There were no startling developments in trade union policy uring 1947. The most important development was a renewal f the pressure for the maintenance of joint production comittees, which in many cases had been allowed to lapse after Vorld War II, but were being reinstated in order to help in the roduction drive for higher exports. The government urged the evelopment of joint production committees, but refused to pply compulsion, on the ground that the matter could be better ettled by joint agreements in particular industries.

In face of the balance of payments crisis, the trade unions greed to a limited measure of direction of labour, designed to ecure a better distribution of manpower. Such direction was pplied only in exceptional cases, where a worker was unemloyed or desired a change of job; but it was recognized that ore drastic measures might be needed if the action taken to queeze out redundant workers by rationing raw materials and uel to the less essential industries failed to achieve the required ffect. The trade unions watched the situation with some anxity, as they knew that "direction" would be very unpopular and wished to confine it within the narrowest limits that were found to be compatible with the national necessities.

Throughout the crisis, arising first in connection with the bad weather and fuel shortage difficulties in the early months of 1947 and later in connection with the exhaustion of the U.S. loan, there was close consultation between the Trades Union congress and the government. In the matter of wages the unions did their best to avoid exerting any pressure likely to have an inflationary effect, and wage-advances were kept within narrow limits (*see* WAGES AND HOURS) in order to avoid embarrassing the government.

The Trades Union congress of Sept. 1947 passed a resolution urging the need for an over-all production plan setting definite targets for the various industries; and the government responded with the Cripps plan of Sept. 1947. The congress also urged more effective control over prices and measures for the public investigation of costs and profits, including the costs of distribution. Proposals were also put forward for amending the Factories act in order to bring it into line with postwar developments in factory methods and organization. Florence Hancock, of the Transport and General Workers' union, was elected president for 1947–48.

The trade unions continued to collaborate with many government committees, including the working parties which made recommendations for the reorganization of a number of manufacturing industries. There were a number of changes in trade union leadership and in the composition of the Trades Union congress general council, because of the appointment of several trade union leaders to serve as members of the boards of newly socialized industries (mines, transport, electricity) or in other government posts. The civil service unions fully resumed their position in the Trades Union congress, which they were able to rejoin after repeal, in 1947, of the Trade Unions act of 1927.

The number of unofficial strikes was smaller than in 1946, and the agitation against the closed shop died down as it became apparent that the trade unions had no intention of pressing for it in any large number of instances. Total trade disputes were at much the same level as in 1946, involving up to August a loss of 1,610,000 working days, as against 1,498,000 in the corresponding period of the previous year. Coal mining accounted for 428,000 of these lost days, as against 326,000 in 1946. Disputes were most extensive among transport workers, who lost 558,000 days in Jan.–Aug. 1947, as against 67,000 in the first 8 months of 1946. All these totals, however, were very low. In general, disputes were small and of short duration.

The British Trades Union congress maintained its connection with the World Federation of Trade Unions (*q.v.*). Certain demarcation questions arose in connection with the organization of workers in the newly nationalized services, especially in respect to clerical and administrative staffs; but these seemed to be well on the way to amicable settlement. The Trades Union congress further expanded its educational work, especially in the training of trade union officials and the provision of short courses and summer schools for trade unionists. It maintained its representation on the National Council of Labour (with the Labour party and the Co-operative union), and sent a number of missions to help with trade union organization in colonial and other areas. (G. D. H. C.)

**Labrador:** *see* NEWFOUNDLAND AND LABRADOR.
**Labuan:** *see* NORTH BORNEO.

**Lacrosse.** This game, conceived by the American Indian, was expected to take on world importance as a major sport in 1948. It was expected that the sport would be included on the world Olympic program in London in the summer.

The lacrosse season in the U.S. in 1947 prospered as never before with 32 institutions participating, a record number. In both the 1928 and 1932 Olympic games, lacrosse was demonstrated but not a part of the schedule.

National U.S. champions were Mt. Washington club of Baltimore, Md., in the Open; Johns Hopkins, of Md., in the intercollegiate. The women's national tournament was won by the No. 1 Westchester, N.Y., team which defeated the Philadelphia, Pa., first team. The Philadelphians were defending. The North team defeated the South, 15 to 3. (T. J. D.)

**Lamb:** *see* MEAT.
**Laos:** *see* FRENCH OVERSEAS TERRITORIES.

**Lard.** Production of lard in the United States rose in 1947 as the number of hogs slaughtered increased. Total output of lard was estimated at about 2,300,000,000 lb., compared with 2,114,000,000 lb. in 1946 and a somewhat higher average of about 2,398,000,000 lb. in the previous five years, 1941–45. Stocks were larger at the beginning of 1947—110,000,000 lb. compared with 69,000,000 lb. a year earlier. The civilian supply was estimated at more than 12 lb. per capita, compared with 11.8 lb. in 1946. Exports declined below the 1946 level of 469,000,000 lb. The price of lard reached a peak in March 1947 and then declined almost one-fourth.

World production followed the trend in hog production which declined slightly in 1947. In June, July and August the United States Department of Agriculture purchased about 85,000,000 lb. of lard for Austria, and the United States and British zones of Germany. The United Nations Relief and Rehabilitation administration made considerable purchases in the early part of 1947 to complete its obligations of foreign aid. Very small amounts were otherwise exported. (*See* also HOGS; MEAT; VEGETABLE OILS AND ANIMAL FATS.) (J. C. Ms.)

**Latin America:** *see* ARGENTINA; BOLIVIA; BRAZIL; BRITISH GUIANA; BRITISH HONDURAS; CHILE; COLOMBIA; COSTA RICA; ECUADOR; FRENCH OVERSEAS TERRITORIES; GUATEMALA; HONDURAS; NICARAGUA; PANAMÁ; PARAGUAY; PERU; SALVADOR, EL; SURINAM; URUGUAY; VENEZUELA.
**Latter Day Saints:** *see* MORMONS.

**Latvia.** One of the Baltic states of northeastern Europe, north of Lithuania, south of Estonia; an independent republic 1920-40, a republic of the U.S.S.R. 1940-41, part of the German "Ostland" 1941-44, reintegrated into the U.S.S.R. after the reconquest of 1944-45. Area 25,395 sq.mi.; population (census 1935) 1,950,502, (est. 1940) 1,994,506. Capital, Riga (393,211 in 1939); the other principal city is Liepaja (57,098 in 1935). Language, Latvian. Religion, Christian (Protestant 56%; Roman Catholic 24.5%; Greek Catholic 9%; Greek Orthodox 5.5%). Chairman of the Council of Ministers: Vilis Lacis.

**History.**—Latvia suffered severely during World War II from both Russian and German armies which swept through the country. The old part of Riga was hardest hit by Russian bombers during the German occupancy. More terrifying to the people were the mass deportations carried through by both great power conquerors. Thousands were taken to Germany as forced labourers and many of them were still in Germany in 1947, either unable or unwilling to return to soviet-controlled Latvia. Thousands more, particularly farmers and intelligentsia, were deported by communist authorities to the interior of the U.S.S.R., these to become labourers or settlers. Russians were then sent in to Latvia to take over the jobs or the farms of the deportees. Often, it was reported, these newcomers even take the names of the dispossessed, and the Russian ical leaders in charge of the country also assumed La names. Still a third class of exiles attempted escape acro Baltic to Sweden.

According to a report to the London *Economist,* Latvi becoming rapidly Russified, and the Russian language ha come official. To a large extent, small peasant propriet characterized the landholding system, continuing the policy of the agrarian reforms of the 1920s. Skilled ar continued to operate independently and private business th During 1947, however, Latvia probably experienced some collectivization just as did Estonia to the north. Evidentl process would be slow.

Latvia continued a very peculiar twilight existence int tionally. Neither the U.S. nor Great Britain recognized establishment of the Communist republic in 1944; Latvian lomats continued to enjoy the hospitality of London and W ington. In May 1947 the British undersecretary C. P. Ma stated that Britain recognized *de facto* the regimes create the U.S.S.R. in the three Baltic states, and he refused to gu tee that *de jure* recognition would not follow.

That all was not well in Latvia was clear from Ru sources where it was admitted by the Russian finance mi A. Zverev that the soviet state was having difficulties colle taxes in the country.

Industrial reconstruction and expansion was proceeding. L served as the main port because of the destruction of Riga carried on an active trade. Meanwhile, Riga's port faci were being rebuilt, and the city was booming. The railwa Moscow was being double-tracked all the way, with occas stretches of three and four track line. (F. D. S

**Law.** Congress freed business from most of the remai entanglements of emergency and war laws during but threw a net of controls about labour unions and their cials through the passage of the Taft-Hartley act. The Decontrol act of 1947 revoked the president's broad emerg and war powers under the Second War Powers act except specified purposes; and on July 25 congress wiped out the of control laws still on the books. Slight concessions to proponents of control were made in three enactments: The ond Decontrol act, extending the president's power over cer materials in critically short supply; the Housing and Rent extending rent control in a relaxed form to Feb. 29, 1948; the Anti-Inflation bill which congress tossed into the preside lap in December at the end of its special session as its ans to his demand for a ten-point inflation control program. bill tendered the president authority to limit the use of g for distilled liquors for five-week periods and extended ex controls and the power to allocate transportation facilities equipment, but beyond that provided no economic controls.

Shying away from drastic measures in any field except lab management relations, congress gave its attention mostly patching up existing statutes and to housekeeping problems. a sequel to the Reorganization act of 1946, designed to stre line congress, an act was passed establishing a Commission Organization of the executive branch of the government to st and report on means for improving the economy and efficie of service in departments, agencies and bureaus. Congress attempted to forestall the difficulties which might follow death, resignation, removal from office or disability of both president and vice-president by enacting the Presidential S cession act which provided that in such a contingency the p ers and duties of chief executive should devolve in turn u the speaker of the house of representatives, the president

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STRIP MINING," Burck's conception, in the *Chicago Times*, of John L. wis' legal setbacks after the coal strike of late 1946. In March 1947, the S. supreme court upheld the contempt charges made against Lewis by a S. district court

mpore of the senate and thereafter upon the cabinet officers the order of their traditional rank.

On March 24 by joint resolution congress proposed an amendent to the constitution providing that no person shall be ected to the office of president more than twice and that no erson who has held office of president for more than two years f a term to which some other person was elected shall be ected more than once. To become operative the amendment ust be ratified by the legislatures of three-fourths of the ates within seven years.

No distinct trends were discernible in the development of rivate law, although a spate of litigation, often novel in the sues presented, arose out of the pressure of inflation and housg and production shortages. Trial and appellate courts were alled upon to adjust bitter battles between landlords and tennts and to determine disputes growing out of the frustration f persons desiring automobiles. Not only were many actions till coming to trial for the enforcement of penalties for black arket deals prior to the expiration of price control, but suits ere also brought, seldom successfully, to obtain cars by writs f replevin and specific performance of sales contracts.

Only the more important legal developments of general interst are reported in this article.

**Administrative Law.**—The supreme court applied the subtantial evidence rule to sustain three rulings (later nullified by e Taft-Hartley act) of the National Labor Relations board pholding the right of foremen and plant guards to representaon through their own unions. In another case, which had been ent back to the labour board to enable an employer to present vidence previously rejected, the supreme court said that the oard did not have to hold a trial *de novo* and listen to a reearsal of evidence already recorded in some 13 volumes of ,000 typewritten pages (*NLRB* v. *Donnelly Garment Co.*, 67 . Ct. 756).

Some interesting aspects of judicial review were expounded by the supreme court in *SEC* v. *Chenery Corp.*, 67 S. Ct. 1575. The court supported the authority of the Securities and Exchange commission to evolve rules on a case-to-case basis for meeting and solving new administrative problems. The court also pointed out, in affirming an SEC order, which it had previously reversed, that the commission had originally grounded its rulings on a wrong view of the law. The court had been powerless, it said, to affirm the results, even though correct, by substituting a sound basis for that advanced by the agency. The case had therefore been remanded to the commission which "had re-examined the problem, recast its rationale and reached the same results." Thus properly supported, the ruling was affirmed.

The actions of other agencies were upheld by the supreme court in decisions which approved: the removal by the board of directors of the federal reserve system of the director of a member bank on the ground that he violated the statutory prohibition against employees engaging in the underwriting business; the appointment by the Federal Home Loan Bank board of a conservator for a savings and loan association without notice; the authority of the price administrator to delegate to regional and district directors the function of signing and issuing subpoenas, which was implicit in the broad rule-making powers granted by the Price Control act; and the jurisdiction of the Federal Power commission to regulate sales of natural gas conveyed by pipeline across state boundaries.

The high court, however, declared that the Interstate Commerce commission exceeded its statutory powers when it attempted to modify a certificate of convenience granted to a water carrier and also when it approved freight rates that destroyed the advantages of low cost barge shipment of grain. Similarly the treasury department was ruled out of bounds in two cases for its classification of employees under the Social Security act.

The attempt of a litigant to by-pass agency procedure by obtaining a declaratory judgment in court when a statute expressly provides for a preliminary administrative decision was rebuffed by the supreme court. It dismissed a suit brought by a government subcontractor to have the Renegotiation act declared unconstitutional on the grounds that he should have taken the matter to the tax court which was given authority by congress to make the initial decision in such a case (*A & D Equipment Corp.* v. *Hirsch*, 67 S. Ct. 1493).

**Agriculture.**—Two Idaho farmers paid dearly for their failure to read the regulations of the Federal Crop Insurance corporation published in the *Federal Register*. In a 5 to 4 decision the supreme court denied them compensation for the loss of 400 ac. of spring wheat reseeded on winter acreage. The regulations, which precluded such coverage, were binding on all who sought crop insurance, the court said, even though they may have been misled by a government agent into thinking they were protected. The government's liability in this respect is not the same as that of a private insurance company (*Federal Crop Ins. Corp.* v. *Merrill*, 68 S. Ct. 1).

The protection of the Crop Insurance act was further narrowed by congress through amendments which restricted crop insurance to counties where (1) income from insured crops is of primary importance, (2) the failure of such crops would bring disaster and (3) a sound program can be successfully provided.

Among other enactments affecting agriculture was the Sugar act of 1948 (adopted in 1947) designed to stabilize sugar producing, refining and importing industries through the use of quotas allocated to certain areas.

The Kansas supreme court strengthened the position of farmers' co-operatives by a decision which approved the far-flung activities of one of the nation's largest co-operative enterprises. The organization's charter permitted it to engage in any activity connected with manufacturing, selling or supplying its members with machinery, equipment or supplies. This by implication included the authority to own and operate oil refineries, canning plants and lumber mills, to engage in international trade and to sell its products to nonmembers as an incident to its other activities (*Kansas* v. *Consumer's Co-op. Assn.*, 183 P. 2d 423).

**Aliens and Citizenship.**—The attempt of a labour contractor to evade the provisions of the Immigration act under cover of the wartime Farm Labor Supply act was blocked by the supreme court. The latter law did not authorize a would-be employer to circumvent the established immigration process. The contractor was rightly prosecuted for writing to persons in Mexico offering to smuggle them into the United States for the price of $25 each (*U.S.* v. *Lem Hoy*, 67 S. Ct. 1004).

In two decisions the supreme court passed upon the application of provisions of the First War Powers act of 1941, amending the Trading with the Enemy act of 1917. In the first case the court ruled that a Swiss national had a right to the return of property seized by the alien property custodian even though these statutes authorized the seizure of property of any foreign nationals whether or not they are enemies or allies of enemies. Congress intended to reach enemy interests masquerading under innocent fronts but not to appropriate assets belonging to friendly or neutral nations where there was no possible enemy taint (*Clark* v. *Uebersee*, 68 S. Ct. 174). In the second case the court supported the authority of the custodian to vest in himself shares of stock of a U.S. corporation held by a Swiss corporation as pledgee for the benefit of a German corporation in spite of a provision of the original Trading with the Enemy act that a pledgee who is not an enemy or an ally of an enemy may continue to hold property under the terms of the pledging agreement (*Silesian Corp.* v. *Clark*, 68 S. Ct. 179).

The claims of four German heirs to land in California devised to them by a relative residing in that state were upheld by the U.S. supreme court against the contention of American heirs that a California statute barred German nationals from sharing in the estate. The court ruled that a 1923 treaty between the U.S. and Germany, guaranteeing reciprocal rights of inheritance to the citizens of the two signatory nations, was paramount to state law. Neither the subsequent war nor U.S. war statutes abrogated the treaty rights (*Clark* v. *Allen*, 67 S. Ct. 1431).

The immigration laws were amended for the benefit of U.S. servicemen who had married or pledged themselves to marry aliens while overseas. The so-called Brides act of 1945 was revised to permit racially inadmissible spouses of U.S. citizen members of the armed forces to enter the U.S., if otherwise admissible. This was intended to enable soldiers of Korean and Japanese descent, who had married girls of the same racial origin, to bring their wives into the country. The time limitations of the Fiancee act of 1946, which permitted aliens betrothed to members of the armed forces to enter the U.S. on visitor's visas, were extended.

**Business Regulation.**—Southern and western states won the first round in their long fight to wipe out sectional discrimination in railroad freight rates. The supreme court sustained an order of the Interstate Commerce commission increasing "class rates" in eastern territory and decreasing them in the south and west. The court found legislative authority for the order in the 1940 amendment to the Interstate Commerce act which enlarged the commission's power to prevent discrimination (*N.Y.* v. *U.S.*, 67 S. Ct. 1207).

The supreme court gave some comfort to the proponents of vigorous antitrust law enforcement by approving a complaint charging Chicago taxicab interests with restraints of trac violation of sections 1 and 2 of the Sherman act. In sen the case back to the district court for trial, the supreme c threw out the defendant's arguments that its interstate ac ties affected national commerce only slightly and constit only a small part of its entire business. Neither the relatic the defendant's interstate trade to interstate business gene nor to the defendant's entire business was material. "I enough if some appreciable part of interstate commerce is subject of monopoly" (*U.S.* v. *Yellow Cab Co.*, 67 S. Ct. 15

How valuable this ruling might become remained to be s The difficulties of making the antitrust laws effective were i trated by the government's unsuccessful attempt to set a the sale by the Pullman company of its car servicing and ope ing business to a group of railroads which handle 95% of passenger traffic in the U.S. The sale, which followed a c order for divestiture, was attacked by the attorney genera the ground that it substituted a more powerful monopoly the one dissolved. But the supreme court, dividing 4 to 4, the sale undisturbed.

The problem of enforcing the antitrust laws became e more difficult when the government's antitrust division tac business combinations which were buttressed by legalized nopolies granted under the patent laws. The government's against the titanium trust was only partially successful. Thro control of more than 300 patents the two defendant corp tions dominated 90% of U.S. trade in titanium, which had come the chief base for making paint. The defendants practically divided the world market between them. Nevert less the district court merely directed the defendants to is patent licences to applicants on a reasonable basis, overru the attorney general's plea for royalty-free licensing and t each defendant be required to divest itself of one of its p cipal plants. In affirming this decree, the supreme court refu to send the case back to the district court with directions make the relief more effective. The decree should not be bro ened, the court said, because it represented an exercise of so judicial discretion. Actually the trial judge had limited the lief because he thought he had no discretion under the h court's prior rulings (*U.S.* v. *National Lead Co. and du P* *Co.*, 67 S. Ct. 1634).

The supreme court found no difficulty in banning a simp type of restraint on trade exercised in connection with pat rights. Leases of patented salt dispensing machines which quired the lessees to use only salt produced by the lessor v lated the Sherman act, the court ruled. Such tie-in agreeme were a misuse of the patent monopoly to restrict competit in an unpatented product (*International Salt Co.* v. *U.S.*, 68 Ct. 12). In several other cases private litigants pleaded t violations of the antitrust laws had invalidated patent licens agreements. Patent owners, who sought to recover royalt under agreements fixing the resale prices for the patented a cles, were told by the supreme court that such agreements v lated the antitrust laws. The licensees could therefore prope contest the validity of the patents, even though they h specifically waived such right in the licensing agreement. T way should be kept open, the court said, for interested perso to challenge patent monopolies. In a third case the purchas of a business had also acquired the exclusive licence to ma and sell certain machines under the vendor's patents, but t agreement required the purchaser to assign to the seller a improvements patents which might be acquired during t period of the agreement. By a 5 to 4 decision the supreme cou held that such an agreement was not in itself illegal. The u of one legalized monopoly to acquire another is not a violati of the antitrust laws, the court said.

A limit was set by the supreme court, however, on the extenon of another form of legalized monopoly. A producer of arkplugs had obtained a lower court order prohibiting the sale reconditioned secondhand sparkplugs bearing its trademark, ut the high court held this went too far. The sale of such renditioned articles is lawful provided that the words "used" or epaired" are stamped on them. The removal of all labels on condhand articles offered for resale is not necessary to preent deception (*Champion Sparkplug Co.* v. *Sanders,* 67 S. Ct. 136).

The 1945 Insurance Moratorium act, exempting insurance usiness from federal regulation, was extended to June 30, 1948.

**Civil Rights.**—The year was not notable for any far-reaching ecisions on civil rights by the supreme court of the United tates. Most significant were its pronouncements in reviewing e proceedings of state courts in criminal cases. The court insted that due process requires that a defendant be fully advised f his rights, especially his right to counsel. The court also led that the guarantee of equal protection of the laws was iolated by the systematic exclusion of Negroes from grand and etit juries in Mississippi for 30 years. The equal protection ause also brought relief against discrimination to a racial inority in California when a federal circuit court forbade chool officials in that state to segregate children of Mexican escent by sending them to separate schools.

A majority of the supreme court justices eloquently defended reedom of the press in *Craig* v. *Harney,* 67 S. Ct. 1249, holdng that the contempt power of the courts must not be used nreasonably to infringe this right. Applying the familiar "clear nd present danger" test, the court reversed jail sentences gainst the publisher, editor and a reporter of a Texas newsaper for characterizing the conduct of a local judge in a pendng eviction trial as high-handed and outrageous. "The veheence of the language used is not alone the measure of the ower to punish for contempt," said Justice Douglas. "The res that it kindles must constitute an imminent, not merely a kely, threat to the administration of justice."

In two cases, which might have considerable impact on the perations of political machines, the supreme court upheld proisions of the Hatch act as valid limitations on freedom of peech. The court affirmed the discharge of a worker in the ederal mint for violating the Hatch act by taking active part at he polls during an election. If strictly applied, this decision vould bar some 3,000,000 U.S. employees from political activity n federal elections (*United Public Workers* v. *Mitchell,* 67 S. Ct. 556). The application of the Hatch act was further exended to nearly 1,000,000 state employees by another decision hat its restrictions also apply to all who work in departments eceiving federal aid (*Okla.* v. *U.S.,* 67 S. Ct. 544).

A Massachusetts trial judge pronounced the novel *Forever mber* not guilty of obscenity in proceedings under an amendent to the state law permitting suit to be brought to ban an ndecent book without requiring inflicting a penalty upon the eller. The judge adopted the view of defense witnesses that the tory was more conducive to sleep than to immorality.

Perhaps more important than court decisions was the report ntitled *To Secure These Rights,* released by President Harry S. ruman's commission on civil rights, headed by Charles E. Vilson, president of the General Electric company. The comission recommended a carefully worked out program to trengthen the machinery for the protection of civil rights hrough legislative, administrative and judicial processes. (*See* lso the article Civil Liberties.)

Decisions on other aspects of civil rights are reported in this rticle under *Constitutional Law* and *Criminal Law.*

**Constitutional Law.**—A fierce controversy over the ownership of oil lands under water off the California shore was adjudicated but not ended by a supreme court decision holding in favour of federal ownership. The U.S. has paramount rights in all land underlying the Pacific ocean within three miles of the low tide mark on the California coast except for bays, harbours and other inland waters, the court ruled. The contention of California that the original states owned the land under navigable tide waters in trust for their states was rejected. The court, however, said that congress has power to dispose of property belonging to the U.S. This pronouncement stimulated the campaign for legislation transferring tidelands from national to state ownership, but congress took no action (*U.S.* v. *California,* 67 S. Ct. 1658).

Another *cause célèbre* revived the age-old controversy over separation of church and state. By a 5 to 4 decision the supreme court approved a New Jersey law under which the parents of children attending parochial schools may be reimbursed for bus fares. While ruling that the first amendment, which prohibits any law respecting an establishment of religion, applies to the states as well as the federal government, the court found that the New Jersey statute made no provision for state support of religious schools. It merely provided a general program to help parents send their children to school safely without regard to religion (*Everson* v. *Board of Education,* 67 S. Ct. 504). For similar reasons the California supreme court upheld a "released time" plan by which the state provides transportation for pupils whose parents wish them to be released from school for religious instruction outside of school. The supreme court of Iowa, however, approached this highly controversial subject quite differently in ruling that school districts had no right to furnish transportation to students attending parochial schools even though their parents were ready to pay their share of the cost. There was serious danger, the court said, that private schools might thereby come under the control of the state. In Illinois the atheist mother of a public school child lost her fight against a program of sectarian religious instruction to voluntary segregated groups of children in a public school. This arrangement did not interfere with the religious freedom of the individual pupil nor constitute state aid to religious institutions and therefore did not violate either state or federal constitutional guaranties, according to the Illinois supreme court.

The commerce clause was applied by the supreme court to support the regulation by the Federal Power commission of rates charged by a natural gas company which mingled its gas with that of other producers before selling it to pipeline companies which then pumped it across state lines (*Interstate Natural Gas Co.* v. *FPC,* 67 S. Ct. 1482). But in another case the court held that the power of the national government in this respect is supplementary to that of the states and does not preclude the state of Indiana from regulating rates on sales of gas delivered directly to industrial consumers even though brought in from other states (*Panhandle etc. Co.* v. *Pub. S. Comm.,* 68 S. Ct. 190).

Following the trend of the past few years the supreme court held that persons engaging to any degree in interstate business subject themselves to federal regulatory laws. A defendant, so engaged, was held liable to prosecution for making a false guarantee that his products were not adulterated or misbranded in violation of the federal Food, Drug and Cosmetics act, even though there was no proof that the articles so guaranteed had actually entered interstate commerce (*U.S.* v. *Walsh,* 67 S. Ct. 1283).

The rapidly developing doctrine of *forum non conveniens* was used to qualify the constitutional right of litigants to resort to the federal courts in diversity of citizenship cases. Corporation defendants were successful in obtaining the dismissal of actions brought against them in districts where it was inconvenient for them to defend. In approving these dismissals the supreme court indicated that district courts should have considerable discretion in weighing the inconvenience to the defendant against the convenience to the plaintiff. The court's own convenience might also be considered.

The voters of New Jersey approved the state's new constitution to go into effect on Jan. 1, 1948, except for the judicial article which would become effective Sept. 15, 1948. The new basic law revamps the judicial system by changes which include the replacement of the 16-member court of errors and appeals with a new supreme court of 7 justices. New rights and privileges are added to those formerly guaranteed. No person may be limited in his privileges because of race, colour, sex, religion or national origin. New Jersey thus became the first state to give equal constitutional rights to women. Labour is guaranteed the right to organize and bargain collectively in private employment and to organize and present grievances through representatives of its own choosing in public employment. The right of trial by jury is modified to permit verdicts by a majority of five-sixths of the jurors. The governor's term was increased from three to four years with elections in odd numbered years to avoid confusion with national elections. Twenty executive departments would replace the 80 former departments, agencies and commissions. The legislature is authorized to assist slum clearance projects through grants of tax exemptions to private enterprises for a limited period.

**Criminal Law.**—The United States supreme court exercised its right to review the proceedings of state courts in criminal trials in a series of cases involving the right to counsel, the constitutional prohibition against cruel and unusual punishments, the privilege against self-incrimination and the manner of selecting jurors. The court took the view that justice should be sure but not too swift. It set aside the conviction in Michigan of a 17-year-old boy for murder, because he had been "hurried through unfamiliar legal proceedings without a word being said in his defense" and without representation by counsel or advice concerning his rights (*DeMeerleer* v. *Michigan,* 67 S. Ct. 596). The court found an even more flagrant deprivation of due process in Illinois where an 18-year-old defendant, unable to speak English, had been sentenced to life imprisonment for murder, without representation by counsel, within one week after his indictment. The record did not show that the defendant had been advised of his right to counsel. Repeated attempts to obtain a review of his case had been blocked by procedural technicalities. In remanding the cause, after the defendant had served 22 years in prison, the supreme court excoriated the state of Illinois for the "procedural morass" of its laws relating to criminal appeals. Convicted defendants who seek relief from the violation of their constitutional rights "are required to ride the Illinois merry-go-round of *habeas corpus, coram nobis* and writ of error before getting a hearing in a federal court." (*Marino* v. *Ragen,* 68 S. Ct. 241.)

In two other Illinois cases, however, the supreme court by votes of 5 to 4 rejected claims that the defendants had been unjustly denied counsel since the docket entries showed that they had been fully informed of their rights (*Carter* v. *Illinois,* 67 S. Ct. 216; *Foster* v. *Illinois,* 67 S. Ct. 1716). Similarly the high court refused to disturb the conviction by a New York court of a defendant who had declined the services of a lawyer when asked by the court if he wanted one (*Gayes* v. *New York,* 67 S. Ct. 1711).

Another aspect of due process came before the supreme court on the appeal of a defendant convicted of murder who had declined to testify in his own behalf for fear that he would thereby have to admit a former conviction. The defendant complained that the provision of the California constit which permitted the judge and prosecutor to comment o failure to take the stand had deprived him of a privileg immunity and denied him due process as guaranteed by the amendment. But the court ruled 5 to 4 that there had bee deprivation of due process. Nor did the protection of the amendment against incriminating one's self become availab a "privilege" of national citizenship guaranteed by the amendment (*Adamson* v. *California,* 67 S. Ct. 1672).

In two cases the high court passed upon the practice of picking juries in criminal cases. A new trial was ordered f Mississippi Negro, condemned to the electric chair for mur ing a white man, on the grounds that there was a strong sho of "purposeful racial discrimination" through the system exclusion of Negroes from the state grand and petit juries more than 30 years (*Patton* v. *Mississippi,* 68 S. Ct. 184). the other hand the practice of selecting a "blue ribbon ju sanctioned by New York statute, was approved by the cour a 5 to 4 decision rejecting the defendant's contention that had been discriminated against by the exclusion of labour foremen, service employees and women from the jury pa The majority of the court found that there was no showing the specially selected jurors were more likely to convict t ordinary jurors (*Fay* v. *N.Y.,* 67 S. Ct. 1613).

The supreme court dealt with a unique problem in conside the appeal of Willie Francis, a 17-year-old Louisiana Negro, freedom on the ground that he should not be executed for m der because the state had failed in its first attempt to elec cute him. He lost his fight for life but won a place in legal tory when the supreme court by a 5 to 4 vote held that exe tion of the sentence was not a cruel and unusual punishmen violation of constitutional rights. Two other points raised his behalf, namely, that he was being deprived of equal pro tion of law and was placed in double jeopardy, were brus aside by the court (*Louisiana* v. *Resweber,* 67 S. Ct. 374).

Another 5 to 4 decision of the supreme court evoked a st of criticism. The court upheld the search of a citizen's h and the seizure of his papers without a search warrant as an cident to his arrest. Officers, who had gone to arrest the fendant on a charge of passing forged checks, could find no s checks but did discover an envelope marked "personal pape Upon opening this they found draft registration cards unla fully held. The defendant was prosecuted for possessing su cards. The court's ruling rested on the ground that the fendant was committing the crime of unlawfully possess draft cards in the very presence of the arresting officers, but effect it gave authority to officers who are making a lawful arr to search both the person arrested and his home (*Harris* *U.S.,* 67 S. Ct. 1098).

The law of treason was somewhat elaborated by the supre court in sustaining the conviction of Hans Max Haupt at his s ond trial for sheltering and aiding his son, Herbert Hau executed nazi saboteur. The constitutional requirement th treason must be proved by the testimony of two witnesses the same overt act had been fulfilled even though the treaso able character of the act was not proved by the same two w nesses (*Haupt* v. *U.S.,* 67 S. Ct. 874).

**Family Relations.**—In its only decision of the year affecti family relations, the supreme court ruled that a New Yo court had the power to modify a Florida decree granting mother custody of her child. While suit was pending the fath had managed to take the child from the mother in Florida New York. The next day the Florida court granted her a divor and custody of her son. She then brought habeas corpus pr ceedings in New York and was awarded the child subject to t father's right of visitation, a proviso which she contested. Th preme court said, however, that an out-of-state court, in doing hat the Florida court might have done, did not violate the full ith and credit clause of the federal constitution (*N.Y. ex rel.* *alvey* v. *Halvey*, 67 S. Ct. 903).

The perennial conflict over proposals to tighten or to relax vorce laws was waged in many state legislatures with a slight end toward liberalization. Most startling was the adoption by e South Carolina assembly of a resolution providing for a ref- endum at the next general election in 1948 on the proposal to peal the state's constitutional prohibition against divorce and permit divorce for adultery, physical cruelty, desertion or bitual drunkenness.

Arkansas joined the small group of states permitting absolute vorce from an insane spouse where the mental illness has con- nued for three years.

Efforts to slow down the operation of Chicago divorce mills rough special legislation which by its terms could only apply Cook county were checked by the Illinois supreme court. he new law, which provided for the appointment of four spe- al masters in chancery to hold preliminary hearings in family lation cases, was designed to reduce the number of split fami- es and insecure children through reconciliation procedures and ereby to decrease juvenile delinquency. This objective was mmendable, the court said, but the statute was invalid because could apply only to one county (*Hunt* v. *County of Cook*, N.E. 2d 48).

**Housing and Rent.**—The Housing and Rent act of 1947 re- oved government controls over all construction except certain musement and recreational facilities and amended the National ousing act by giving the administrator power to insure loans r the mass production of housing for World War II veterans. s a further stimulus to building, congress by various enact- ents increased the amount of mortgage insurance available for onstruction loans on private homes; made $750,000,000 of ortgage insurance available to veterans for the purchase of ermanent housing including war housing built by the govern- ent; authorized federal home loan banks to accept mortgages ith a 25-year maturity as collateral instead of restricting them 20-year maturity paper; and released local housing authori- es from building cost limitations on low-cost-housing and slum- learance projects. These federal efforts to relieve the housing hortage were supplemented in many states by the appropria- ion of funds to provide new dwellings of various types with pecial emphasis on the needs of veterans.

Proponents of urban redevelopment programs were encour- ged by a decision of the Pennsylvania supreme court which pheld the constitutionality of a state law empowering cities to ondemn blighted areas for redevelopment by private builders.

Rent controls in a greatly modified form were extended to eb. 29, 1948, under Title II of the Housing and Rent act, to e administered by the housing expediter. Certain types of ac- ommodations, including hotels, motor courts and tourist homes erving transient guests, newly built, newly rented and con- erted units and luxury priced quarters were exempted from urther control. But the rents of other housing units in defense- ental areas were frozen at the level of June 30, 1947, except 1) that a landlord and tenant might before Dec. 31, 1947, nter into a lease at a rental 15% above the maximum, running o the end of 1948, (2) that the expediter was authorized to ake such rent adjustments as might be necessary to correct nequities, and (3) that he might remove all rent ceilings in any efense-rental area if in his judgment the need for control had eased. The OPA rent regulations and controls over evictions ere terminated, and the emergency court of appeals was abol- shed. The expediter was also directed to create local advisory oards in each area with five or more members to be appointed by him on recommendations made by the state governor. Such boards were authorized to make recommendations for decontrol of an area, the adequacy of rent levels and the operation of the local office, but the weight to be given such recommendations was not indicated.

Many states and municipalities adopted rent control laws to go into effect if and when federal rent controls should expire.

**Labour.**—The strong legal position acquired by unions under the Wagner, Norris-LaGuardia and Wage-Hour acts was shaken by a series of events commencing with the struggle between John L. Lewis and the U.S. government. A succession of strikes in key industries had culminated late in 1946 with the walk-out of soft coal miners in disregard of a district court injunction. The consequent entry of an order finding the United Mine Workers union and its president in contempt of court was affirmed by the U.S. supreme court in March 1947. The assessment of $3,500,000 against the union was cut, however, to $700,000 contingent upon compliance with the court's order, but the fine of $10,000 against Lewis was not disturbed. This case provoked an extraordinary divergence of views among the justices who aligned themselves in five groups supporting five different opinions on different aspects of the controversy. In substance the court held that the miners were government employees under the government's seizure of the mines, that the government was not subject to the provisions of the Norris-LaGuardia act outlawing injunctions by federal courts in labour disputes, and that the trial court had power to issue a restraining order to preserve existing conditions pending a decision upon its own jurisdiction. Arguments by union counsel that civil and criminal contempt proceedings could not be merged were swept aside on the ground that no substantial prejudice had been shown.

Following upon this decision congress enacted the Labor-Management Relations act of 1947 (Taft-Hartley act) as an amendment to the National Labor Relations or Wagner act, thus inaugurating a new era in labour law. Through a series of interlocking provisions the new statute imposes a complex of duties, restrictions and liabilities upon unions and their officials and expands the rights and powers of management and government. It prescribes standards of conduct for organized labour, declaring it an unfair practice for unions to do any of the following: to coerce either employers or employees, to force discrimination under union-shop contracts, to refuse to bargain, to engage in certain types of strikes or secondary boycotts, to engage in "featherbedding," or to extort excessive dues or fees. The check-off is permitted only in case the employee has given his employer a written assignment authorizing the deduction of union dues from his pay check. The new act sanctions union-shop contracts but forbids closed-shop agreements which require the hiring of union members or that hiring be done through unions. Strikes are barred during a 60-day cooling-off period; and injunctions are authorized (free from the prohibitions of the Norris-LaGuardia act) to stay strikes of industry-wide character for a period of 80 days. Unions are also made liable as entities to court proceedings and judgments. A new Federal Mediation and Conciliation service is created to help settle disputes threatening tie-ups in interstate commerce. Unions are required to file with the secretary of labour financial reports, copies of union rules and regulations, and the affidavits of their officers denying communist affiliation. Unions as well as corporations are forbidden to make campaign contributions in federal elections. Strikes by government employees are outlawed. Certain provisions of the Wagner act defining unfair practices by employers are continued but their liabilities as to the expression of opinion and the discharge of employees are narrowed. Employers are also given the right to file charges of unfair practices against unions.

The passage of the Taft-Hartley act set off a chain reaction in state legislatures. Union control laws, variously aimed at curbing jurisdictional strikes, secondary boycotts, sympathy walkouts, work slowdowns, mass picketing and closed-shop contracts, were enacted in a dozen or more states. At least 11 states adopted laws designed to prevent strikes in transportation and public utility industries by imposing penalties or providing by state seizure and operation to assure the continuation of essential services.

North Carolina's new anti-closed-shop law was held constitutional by the state supreme court, but no controversies under similar state statutes or the Taft-Hartley act were determined by the U.S. supreme court during the year. Several decisions of the federal high court were nullified, however, by provisions of the Taft-Hartley law which relieved employers from recognizing unions of supervisory personnel and isolated organizations of plant guards from rank-and-file unions. The supreme court had recognized the rights of both types of employees to the benefits of the Labor Relations act.

On the very day (June 23) when congress passed the Taft-Hartley act over the president's veto, the supreme court dealt union leaders another blow in a decision overruling the contention of James C. Petrillo, head of the musicians' union, that the Lea act is unconstitutional. Petrillo had been charged with using coercion to compel radio stations to employ more persons than needed to perform actual services. The court held that the statute did not violate the due process clause, nor was it too vague or uncertain as contended by counsel for Petrillo (*U.S.* v. *Petrillo*, 67 S. Ct. 1538).

Concern over the potential liabilities of corporations under the overtime pay decision in the Mount Clemens Pottery company case in 1946 inspired enactment of the Portal-to-Portal act of 1947, which exempts employers from liability under the Fair Labor Standards act and related statutes for failure to pay minimum wages or overtime for activities of employees in travelling to and from the actual place of performance of their principal work unless otherwise covered by contract or consumer practice.

**Social Security.**—The status of employees under the Social Security act was determined by the supreme court in two cases. Workers who unloaded coal under contract with a coal dealer, were held to be employees covered by the act; while drivers, who operated their own trucks under contract with coal dealers and motor carriers, were held not to be employees but independent contractors. There is no absolute test, the court said, but the total situation, including the risk undertaken, the control exercised, opportunity for profit, permanency of the relationship and skill required must be considered in deciding the status of workers. No one element is controlling nor is the list complete. The decision construed two sections of the Social Security act and two sections of the Internal Revenue code (*U.S.* v. *Silk*, 67 S. Ct. 1463).

In the second case the commissioner of internal revenue had ruled that a union contract which designated the owner of a ballroom as the employer of a dance band shifted the social security tax from the leader of the band to the ballroom owner. The supreme court, however, told the commissioner that he should have examined the facts instead of construing a private contract which was beyond his authority. Since the band leader hired and fired the band members, told them what to do and how they should do it, paid their salaries and expenses, took the profit and bore all losses, he was the employer and must pay the social security tax (*Bartels* v. *Birmingham*, 67 S. Ct. 1547).

The 1% social security tax rate on wages was extended by congress through the year 1949 both as to employers and employees with provisions for stepping up the rate to 1½% during 1950 and 1951 and 2% thereafter. Federal grants-in-aid to st for assistance to blind, needy and dependent children w continued.

**Taxation.**—In two decisions of general interest to taxpay the supreme court ruled that all income tax refund claims m be filed within three years from the filing of the income return or within two years from the date of paying the tax. four-year period allowed by the internal revenue code for cla ing refunds on certain other types of levies does not apply income taxes. The fact that refunds are asked for taxes roneously or illegally collected makes no difference. Relief fr any resulting injustices can be provided only by congress (*Jo* v. *Liberty Co.*, 68 S. Ct. 229).

The efforts of taxpayers to reduce income taxes through shift of investments between members of a family were thwart by the supreme court. The sale by one spouse of shares of st and the purchase of an identical number of shares of the sa stock by the other spouse on the same day could not be used create capital losses. Such transactions were in effect sa between members of a family which are expressly disallowed deductions by the internal revenue code (*McWilliams* v. *IR* 67 S. Ct. 1477). The court also ruled that the distribution bonds and new common stock for old common stock in a fa ily corporation was a taxable dividend and not a tax-free organization, since its purpose was merely to convey accum lated earnings to the stockholders (*Bazley* v. *IRC*, 67 S. 1489).

Widespread agitation for the enactment of community pr erty laws resulted in such statutes in Michigan, Nebraska, O gon and Pennsylvania. Various types of provisions made it p sible under these laws for a married couple to operate as financial partnership, dividing their income equally for the pu pose of their income tax returns. The Pennsylvania law w killed, however, by a unanimous opinion of the state supre court because it was so uncertain and contradictory as to unworkable. (*See* also TAXATION; UNITED STATES.) (M. DN.)

**Great Britain, the Commonwealth and Europe.**—In m European countries and in the commonwealth there were thr types of legislation during the year. These dealt with currenc crime and constitutions. The shortage of food, goods and foreig exchange in many countries resulted in nearly all cases in t imposition or extension of currency laws, under which the i port or export of foreign (and, often, domestic) currency w hedged about with restrictions aimed at securing that no su stantial sums should go into, or out of, the country concerned a manner which might prove embarrassing or undesirable to t policy of the local government. Secondly, a wave of crimin law reform swept over most countries with the result that t death penalty was abolished in many, and the question abolition discussed in others without legislative results: th reform affected primarily the eastern European countries. Thir ly, constitutional reforms were carried into effect in many Bri ish commonwealth countries, and minor reforms and abortiv discussions on reforms took place in many others. There we also signs of the beginning of serious efforts to co-ordinate t laws of different countries. This desire appeared to have arise from the frequent meetings of representatives of the many mem bers of the United Nations, and although not yet manifested legislation, it began to be shown in such ways as the lifting restrictions on international travel and visas in Europe (excep in the eastern European group of countries) and in the forma tion of smaller countries into customs unions.

*Great Britain and Northern Ireland.*—In Great Britain number of acts were concerned with nationalization of indus tries; in this respect, an inclination to follow in principle th most war-damaged countries (who had passed extensive na onalization laws in 1945 and 1946) was noticeable, but very ifferent methods of working out nationalization were found: e British laws, although giving wider powers to the executive han usual in time of peace did not go as far in that direction as id the earlier nationalization laws of such countries as Poland d Czechoslovakia. A remarkable and important act concerned ith agriculture, for example, provided for effective but de-entralized government control of that industry, but did not go far as to nationalize the land, its owners and occupiers and s profits.

Foreign currency continued to be strictly controlled, and as e kingdom's foreign exchange position worsened, so regula-ons were tightened. The export of currency even to countries ithin the sterling area, such as South Africa, was not entirely nrestricted by the end of the year. Heavy fines, amounting requently to thousands of pounds, were imposed for breach of ese restrictions.

Acts for the regulation and control of penicillin and atomic nergy were passed. Acts concerned with industrial organization nd trade statistics increased government powers in the in-estigation and direction of most industries. The Trafalgar states, which had previously been inalienably held (together ith an annual pension) by the heir of Admiral Lord Nelson, ere made alienable and the pension discontinued: thus the last f the estates given by the country to national heroes of the ast was put on a level with ordinary private property.

Important bills placed before parliament during the year but ot passed by the end of it included the Criminal Justice mendment bill, which gave an opportunity for proposals to be nade for the abolition of the death penalty (permanently or for trial period) and of corporal punishment, and the Parliament ill, by which the government intended to reduce the power of he house of lords to delay certain types of legislation to one ear, with retrospective effect. Emergency laws due to expire t the end of the year included those relating to the control of urnished houses and of rents.

Interesting decisions of the courts confirmed the validity of ninisters' administrative decisions under town planning and sim-lar acts without any requirement to exercise their powers of letermination in a judicial manner and without being subject o any interference from the courts. There was no diminution n the mass of subordinate legislation by rules, regulations and orders under acts, nor was there any indication of greater care being taken than in previous years to make the interpretation of these orders obvious to the wide and legally untrained classes o whom for the most part they applied.

During the year interest revived in the Canon law of the Church of England, on which a number of books were published.

In Northern Ireland a progressive Births and Deaths Regis-ration act removed a hardship by providing for a new (and al-ernative) form of birth certificate, from which it was impossi-le to tell whether the child was legitimate or otherwise.

*British Commonwealth.*—In Australia the stevedoring indus-ry was regulated by an act. A curious trial occurred in which a nan who had been charged with murder in 1935 and found nfit to plead was tried and convicted 12 years later. In Canada he important Canadian Citizenship act was passed, by which hildren born outside the dominion could become Canadians; t was established that the final court for appeals should be in Canada and not in London. Steps were commenced to establish court of criminal appeal for Basutoland other than the judicial ommittee of the privy council in London. India was given do-minion status as the two dominions of India and Pakistan, and he Ceylon Independence act was passed, granting similar status o Ceylon. Burma became an independent republic and Cyprus vas given constitutional government.

A bill to restrict rights of final appeal to courts within the dominion (as had been done in Canada) was introduced into the parliament of the Union of South Africa, but not passed.

*Europe.*—In Bulgaria, the death penalty was abolished soon after the execution of Nikola Petkov.

The people of Finland appeared not wholly to approve the working of the Special law, under which those responsible for bringing the country into World War II were made liable to a ten-year sentence.

A monarchy law in Spain (*q.v.*) made that country nominally a kingdom again, but without apparent practical result.

The U.S.S.R., followed by a number of other eastern European countries, abolished the death penalty. The wives of some foreign nationals were refused permission to leave the country to rejoin their husbands abroad. (*See* also AGRICULTURE; BANKING; BUSINESS REVIEW; CONSUMER CREDIT; INTERNATIONAL LAW; PATENTS; PUBLIC UTILITIES; RELIEF; TAXATION; WAR CRIMES.) (A. L. C.)

**Lawn Tennis:** *see* TENNIS.

## Lead.

The world production tables presented during the years of World War II included many estimates that have been replaced with more reliable figures.

Table I.—*World Smelter Production of Lead, 1941–46*

(Thousands of short tons)

| | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|
| Argentina . . . . | 19.9 | 22.9 | 26.2 | 21.1 | 23.3 | 17.8 |
| Australia . . . . | 239.1 | 231.8 | 202.3 | 173.1 | 174.6 | 169.3 |
| Belgium . . . . . | 9.8 | 17.9 | 8.8 | 8.5 | 8.0 | 26.2 |
| Canada . . . . . | 228.0 | 243.3 | 223.9 | 142.6 | 162.5 | 165.8 |
| France . . . . . | 25.6 | 13.7 | 15.1 | 5.0 | 7.7 | 38.3 |
| Germany . . . . | 190.5 | 154.4 | 173.3 | 154.2 | ? | ? |
| Italy . . . . . . | 37.5 | 31.7 | 13.7 | ? | 0.9 | 15.4 |
| Japan. . . . . . | 28.3 | 29.7 | 35.8 | 8.8 | 13.9 | ? |
| Mexico . . . . . | 166.7 | 212.7 | 234.2 | 196.5 | 221.7 | 151.8 |
| Peru . . . . . . | 36.2 | 41.8 | 47.6 | 42.9 | 44.1 | 40.2 |
| Spain . . . . . . | 51.7 | 45.4 | 40.5 | 34.1 | 35.1 | 35.6 |
| U.S.S.R. . . . . . | ? | 110 | 129 | 121 | ? | ? |
| United States. . . | 544.7 | 548.9 | 469.5 | 464.7 | 443.5 | 338.1 |
| Total . . . . . | ? | 1,883 | 1,736 | 1,502 | 1,378 | 1,285 |

World lead production declined consistently each year after 1942, with a total drop of one-third.

**United States.**—The more important features of the lead industry in the United States are shown in Table II.

Table II.—*Data of Lead Industry in the U.S., 1940–46*

(Thousands of short tons)

| | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|---|
| Mine output . . | 457.4 | 461.4 | 496.2 | 453.3 | 416.9 | 390.8 | 335.5 |
| Refinery output . | 533.2 | 571.0 | 566.8 | 469.6 | 464.8 | 443.6 | 338.2 |
| Domestic ores | 433.1 | 470.5 | 467.4 | 406.5 | 394.4 | 356.5 | 293.3 |
| Foreign ores . | 100.1 | 100.5 | 99.5 | 63.1 | 70.3 | 87.1 | 44.9 |
| Imports . . . . | 282.5 | 381.2 | 492.5 | 319.1 | 319.7 | 300.3 | 159.2 |
| Exports . . . . | 49.1 | 14.4 | 5.8 | 13.3 | 15.5 | 1.8 | 0.7 |
| Secondary . . . | 260.3 | 397.4 | 323.0 | 342.1 | 331.4 | 363.0 | 392.8 |
| Consumption . . | 782 | 1,050 | 1,043 | 1,113 | 1,119 | 1052 | 956.5 |
| Stocks, year-end | | | | | | | |
| Producers . . | 143.4 | 100.1 | 117.2 | 129.5 | 125.1 | 161.8 | 189.7 |
| Consumers . . | 78.5 | 101.0 | 81.7 | 115.2 | 86.9 | 102.9 | 41.9 |
| Government . | — | — | 248.4 | 173.9 | 90.5 | 68.7 | 45.5 |

Mine production had by 1946 declined to almost one-third less than the 1942 peak, and to the lowest figure after 1935, and for the first time was surpassed by the secondary recovery. A drop of nearly one-half in imports further accentuated the shortage. Much of the 1946 decline was caused by strikes in the mines and smelters, and in addition the price situation was unfavourable until after the abandonment of price control.

Without the strike handicap in 1947, mine output in the first three quarters of the year rose to 278,070 short tons, primary metal output was still better, with 477,624 tons through October, and secondary recovery doubled the 1946 rate.

**Canada.**—The output of primary lead increased from 173,497 short tons in 1945 to 176,987 tons in 1946, but dropped back again in 1947, to 162,000 tons. Refinery output was 165,744 tons in 1946 and 161,444 tons in 1947, the difference between these and the primary figures being the exports of lead in ore and concentrates.

**Mexico.**—The production rate increased in 1947, to 163,000 short tons in the first three quarters.

**Australia.**—The primary output through Aug. 1947 was 143,957 short tons, nearly one-third better than the 1946 rate. (*See* also MINERAL AND METAL PRODUCTION AND PRICES.)

(G. A. Ro.)

**League of Women Voters of the United States:** *see* SOCIETIES AND ASSOCIATIONS.

**Leahy, William Daniel** (1875– ), U.S. naval officer, was born at Hampton, Ia., on May 6. He was graduated from the U.S. naval academy, Annapolis, Md., in 1897 and advanced to rank of admiral in 1936. In Nov. 1940, Pres. Franklin D. Roosevelt named him ambassador to the French government at Vichy. In April 1942, Roosevelt summoned Leahy to Washington where, on July 21, he became chief of staff to the commander in chief. In this capacity he accompanied the president to the many wartime Big Three conferences. In Dec. 1944 Admiral Leahy was promoted to the five-star rank of admiral of the fleet.

Leahy was appointed by Pres. Harry S. Truman, March 28, 1946, to a special ten-man national defense board composed of top leaders of the armed services. Although remaining quietly in the background, the admiral was a powerful factor in the shaping of U.S. foreign policy in 1947. One of the chief proponents of an anticommunist global effort, his already considerable influence in the White House grew even stronger after the resignation of Secy. of State James F. Byrnes. It was generally believed that Leahy had a large share in formulating the so-called "Truman doctrine" and that he encouraged the president to push vigorously the anticommunist "containment" policy and the Marshall plan.

**Lease-Lend:** *see* LEND-LEASE.

**Leather.** World conditions in the leather industry became more clearly defined in 1947, and for the first time after the start of World War II, it was possible to obtain accurate information about world raw stock supplies and leather tanning activities, although the information was still incomplete and inconclusive in its relation to future activities.

From all available reports, a gradual restoration of the prewar pattern of the leather industry was taking place. In European countries where tanning activity had been sharply increased to meet national military needs, factory output of leather was reportedly declining to normal levels for home consumption and moderate exports.

Even more important, was the apparent abandonment by South American countries, especially Argentina and Brazil, of a war-inspired program to develop a strongly competitive tanning industry. Those countries were normally important suppliers of hides and skins, and the withholding of supplies from world markets had caused considerable apprehension, especially among U.S. tanners. Although nothing in 1947 indicated that this program had failed completely, there was considerable evidence that it would not reach planned proportions and that more raw stock and less finished goods would be shipped to world markets in the future.

Added to this favourable restoration of world balance in the industry was the reopening of raw material supply sources and practically all supplying areas were making normal shipments by the end of 1947, although much of the stock remained below normal quality standards.

Depletion of herds in the war zones was not as great as been feared, department of agriculture reports in 1947 reve These reports estimated world cattle numbers at the begin of 1947 at about 716,000,000 head, an increase of 3,50 over the preceding year and 6,000,000 above the 193 average.

The quality of raw stock supplies, both imported and mestic, was not pleasing to U.S. tanners and consumers. siderable amounts of inferior raw stocks were tanned into ferior leather, and consistent efforts were made through year to better the situation—which was aggravated still fur by high prices all along the line, allowing no margins for able qualities.

Although the U.S. leather industry was confronted with m problems of raw stock supply, factory productivity, and o postwar factors, production in 1947 continued at a high le The following table shows the average monthly productio the U.S. of the principal types of leather for the years 1943- with the monthly average for the 1931–39 period.

*Average U.S. Monthly Leather Production, 1943-47*

(000's omitted)

| | 1947 | 1946 | 1945 | 1944 | 1943 | 193<br>inc |
|---|---|---|---|---|---|---|
| All cattle hides (including kips for side leather) | 2,373 | 2,253 | 2,297 | 2,179 | 2,138 | 1,6 |
| Calf and whole kip | 1,057 | 907 | 970 | 911 | 926 | 1,0 |
| Goat and kid | 3,039 | 2,011 | 2,002 | 2,888 | 3,113 | 4,0 |
| All sheep and lamb | 2,954 | 3,998 | 4,370 | 4,608 | 4,991 | 2,8 |

1947 figures are based on an average of ten months' production. Compiled from of the Tanners Council of America and the U.S. bureau of the census.

The greatest problems of the U.S. leather industry in 1 revolved around economic factors, directly and indirectly affe ing operations. Summed up briefly these represented high p duction costs, high wage levels, general economic factors t might affect shoe production trends (shoe production accou for more than 90% of all U.S. leather used), unsatisfact quality standards, efforts to raise advertising and merchandis standards within the industry or affecting the industry, and competition of leather substitutes.

On June 1 export restrictions on hides, skins and leather w removed, and the last trace of wartime controls over these co modities was ended. The U.S. was the first major power in world to revert to a prewar free market basis for hides, sk and leather.

Reports of progress in the advancement of leather mak science were significant during the year, and not only reveal a continuance of the scientific interest that had been well und way before World War II, but also disclosed many importa developments that had come about through wartime resear and study.

In February the Tanners Council Research laboratory at t University of Cincinnati offered a fellowship of $1,000 a ye and free tuition in the university to graduate chemists or chem cal engineers, preferably young men who had indicated so interest in tanning and who had sufficient chemical education permit them to do graduate work.

At the beginning of the year, the Leathersellers' Technic college, of Bermondsey, London, reopened after having be closed since 1941.

Among the scientific developments interesting to the leath industry in 1947 was the employment of spectroscopy. One the first applications in leather chemistry was made by Dr. R. Theis, of Lehigh university, Bethlehem, Pa., and his ass ciates. This work had to do with chrome analysis. Anoth application of the spectrophotometer by tanners was in th identification of their leathers. This is done by incorporatin in the leather some inert chemical in small quantities—for i stance it can be put in with tanning or fatliquoring. Then, matter how much use the leather receives, it is possible to lea t a sample, put it in the spectrophotometer and determine e presence of the identifying chemical. In this way, the nner can tell whether it is his leather which fails in shoes, en when labels or marks are removed.

Dr. L. Masner, of the Bat'a corporation, Zlin, Czechoslovakia, ported that European tanners were using quebracho alone to n sole leather, and obtaining good substance leather. The port was of considerable interest to U.S. tanners, as supplies chestnut, a principal sole leather tanning material, were fast vindling in the U.S. because of the nation-wide blight.

The Tanners Council Research laboratory conducted experi- ents in the use of infra-red as a leather drying medium, and ported that at the existing stage of development, and the ice of electricity, the process was too expensive. However, e laboratory stated that when infra-red is used on finishes of ather, the results are beneficial.

There was some interest in the U.S. industry in reported de- ils of hide preservation through a mummifying process, de- loped in Argentina in 1943. In general, the process consists a rapid unhairing (30 min.) by the use of strong sulphide- ne liquors in a drum. The hair is lost as such. The unhaired des are washed in the drum, delimed with buffer salts and te material. The third step consists of treatment of the de- ned hides in a bath of bran, yeast, salt, bisulphite, formalde- de, oil and ammonia. This requires two hours. The hides are en dried and are ready for shipment.

Difficulties in securing a uniform wetting of hides and skins ere overcome in practice by the use of sodium polysulphides a procedure developed and reported by the Tanners Council esearch laboratory. If skins and hides are wet in a dilute solu- on of polysulphides, the dry salted hides become uniformly etted in short order and from then on will process as well as e best green salted hides. Dry hides (flints), instead of re- uiring six to eight days of soaking, can be well wetted in less an half the time.

Important work was also inaugurated by the laboratory in 947 in the adaptation of sulphonyl chlorides, developed in Ger- any during World War II, to U.S. tanning processes. The roject was underwritten by the army quartermaster department.

The U.S. department of agriculture's Eastern Regional Re- earch laboratory staff devised methods of extracting canaigre hich give yields much higher than obtained by current leach- g methods. The laboratory also found several strains of bac- eria which act upon canaigre extract and, by reducing the ugars, improve its purity. Canaigre is an annual crop and ould be harvested annually, thus providing much-needed do- estic vegetable tannins.

The state of California also reported developments in its tudy of potential tanning materials, and tanners showed spe- ial interest in reports of California wattle development. (*See* lso Shoe Industry.) (R. B. B.)

**ebanon:** *see* Syria and Lebanon.

**eeward Islands.** The Leeward Island colony, with a total area of 423 sq.mi., consists of a roup of islands forming the northern part of the Lesser Antilles the Caribbean. Politically it is divided into four presidencies, iz.: Antigua (with Barbuda); St. Christopher (or Kitts) and evis (with Anguilla); Montserrat; and the Virgin Islands. op. (1946 census): Antigua, 41,757; St. Kitts-Nevis, 46,253; ontserrat, 14,322; Virgin Islands, 6,508. The capital of the olony is St. John's (Antigua) with a pop. of 10,962. Basseterre St. Kitts) is the only other large town (pop. 12,201). Execu- ve authority is vested in a governor appointed by the British rown, assisted by an executive council and by a general legislative council consisting of the governor (as president), eight official members, eight elected members (three from Antigua, three from St. Kitts and two from Montserrat) and one unofficial member from the Virgin Islands. Each of the larger islands has an island council to deal with its local affairs. Acting governor in 1947: W. A. MacNie.

**History.**—The Leeward Islands colony was represented at the conference held in Jamaica in Sept. 1947 to consider the general question of West Indian federation. The narrower issue of closer union between the Leeward and Windward Islands also came under discussion during the year. A conference was held in St. Kitts in Jan. 1947, attended by representatives of the legislatures of the two colonies, at which a series of resolutions on matters of constitutional reform was passed, the most important of which was to the effect that all the islands in the Leeward and Windward groups should be combined in one federation under a strong central government. These resolutions were referred in the first instance to the island legislatures; it was expected that the considered recommendations of the governor would be submitted in due course to the secretary of state in London. Grants were approved under the Colonial Development and Welfare act in the course of 1947 for a number of schemes affecting the Leeward Islands. These related to such matters as the training of teachers, the appointments of federal education officer and chief veterinary officer, the development of civil aviation and the water and electricity supply in Antigua.

**Finance and Trade.**—The usual currency in the Leeward Islands is British silver, but United States coins also circulate. Revenue (1946) £800,000; expenditure £839,000. Imports (1946) £1,542,060; exports £1,284,000. The chief products of the group are sugar and cotton. In Montserrat the cultivation of sugar, once the staple industry of the island, had been reduced to small dimensions; and sea-island cotton, tomatoes, onions and limes were the principal products. (J. E. Sh.)

**Legislation:** *see* Business Review; Law.

**Leland Stanford Junior University:** *see* Stanford University.

**Lemons:** *see* Fruit.

**Lend-Lease.** The Lend-Lease act, "an Act to Promote the Defense of the United States," was enacted by the congress on March 11, 1941, nearly a year before the United States actively entered the war against the axis powers. The act provided a means whereby the countries opposing axis aggression could obtain much needed war supplies in the United States although lacking the necessary dollar resources. It also provided a mechanism for efficient foreign procurement of war materials in the United States. During the period of hostilities most lend-lease aid was rendered under agreements with the recipient countries providing for future determination of the amounts and terms of settlement. Many lend-lease countries supplied as reverse lend-lease essential goods and services needed by the United States.

With the conclusion of hostilities on V-J day, Sept. 2, 1945, lend-lease and reverse lend-lease on a wartime basis were halted except for aid to China, which was continued for clean-up operations against the Japanese, and for certain other minor cases. However, noncombat goods on hand or on order on V-J day, aggregating in value about $1,200,000,000, were in large measure furnished to the countries for which they were originally intended, on a cash payment basis or on credit terms contained in so-called "pipeline" agreements with the recipient countries. These agreements were concluded under the authority of section 3(c) of the Lend-Lease act, as amended, under which the powers necessary to carry out any contract or agreement made prior to July 1, 1946, were continued in effect until July 1, 1949.

By the end of 1946 more than 97% of all "pipeline" goods had been delivered. The Third Deficiency Appropriation act, 1946, approved July 23, 1946, which provided funds for the liquidation of lend-lease activities, contained a proviso that prohibited the use of these funds for any expense incident to the shipment abroad of any commodities after Dec. 31, 1946. Upon receipt of a ruling by the comptroller general that, in view of this act, shipments could not be continued even with funds which had been deposited by the recipient countries for the purpose, all shipments were suspended early in Jan. 1947. Some lend-lease articles, title to which had passed to the soviet government prior to Dec. 31, 1946, under the terms of the soviet "pipeline" agreement of Oct. 15, 1945, were delivered to soviet custody up to the end of March, at which time even these deliveries were suspended pending action by the congress. The Supplemental Appropriation act, 1948, approved July 30, 1947, provided funds and authority for continuation of deliveries to ten of the affected countries, but made no provision for further shipments to the Union of Soviet Socialist Republics. The articles for the Soviet Union still remaining undelivered were authorized for disposal as surplus property. Deliveries of articles for other countries were continued.

During the year 1947 final settlements for lend-lease were concluded with the governments of the Netherlands and the Union of South Africa. In both cases a final disposition of various wartime claims and accounts was effected, and payments were agreed for South Africa in the amount of $100,000,000 in cash and for the Netherlands in the amount of $67,500,000, of which $19,500,000 had been paid and the balance would be due over a period of 30 years from July 1, 1951. Previously, settlement agreements had been concluded with Australia, Belgium, France, India, New Zealand, Turkey and the United Kingdom. At the year's end settlements were in process of negotiation with China, Czechoslovakia, Ethiopia, Greece, Norway, Poland, the Union of Soviet Socialist Republics and Yugoslavia.

Following the principles of the original lend-lease "master agreements," the settlements were such as not to burden commerce between the countries. In general no payments were asked for lend-lease articles destroyed, lost or consumed in the war effort and, in return for payment of current value, full title was given to nonmilitary lend-lease articles remaining at the end of the war. Military supplies were left with the recipient government without payment but subject to recapture by the United States. Naval vessels must be returned to the United States in accordance with law, and in some instances the United States required the return of other articles of use in other government programs.

Lend-lease aid to Canada, Egypt, Iceland, Iran, Iraq and Panamá was on a full cash payment basis. Aid to Liberia consisted of a port construction project with payment to be made from future revenue of the port. The terms of payment for lend-lease assistance to the American republics, other than Canada and Panamá, were specified in the original lend-lease agreements with those countries.

Total lend-lease aid rendered to all countries both during the war and in the post-war period amounted to $50,243,996,000, as reported through June 30, 1947. Of this amount $1,848,761,000 represented losses, expenses, etc., not charged to specific recipient countries. The balance of $48,895,235,000 was distributed among 43 allied nations. The British empire, including Australia, Canada, India, New Zealand, South Africa, the United Kingdom and Colonies, received by far the largest portion, namely $31,384,810,000. The Union of Soviet Socialist Republics was the second largest recipient, receiving $10,982,089,000. Reverse lend-lease received by the United States was reported as $7,819,323,000 through June 30, 1947. Of this amount $6,752,073,000 was received from the British empire. Total cash payments received from foreign governments for various lend-lease settlements and transactions aggregated $1,502,144,000 to J
30, 1947.

After Oct. 20, 1945, the lend-lease liquidation program
administered by the department of state, while fiscal operat
were handled by the treasury department. (*See* also AGRIC
TURE.) (N. T. N.

**Leprosy.** Clinical experimentation in the treatment of lep
during 1947 continued as a by-product of tu
culosis research. Human leprosy had not yet been reprodu
in a lower animal, nor had the *Mycobacterium leprae* been
tured so that the antibacterial effectiveness of new drugs c
be tried in test tubes. The sulfone drugs showing promis
tuberculosis—promin, diasone and promizóle—were used
treating leprosy. Diasone seemed preferred since it can
given by mouth and has low toxicity. In addition to the
viously reported favourable results with use of these drugs
Carville, La., there were reports from the British West Ind
British Guiana and Argentina indicating that many advan
cases of leprosy had shown clinical improvement following
longed therapy, although reversal of bacteriologically positiv
negative cases rarely occurs. From British Guiana came a
liminary report of use in leprosy of another member of
sulfone group—sulfetrone—which had shown promise in tu
culosis. Though the report was based on only six cases f
period of six months, optimism was expressed on account of
low toxicity and apparently beneficial effect. The real value
the sulfone drugs in treating leprosy, however, would not
known for many years because there is probably no other
terial disease in which the evaluation of treatment is so diffic

When streptomycin became available there was some
dence of its usefulness in experimental and human tuberculos
consequently it was necessary to try its effect in leprosy. In
last half of 1946 treatment of 10 patients by this drug was be
at Carville, La. The patients received 2,000,000 units daily
four months and one half that dose for another four mont
All cases selected were of the advanced lepromatous type.
provement was noted in 7 of the 10, but the results appeared
better than those generally obtained with the sulfone drugs.
patient became bacteriologically negative. Serious toxic effe
were noted. One patient became deaf and all had sympto
of vertigo; other undesirable effects were anaemia, loss
weight and nephritis. Eosinophilia occurred in all. The inves
gators concluded that unless streptomycin could be improved
that it would not be toxic, it would not become a useful drug
the treatment of leprosy.

Although leprosy is one of the oldest of diseases, controve
still existed in 1947 concerning its transmission by inoculati
and its incubation. Many human inoculation experiments h
been attempted in Europe and in Hawaii with negative resul
The celebrated case of Keanu, the condemned prisoner in H
waii, who was inoculated and developed leprosy, had not be
accepted as proof because he came from a leprous family. Oth
isolated cases of inoculated leprosy had been accepted skeptica
on account of the endemicity of leprosy in the geographi
areas involved, and the well known fact that in lepers lesio
frequently develop at the site of an injury. From Michig
came a report which furnished strong evidence that human le
rosy could be transmitted by inoculation. Two young me
friends from the same Michigan town, while serving with t
U.S. marines in 1943, were successively tattooed in Melbour
Australia, by the same man. In the tattooed emblem of eac
leprous lesions developed two and one-half years later. T
diagnosis of leprosy seemed well established. At the time of t
tattooing, according to the report, the marines and the tattoo
were inebriated, and several needles were broken. The d

pment of leprosy in two people with this history, plus the : that they lived in a community without other known lepers, bably offered the best published evidence so far that leprosy be transmitted by inoculation. It had to be assumed, of rse, that the needles had been used on a leper or that the ooer was leprous.

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(C. H. BD.)

**ttuce.** Lettuce was one of the few U.S. vegetable crops that exceeded the high record of 1946. Total protion in 1947 was estimated at 34,254,000 crates, compared h 33,801,000 in 1946 and the ten-year (1936–45) average of 575,000. Acreage was smaller than in 1946, but the yield rose 182 crates per acre compared with 164 crates in 1946.

***U.S. Lettuce Production 1947, 1946 and 10-yr. Average 1936-45***

(In thousands of crates)

| rop | 1947 | 1946 | 10-yr. average |
|---|---|---|---|
| ter | 8,710 | 9,387 | 5,710 |
| y spring | 8,960 | 8,391 | 6,598 |
| spring | 1,288 | 1,315 | 926 |
| mer | 7,615 | 7,450 | 5,148 |
|  | 7,681 | 7,258 | 5,194 |

Prices were relatively strong through 1947 in spite of the ge crop. In August producers received $4.25 per crate, comred with $2.30 per crate in 1946. The larger indicated proction of the fall crop depressed prices toward the end of year. (*See* also VEGETABLES.) (J. C. Ms.)

**wis, John Llewellyn** (1880– ), U.S. labour leader, was born Feb. 12 in Lucas,

For his early career, see *Encyclopædia Britannica.*

In 1935 Lewis formed the Committee for Industrial Organiion, later renamed the Congress of Industrial Organizations. refused to heed the American Federation of Labor's order dissolve the committee, and the participating unions in the I.O. were suspended in 1936 and expelled from A.F. of L. mbership in 1937.

Lewis supported Franklin D. Roosevelt in 1936, but in 1940 switched his support to Wendell Willkie and promised to ren as chief of the Congress of Industrial Organizations if illkie lost. He made good his promise but retained the presincy of the United Mine Workers of America. In Oct. 1942, he l the mine workers out of the C.I.O. and after three years of gotiations, his union was finally readmitted to the American ederation of Labor, Jan. 25, 1946.

Lewis called two major strikes in 1946. The first (April 1– ay 29) was terminated upon the signing of a contract, to ntinue during government operation of the country's coal nes, which included a wage increase and other benefits for miners. However, the second strike, called in November ter he unilaterally terminated the contract with the governent on the ground that it had been violated, came to grief. e government, contending Lewis had no authority to abrogate contract, brought him up before a federal district court d on Dec. 3 Lewis and the union were convicted of civil and minal contempt. Lewis was personally fined $10,000 and the M.W. $3,500,000. Upholding the conviction, the U.S. supreme urt on March 6, 1947, sustained the fine against Lewis, but duced the union penalty to $700,000. Although Lewis assailed government's "blackjack" tactics, he yielded to the supreme urt on March 19 and withdrew the contract termination notice that had started the strike.

However, after the Centralia, Ill., mine disaster which occurred later that month, he ordered a "memorial" shutdown of the mines in protest against the accident, explaining that working agreements with the operators permitted observance of such memorials.

In October, Lewis attacked the A.F. of L. for its willingness to comply with the ruling of Robert N. Denham, general counsel of the National Labor Relations board, requiring union officers to sign non-communist affidavits.

The federation's executive council voted, however, to amend the union constitution so that its locals could avail themselves of N.L.R.B.'s facilities. Two months later (Dec. 12), Lewis sent a curt note to Pres. William Green announcing his union's decision to leave the A.F. of L. in the following two words: "We disaffiliate."

**Liberal Party:** *see* POLITICAL PARTIES, BRITISH.

**Liberia.** The Republic of Liberia is situated on the west coast of Africa at the lower curve of the continental bulge; it faces the Atlantic narrows at the point where Africa most nearly approaches South America. It is approximately 43,000 sq.mi. in area. On the northwest, Liberia is bordered by the British colony of Sierra Leone, and on the north and northeast by the French colonies of Guinea and the Ivory Coast. The population was estimated in 1947 to be 2,000,000 (all Negroes) of which approximately 12,000 persons were direct descendants of the original settlers from the United States. The remaining majority was composed of indigenous Africans. Many of these have become detribalized and have adopted the life and customs of the more advanced section of the population, but the larger part still live under tribal conditions. English is the official language; the tribal languages are divided into some 28 dialects which stem from Arabic, Bantu and Nilotic language bases. Monrovia (pop. approx. 10,000) is the capital city.

Liberia has a constitution modelled after that of the United States and its government functions through executive, legislative and judiciary branches. The president is elected for a term of eight years. The Hon. William V. S. Tubman was inaugurated in Jan. 1944. Liberia has granted suffrage to women and given political representation in the house of representatives to the tribal peoples. Liberia grants religious freedom to all denominations. Nearly all of the U.S. church organizations have maintained missions in Liberia for many years.

**History.**—In 1947, a new port at Monrovia, which had been under construction for three years at a cost of approximately $19,000,000, was opened to world commerce. This port accommodates large vessels alongside its 2,000 ft. of wharfage. The depth of water within the harbour permits vessels drawing up to 30 ft. to enter the channel and provides a 32-ft. depth alongside the dock. Two American shipping lines established new services between the U.S. and Liberia during 1947. A preliminary survey was completed for the construction of a railroad through the Western province from the new port to a terminus at Nzerekore in French Guinea. Arrangements were made during 1947 for the operation by U.S. and Liberian interests of Roberts air field near Monrovia, built by the U.S. as a war measure, which would permit maintenance of international commercial air transportation and the operation by a Liberian company of a coastwise air service. Work was continued on the development of the valuable iron ore deposits at Bomi hills; a vehicular road through the Central province to connect the Liberian coast with roads in French Guinea and to open this area to trade was completed. Forestry and agricultural surveys by the U.S. Economic mission, including special work on coffee, palm oil and cacao production, were made during the year. The U.S. Public Health mission also continued its operation and expanded its training program. Plans were prepared and arrangements were being discussed for construction of a public water system and improved electric lighting for the city of Monrovia.

In July 1947, the republic celebrated its 100th anniversary; delegations representing 13 countries were present at the ceremonies. The U.S., France and Great Britain sent both diplomatic and naval missions for the occasion.

In October, the government announced its decision to create an official instrument for over-all development to be known as The Liberia company. The Government and Stettinius Associates Inc., a U.S. company, had agreed jointly to participate in a co-operative effort to bring together the advantages of private resources in capital and specialized knowledge from the United States, and the natural resources of Liberia, with a view to improving the levels of living in Liberia and to expand the people's opportunity for economic and social advancement.

**Education.**—In 1947, institutions included 84 government, 81 mission, a number of schools supported directly by the tribes and 25 private schools. The most important were: Liberia college; College of West Africa; and Booker T. Washington Industrial and Agricultural institute. These schools and colleges receive partial support from the government. The U.S. government makes a yearly grant to the Booker T. Washington institute. Substantial sums for education are expended yearly in Liberia by the Protestant Episcopal Church, American Lutheran Church, American Baptist Church, South, the African Methodist Episcopal Church; the American Zion Churches and Seventh Day Adventists maintain schools as does the Roman Catholic Church. Education for children from 6 to 16 is by law compulsory and free, although the facilities are inadequate and many children are unable for that reason to attend a school. The Liberian government steadily increased its annual appropriations for education during the presidency of William V. S. Tubman. In 1947, 38 Liberian students were in the U.S., principally on government scholarships.

**Finance.**—Revenue receipts for the fiscal year 1947 were the largest in the history of the republic—$3,075,000 as compared with $2,337,000 in 1946 and $1,933,000 in 1945. Liberia's external debt as of Nov. 1947 was $650,000. There was no internal debt. For the 12 months ending Aug. 31, 1947, imports were reported to the value of $8,317,000 and exports for the same period, $13,067,000. The number of vessels calling at Liberian ports during the fiscal year was 201 as compared with 144 in 1946. The fiscal year is Oct. 1 to Sept. 30.

**Trade and Agriculture.**—The largest U.S. institution in Liberia is the Firestone Plantation company, a subsidiary of the Firestone Tire and Rubber company. Liberian rubber exports are estimated to average approximately 20,000 tons of crude rubber annually. The company employs between 22,000 and 30,000 Liberians and has a foreign staff in excess of 100. The second most important export is gold; the average annual export is about 22,000 troy oz. Piassava fibre, palm oil, palm kernels, kola nuts, cacao and coffee also are exported. Liberia regularly imports from the U.S. petroleum products, textiles, hardware, automobiles, machinery, steel and construction material, clothing, shoes and radio equipment. (S. de la R.)

## Libraries.

The 1947 problems, resembling those of 1946, were intensified by rising costs and staff shortages. Carl H. Milam, executive secretary of the American Library association, stated that operational costs had increased 50%, income about 12%. Mary U. Rothrock, outgoing A.L.A. president, estimated a shortage of 4,900 professionals. Yet, it was a constructive year.

American librarians attended the Documentation confe (Bern, Switzerland), the Scandinavian Library congress Norway), the United Nations Educational, Scientific and tural organization (U.N.E.S.C.O.) conference (Mexico Mexico). They visited occupied countries as special consul They aided in U.N.E.S.C.O.'s library activities (1947 bu more than $6,000,000). The Special Libraries association j the International Federation of Library Associations. Th brary of Congress' European mission ended; books, etc., se in occupied countries, were going to U.S. libraries. The Princeton conference on exchanges brought results. Army lations allowed flow of cultural materials to and from the pied countries. Eligibility of librarians under the Fulbrigh (scholarships to countries owing the U.S. for lend-lease) being explored. Dr. P. P. Sevensma, former League of Na librarian, accepted the U.N. librarianship in New York.

U.S. information libraries under the state and war (21 in pied countries) departments continued, the former reduce 67 because of slashed funds. The American Book centre, c Dec. 31, had shipped 1,250,000 volumes, mainly scholarl Allied libraries, fewer to others (the U.S. delegation was u national book exchanges at the Mexico City U.N.E.S.C.O. n ing). At the May–June Assembly of Librarians of the Ar cas, more than 50 representatives from 37 Latin Ame libraries discussed both technical and administrative matte

The A.L.A. Federal Relations office (Paul Howard, direc concentrated on the $25,000,000 Library Demonstration bil fore congress, with fair hope of passage in 1948. The A. national plan (reorganization of about 7,500 public libraries 1,200 regional units) was approved and would be published in 1948. The public library survey by the Social Science search council (Robert D. Leigh, director; staff of econom sociologists, etc.), financed by a $175,000 Carnegie corpora grant, would study 23 projects in 49 libraries to determine eligibility to conduct adult education programs. The sup tendent of documents revised both distribution procedures the monthly catalogue of government publications (Jerom Wilcox, consultant). The Association of Research Libra documents expediter, Washington, supplied 59 subscribing lib ies, including non-letter-press material. A.R.L. approved original "Farmington plan" (at least one copy of every for publication in some American library) and would commenc Jan. 1, 1948, to secure Swedish, French and Swiss publicati

**Growth and Development.**—Libraries had, in general, n income, but rising costs nullified increases. To the 1946 lis 1,000,000-vol. holdings were added New York State library, bany, N.Y., and St. Louis Public library, St. Louis, Mo. troit Public library, Detroit, Mich., planned an industrial search service for subscribing industrial concerns. More regi and county systems were established, the most important b Erie county, N.Y., which includes Buffalo. Librarians at November Conference of Eastern College Librarians called u the president and congress to protect freedom of conscien Paul North Rice, incoming A.L.A. president, had urged libra to abandon "traditional neutrality" in their collections. Massachusetts and California library associations fought c sorship.

**Salaries.**—Authorities agreed that increased federal libr salaries (Library of Congress median about $3,100) had g effect. Yet many increases were mere cost-of-living advan Some public libraries graded positions in making increa among which (tables in the *Library Journal*) were Baltim Md.; Buffalo, N.Y.; East Orange, N.J.; Erie, Pa.; Flint, Mic Gary, Ind.; Grosvenor (Buffalo, N.Y.); Hartford, Conn.; L coln, Neb.; New York, N.Y.; New York State, Albany; N ark, N.J.; St. Paul, Minn.; White Plains, N.Y.; Youngstown versity of California and Yale instituted elaborate library classification and pay plans. The Special Libraries associa- began a salary survey of members.

**ibrary Schools.**—In part, low salaries accounted for an an- l shortage of 3,600 recruits, but overemphasis of library niques in training was also a deterrent. The Association of erican Library Schools was advocating revisions which would gnize subject specialization. School headship changes: is S. Shores, dean, University of Florida, Gainesville, Fla. w); Lewis F. Stieg, director, University of Southern Cali- nia, Los Angeles, Calif. Bernard R. Berelson succeeded rence H. Faust as dean, the University of Chicago.

**tates.**—Library agencies (state libraries, extension agen- ) fared well: Illinois, New Mexico, South Carolina and as received notable budget increases. The Tennessee Valley nority (TVA) commenced a two-year survey (Marion A. czewski, director) of nine states: Alabama, Florida, Georgia, ntucky, Mississippi, North Carolina, South Carolina, Tennes- and Virginia. Maryland completed a survey, New York e's continued, New Jersey contemplated one. Many states sed important legislation, chiefly directed at establishing nty library systems, instituting or continuing state aid (total, , or recognizing librarianship. States would be asked to im- nent the A.L.A. national plan, mentioned above; the pro- ed 1949 A.L.A. regional meetings would strengthen state anizations. Theresa C. Stuart (Maine) and Frank L. Tolman ew York state), both leaders in state development, retired.

**Adult Education.**—The New York State survey, commenced 945, found public libraries wanting as adult education agen- . The public library survey by the Social Science Research ncil (mentioned above) would produce a nonlibrarians' esti- te. Yet, libraries were working effectively. They were help- to honour the Freedom Train visits. They continued to ouse such community programs as health drives, veterans' dance, parent education, etc.; libraries in Akron, Boston and waukee were serving labour groups. In 1947, Baltimore's omic Information institute and Louisville's "neighbourhood lege" (classes in library branches) were high spots. About 28 ding public libraries participated in Great Books discussion ups, many more unofficially.

But libraries no longer confined themselves to having printed terials, alone; phonograph records, 16-mm. films, pictures amed and unframed) were lent freely on borrowers' cards. e 290 libraries having $25,000 or more budgets could serve an imated 50,000,000 with audiovisual materials; R. Russell unn (Akron Public library) estimated that an initial $3,700 s needed for films.

**Children's Work and Schools.**—Scarcest among profession- were children's librarians, because of low salaries and unclear ff status, in many instances. Book awards included: the John wbery medal given to Carolyn S. Bailey's *Miss Hickory* iking); the Caldecott medal awarded for Leonard Weisgard's strations to *The Little Island* (Doubleday). The first Caro- e A. Hewins lecture (F. G. Melcher, sponsor) was delivered fore the New England Library association. Several states ded school library supervisors. Mrs. Mary Peacock Douglas, tionally known, resigned from North Carolina's school library pervisorship.

**Buildings and Equipment.**—Municipal bond issues were ap- oved at Baltimore, Md. ($1,500,000 for branches), Topeka, n. ($650,000 for main building) and Newark, N.J. ($781,000 expansion and renovation). Several private colleges nched drives.

Princeton university, Princeton, N.J., laid the cornerstone of $9,000,000 Firestone library; Washington State college, Pull- n, Wash., broke ground for a $2,500,000 building, as did University of California at Los Angeles for a $790,000 wing. Gustavus Adolphus college, St. Peter, Minn., resumed work on its $420,000 library.

BOOKS being sorted at the University of Vienna library after being returned by soviet authorities from the Russian occupation zone in Austria in 1947. The volumes were removed from Vienna by the nazis during World War II

Colby college, Waterville, Me., secured enough equipment to open part of its $500,000 Miller library; University of Nebraska, Lincoln, Neb., moved into its new Love library, completed in 1943 but occupied since by the services. Bowdoin college, Brunswick, Me., and Oberlin college, Oberlin, O., installed distinctive rare-book rooms. Overpopulation forced Union college, Schenectady, N.Y., University of Kansas, Lawrence, Kan., and St. Michael's college, Winooski, Vt., to convert surplus war buildings into reading rooms.

Public libraries did little or no building. Sacramento, Calif., and San Antonio, Tex., converted former residences into young people's libraries. New Orleans, La., moved and converted a war hut into a branch. Many libraries refurbished their rooms with bright paint and informal furniture. Grand Rapids, Mich. installed a fiction room which was promptly dubbed a "fashion room." Philadelphia, Pa., successfully modernized a branch with "commercial" lighting.

Engineering was improving bookmobiles. The Shaw photocharger for circulation work (Library bureau) got off to a good start. Ceiling projectors for books on film (projected books) were available to civilian hospitals. The Veterans' Administration Library service was experimenting with an Elliott addressing machine to produce 300,000 sets of cards for 5,000 titles to send to its 126 hospitals. A new microcard reader was unveiled but not announced. The Carnegie corporation granted funds to the Massachusetts Institute of Technology, Cambridge, Mass., for exploration of scientific mechanical aids to documentation: printing, photoreproduction, sound recording and visual presentation.

**Publications.**—Notable typographical improvement was made in library publications: the National Publicity council placed the New York Public library's 1946 annual report among the six best reports published during 1947 in the U.S. Among new serials, Harvard library's *Bulletin* was outstanding.

**Gifts and Collections.**—The year's dramatic event was the $1,000,000 surprise gift from John Deferrari, former fruit peddler, to the Boston Public library. The Abraham Lincoln papers at the Library of Congress, opened 21 years after the death of Robert Todd Lincoln, enhanced historical scholarship. The A. S. W. Rosenbach collection of early children's books went to the Free library of Philadelphia. The *Bay Psalm Book,* auctioned for $151,000, went from friends to Yale university. Municipal archives were transferred to New Orleans Public library.

(*See* also AMERICAN LIBRARY ASSOCIATION; SOCIETIES AND ASSOCIATIONS.)

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**Army Library Service.**—In the year 1947, the Army Library service continued as a recognized activity of the U.S. army with 800 libraries in the U.S. and overseas. The professional character of the service was maintained by the employment of librarians paid from appropriated and nonappropriated funds.

The library branch of office, chief of special services, department of the army, inaugurated a new service in the spring of 1947. This project consisted of the purchase and distribution of a set of 25 books a month for each overseas library. The titles are selected in advance of publication with books distributed overseas simultaneously with publication dates.

(P. E. P.)

**Navy Library Service.**—The scope and basis of the library service program for naval personnel, including the marine corps afloat and ashore both in the United States and overseas, remained unchanged during 1947 with modifications to meet postwar needs. There remained about 1,600 active libraries ranging in size from a few shelves on small naval craft to station libraries containing many thousand volumes. Large shore station and hospital libraries were administered by approximately 50 professionally trained librarians. These civilian librarians also assisted in organizing and administering shipboard libraries and those at small stations. Each library is kept up to date by regular shipment of current books of technical and professional interest, for general information and for recreational reading with issue of replacements or special material on request. Scientific and technical libraries required for naval research and development programs continued to expand to meet the increased demand for highly specialized research materials. (D. F. DR.)

**Great Britain.**—The public libraries of Great Britain and Northern Ireland issued approximately 300,000,000 vols. during 1947, an issue of about seven books per head of the total population of the country. The demand made upon the resources of research libraries appeared to be equally heavy. The increased demand accentuated the difficulties caused by the inadequacy of accommodation in many libraries, and the economic situation dictated the postponement of new building as well as overdue alterations to existing premises. As a temporary measure many library authorities opened branchés in shop premises, pr
cated buildings or schools, while an increasing number of
or travelling libraries were used to serve outlying di
Loan collections of gramophone records were introduced
first time in a number of public libraries.

The removal of the statutory limitation on rates for
library purposes in Northern Ireland was effected by a cla
the Public Health and Local Government (Administrativ
visions) act (Northern Ireland). In Scotland the rate lim
was still in force, although a campaign was afoot to obt
abolition. On the other hand, the Public Libraries acts
adopted for the county of Argyllshire; the acts were t
operation for the whole of Scotland.

In the British museum, London, an important ne
pointment was that of Sir Henry Thomas, previously kee
the department of printed books, to the newly-created p
principal keeper of the department. There was a change
Bodleian library, Oxford, where J. N. L. Myres was app
Bodley's librarian in the place of H. R. Creswick (resi
Two well-known public librarians, R. J. Gordon of Leec
W. C. Berwick Sayers of Croydon, also retired.

**Europe.**—The first conference of U.N.E.S.C.O., held in
in Nov. 1946, had discussed the program of U.N.E.S.C.C
mulated by its preparatory commission, and the section
cerned with libraries had given priority to the rehabilitat
damaged libraries. Other matters for early attention inc
the wider provision of public or "popular" libraries throu
the world, the removal of barriers to the export and imp
books and periodicals, copyright problems, internationa
change of books and periodicals, and the encouragement
preparation of bibliographies and catalogues as a means of
tating the exchange of bibliographical information. Ten
agreement was reached for the formation of a United N
library. The former Inter-Allied Book centre which was
lished in London for the collection and distribution of
and periodicals for war-devastated libraries was administer
U.N.E.S.C.O. for the greater part of 1947. It was then
the nucleus of a British national book centre, housed i
National Central library; it was hoped that considerab
serves of books and periodicals would be built up to mee
urgent needs of other countries. Following up the work o
Inter-Allied Book centre and that of the American Book c
for the Restoration of War-Devastated Libraries, Inc.
French government gave 5,000 copies each of five F
classics for distribution by U.N.E.S.C.O. and 300 sets of
*clopædia Britannica* were presented by Encyclopædia Brita
Inc.

Further news was received about book losses in Ger
during World War II, and possibly the greatest of thes
curred at the Bavarian state library in Munich, where
than 500,000 volumes were destroyed, including special c
tions of some fame. It was, however, presumed that the fa
collection of incunabula had been evacuated and was ther
saved. An estimate of the total losses of learned librari
Germany is 15,000,000 volumes, while the popular lib
(*Volksbüchereien*) lost something between 5,000,000 and
000,000 books. The *Deutsche Bücherei* at Leipzig had reco
most of its previous holdings and it was estimated that t
brary now consisted of about 2,000,000 vols. The *Oeffen*
*Wissenschafliche Bibliothek* is the title which was given
new public scientific library in Berlin, formed by combinin
*Preussische Staatsbibliothek* and the library of the *Techn*
*Hochschule.* The serious war damage to the Bulgarian nat
library in Sofia, one of the largest in the Balkans, which
nearly completed at the outbreak of the war, was repaired
Greece, steps were being taken towards the organization

blic library service for the whole of the country in the Greek tional library. Professional library training was initiated in eece.

A further sign of the resumption of normal library activity the continent of Europe was given by the meeting of the mmittee of the International Federation of Library Associans in Oslo in May 1947, where 18 countries were represented more than 60 delegates. This was the first meeting of the mmittee since 1939 and was largely concerned with reviewing ports of work carried out under difficult conditions during war years by the *sous-Commissions,* and with planning for future. The conference also served as a valuable opporiity for co-operation between the International Federation d U.N.E.S.C.O. (D. C. H. J.)

**bya:** *see* Italian Colonial Empire.

**e, Trygve** (1896– ), Norwegian statesman and United Nations official, was born July 16 in Oslo. After aduating from Oslo university law school in 1919, he became cretary general of the Norwegian Labour party. Lie was juse minister in the Nygaardsvold cabinet in 1935 and minister commerce in 1939. After the Germans invaded Norway in 40, he joined the Norwegian government-in-exile in England; was first minister of shipping and supply and later foreign nister. On Feb. 1, 1946, Lie, who was Norway's delegate to e United Nations, was elected secretary-general of the Secur- council of that organization.

In his statements on world affairs in 1947, he pleaded for return to the spirit of Yalta and warned that "chaos and ends suffering" would be the world's lot unless the great Allied wers worked together in the postwar era with the same spirit co-operation that marked their wartime alliance. In his speech sing the second regular general assembly session, Nov. 29, urged greater co-operation among the big powers.

**iechtenstein.** A small principality on the eastern frontier of Switzerland. Area: 61 sq.mi.; pop. (cens 1941): 11,138. Capital: Vaduz (pop. 2,020). Language: German; religion: mainly Roman Catholic. Ruler: Prince Franz sef II.

**Education.**—(1943): schools 62, scholars 1,701.

**Finance.**—Revenue (est. 1946) Fr.2,693,760; expenditure (est. 1946) .2,809,377; public debt (1945) Fr.2,669,615. Currency: Swiss franc. xchange; 1 franc = 23.4 U.S. cents.

**Foreign Trade.**—In customs union with Switzerland. According to the itish board of trade, imports and exports to and from the United Kingm (1947, first eight months) were: from Liechtenstein £156,837; to echtenstein £115.

**ife Insurance:** *see* Insurance.
**ife Span:** *see* Birth Statistics; Death Statistics; Infant ortality; Suicide Statistics.
**ighting:** *see* Electrical Industries.

**ilienthal, David Eli** (1899– ), U.S. government official, was born on July 8 in Morton, l. A graduate of De Pauw university in 1920, he studied law Harvard university. In 1933, President F. D. Roosevelt amed him director of the newly-created Tennessee Valley uthority and in 1941 he became chairman of TVA. He was so a consultant with the atomic project at Oak Ridge, Tenn. 1946, he headed a committee whose report to the state deartment formed the basis for the U.S. proposals for establishent of a United Nations Atomic Energy commission.

Pres. Harry S. Truman's nomination of Lilienthal in October 1946 as chairman of the new U.S. Atomic Energy commisson provoked a hot political fight in the senate that split party lines. Opposition to his appointment was led by Senator R. A. Taft, Republican leader (who felt Lilienthal was "too soft" toward Russia) and Sen. K. D. McKellar, Democrat, of Tennessee (who had long feuded with Lilienthal over the latter's refusal to grant patronage deals in TVA). Sen. A. H. Vandenberg headed the defenders of the former TVA chairman. Following protracted debate, Lilienthal finally was confirmed on April 9, 1947, by a 50–31 vote. After being installed as chairman of the new body, he upheld vigorously the administration policy that the U.S. would continue to develop atomic weapons until a foolproof system of world atomic controls had been established.

**Lime.** The production of lime in the United States increased from 5,920,600 short tons in 1945 to 5,990,700 tons in 1946, including 4,344,300 tons of quicklime and 1,648,400 tons of hydrated lime. Reduced industrial demand made available the needed increase in building lime, without much advance in production. (G. A. Ro.)

**Limes:** *see* Fruit.
**Limestone:** *see* Stone.

**Linen and Flax.** While some recovery was made from the disruption caused by World War II, the flax and linen industry in 1947 was still snarled in the uncertainties of industrial dislocation, new farm interests and difficult labour conditions. The U.S.S.R., principal source of flax prior to World War II, indicated that it might manufacture its own linens and sell the finished product, rather than the flax, thus removing the largest prewar supplier of raw material to the linen-weaving countries. The 1947 acreage of flax in the Soviet Union was estimated at 3,211,000, with a prospective yield of 400,000 tons of flax, compared with a planting of 2,717,000 ac. in 1946 with a yield of 240,000 tons.

In Northern Ireland, traditional home of linen goods, the industry was rapidly disintegrating, although organizations of linen weavers were making valiant efforts to rebuild it. Flax acreage in 1947 was about 18,000, instead of the 70,000 that the industry estimated were needed. Farmers found greater profits in food crops.

Exports of linens from the United Kingdom for the first ten months of 1947 were as follows, in thousands of square yards:

| | |
|---|---|
| United States | 9,077 |
| Australia | 4,396 |
| South Africa | 2,368 |
| Argentina | 1,996 |
| New Zealand | 1,975 |
| All others | 18,191 |
| Total | 38,003 |

The average earning of all workers in the flax-spinning and linen industry was 58*s* 11*d* a week in April 1947—or 97% more than 1938 rates.

In Belgium, the scutching mills in the Lys valley continued to serve as the processing machinery for flax straw grown in France and the Netherlands. Production in 1947 averaged 975 metric tons per month. Weaving mills found it difficult to operate at full capacity, and in November operations were down to 25%. Production of linens was at an average monthly rate of 849 metric tons in 1947, compared with 663 metric tons in 1946 and 753 metric tons in 1938. Lack of skilled workers was still a problem, and few apprentices had been trained during World War II. Labour-saving devices were being employed in an effort to offset the shortage of personnel.

In Eire, the 1947 flax acreage was estimated at from 17,000 to 18,000, continuing the decline from wartime levels. Up to July 31, 1947, 3,792 long tons of flax had been sold, compared with 5,402 in the same period of 1946. The British ministry of supply was the sole customer, and future maintenance of flax acreage was said to depend largely on continuation of price inducements from Britain. Production of linen yarn and woven fabric was negligible.

In Czechoslovakia, the first four months of 1947 saw a substantial revival in the linen industry. The 1947 flax acreage was expected to be 61,780, an increase over that of 1946, despite continued labour shortages.

Egypt's war-born flax industry continued to decline in 1947. The 1945–46 planting was the lowest in several years—3,600 ac. Two new flax-spinning mills which began operation during the latter part of 1946 were working largely on imported short-cut staple fibre. Since Oct. 1946, export of fibre and tow had been under government control.

Polish flax farmers planted 21,000 ac. in 1947, an increase of 33% more than 1946, although exports (120 tons) in the first 3 mo. of the production year (Oct.–Dec. 1946) were only about one-fifth of that for the same period of 1945. Sweden planted about 11,000 ac. in flax for 1947, twice the acreage of 1946, but none of the crop was exported.

A comprehensive survey of the German linen industry was issued in Oct. 1947, by the U.S. department of commerce, in which special emphasis was laid on the possibilities of the material known as "Flockenbast," prepared on cotton-spinning machinery from flax. The finest of its fibres are coarser than Irish dam-retted flax after wet spinning. No statistics of production were given.

In the United States, the department of agriculture offered a federal crop insurance program to 232 counties in the major flax-producing areas, including Minnesota, North Dakota, Kansas, Montana and Iowa. Imperial county in California was listed as a potential producer in 1949.

Only the flax grown in Willamette valley, Oregon, is considered suitable for spinning fibre. Between 8,000 and 10,000 ac. are grown annually, with a yield of about 350 lb. per acre. Thirteen mills were operating in that area by 1947, with a fixed investment in excess of $1,250,000. Weaving of linen in the United States was carried on by eight or ten companies located in New York, Massachusetts, Rhode Island, Pennsylvania, New Jersey, Minnesota and Oregon. Government loans enabled flax growers to continue during the war years, but in 1947 the accumulated loans covered more than 1,000,000 lb. of domestic flax fibre, and the domestic support loan was higher than the open market price on competitive foreign flax fibres.

(I. L. Bl.)

**Lions Clubs, International Association of:** *see* Societies and Associations.

**Liquor Control:** *see* Liquors, Alcoholic.

## Liquors, Alcoholic.

The postwar year of 1946 and the first few months of 1947 saw a shift in emphasis within the beverage distilling industry from all-out war alcohol production to a limited resumption of beverage spirits output. The period thus covered, therefore, was a transitional one for the industry, especially in view of the fact that after only nine months of relatively normal production, another period of restriction was facing distillers of the U.S.

Responding to the urgent need for industrial alcohol, both at home and abroad, the beverage distilling industry began voluntarily to convert its production facilities to war use during the latter part of 1941. In Oct. 1942, the War Production board halted the manufacture of whisky, gin and beverage neutral spirits completely. During this period until the end of the war, the beverage distillers turned out approximately 691,000,000 gal. of war alcohol for use in making munitions, synthetic rubber, hospital supplies and essential civilian and industrial ucts. This represents almost half of the total amount of trial alcohol manufactured by all producing sources.

Another activity of the beverage distilling industry deve during World War II was its contribution to the producti penicillin and other antibiotics. This addition to the r output has since been further developed and enlarged.

In addition, the beverage distilling industry continued t duce high protein animal feed as by-product of distilling ess. During distillation, the nutrient value of the grain creased through the addition of yeast proteins, vitamins fats. According to the department of agriculture, this a feed played an important role in the tremendous increa meat, chicken and egg production during the war over p levels. In the fiscal year ending Oct. 30, 1947, distillers duced a total of 409,600 tons of dried distillers grains, a crease of 20% over the previous year and an increase of a 40% over the 1937–42 average of 224,000 tons per year.

From 1942 until V-J day in Aug. 1945, distillers were mitted to produce potable alcohol during only three one-m periods when supplies on hand were at sufficiently satisfa levels to warrant the release of distilling facilities from work. The revocation of the WPB control order at the er Aug. 1945, did not bring with it a return to normal produc Basing its action on increased demands for grain to mee need for export to grain-deficient countries abroad, the de ment of agriculture issued new restrictions on grain alloca to the industry. The use of wheat was banned, rye use limited, and distillers were permitted the use of corn grades and sample only. Distilleries were allowed to operate for ous restricted periods ranging from three to ten days mon

Production of beverage spirits proceeded under severe ernment restrictions for the better part of 16 months follo the close of the war.

Not until Dec. 1946, did distilled spirits production rea relatively normal level. At that time the department of agr ture, in the face of record crops of corn and other grains, l its restrictions to allow distillers unlimited quantities of corr the manufacture of spirits and modified its restrictions on to allow its use to the extent of 6% of the total quantit grains used in any one plant in a given month.

Whisky production increased in the last month of 1946 the first few months of 1947, reflecting this move. The in try's concentration on war alcohol production and postwa strictions had severely cut into stocks of aged whiskies and seriously disrupted aging schedules.

U.S. whiskies are aged anywhere from two to eight years fore bottling—the average aging period for most whiskie about four years. Flavour, colour and body develop in a chemical process which involves reactions between substa originally contained in the whisky and others extracted from toasted wood of the oak barrel in which they are stored.

Consumers had continued to be supplied with beverage sp during the war years, although the whisky thus used was being replenished by new production, so that in spite of a tively favourable production year in 1946, net whisky in tories as of Dec. 31 of that year were still well below normal war levels: 327,000,000 tax gal. as against 424,000,000 gal Dec. 1941.

The over-all increase in production during the early par 1947 did effect some improvement in the total supply pict At the end of Sept. 1947, net whisky inventories (after estin ing evaporation and leakage losses) totalled 401,400,000 tax —only 12,100,000 gal. below the prewar level of Sept. 31, 1

Age composition of supplies on hand, however, was still s ously out of balance. As of Sept. 30, 1947, less than 20%

t whisky inventories was more than 4 years old; slightly more in 7% was between 2 and 4 years old and the balance—73% was only 2 years old or less. As a consequence, the industry s forced to conserve its stocks of matured spirits carefully. Withdrawals in 1946 and the first nine months of 1947 were intained on the conservative basis of the war years. During fiscal year ended June 30, 1947, withdrawals of whisky alled 58,822,676 tax gal. and of gin 6,764,660 gal. Withawals of grain neutral spirits were maintained at the high el of the previous year, 99,391,442 tax gal. and were used incipally to make the popular whisky spirit blends.

Production of distilled spirits in the fiscal period ended June , 1947, amounted to: whisky, 167,994,805 tax gal.; gin, 7,359,8 tax gal.; rum, 908,083 gal.; brandy, 40,850,527 gal.

On Oct. 5, 1947, at the request of President Truman, the verage distilling industry agreed to halt production of all in distilled spirits for a period of 60 days, in order to aid food conservation program. Following the short period of atively normal production, after three years of almost comte shutdown, and with aged whisky stocks extremely low, the dustry was in 1947 confronted with the problem of adjusting production program to the world food program. In Dec. 47, the president was granted the power to allocate grain for production of beverage distilled spirits on a temporary basis.

Although total imports of distilled spirits during 1947 dened from levels of the previous year, Scotch whisky imports r the first 9 months of the year showed a marked increase er the same period in 1946—4,531,980 tax gal., as against 17,884 tax gal. in 1946. On May 1, 1947, British whisky tillers were ordered by the minister of food to revise their tios of Scotch whisky released for consumption. It is difficult say to what extent the grain situation would affect whisky oduction in Canada and the United Kingdom. In Aug. 1947 e British ministry of food allocated 150,000 tons of barley to otch whisky producers. The Scotch production target for the 47–48 fiscal year was reported at 38,000,000 gal. as against ,500,000 gal. in 1946. Whisky withdrawals for the home mart were reduced from 50% to 25% of total withdrawals, while locations for export to "hard currency" countries were ineased from 50% to 75% of the total.

Table I.—*Revenues from Alcoholic Beverages*

| | Distilled Spirits | Beer | Wine | Grand total |
|---|---|---|---|---|
| 1941 | $ 558,547,795 | $348,876,726 | $20,008,266 | $ 927,432,787 |
| 1942 | 777,793,659 | 403,436,418 | 33,943,923 | 1,215,174,000 |
| 1943 | 906,378,809 | 515,063,123 | 32,759,793 | 1,454,201,725 |
| 1944 | 1,408,368,230 | 627,458,724 | 47,625,921 | 2,083,452,875 |
| 1945 | 1,661,793,763 | 659,055,927 | 49,073,828 | 2,369,923,518 |
| 1946 | 1,972,860,338 | 642,224,380 | 75,898,249 | 2,690,982,967 |
| 9 months, 1946 | 1,436,492,766 | 479,985,544 | 54,955,527 | 1,971,433,837 |
| 9 months, 1947 | 1,023,026,518 | 533,937,544 | 30,973,407 | 1,587,937,469 |

Federal tax receipts from alcoholic beverages in 1947 constited a major source of government commodity tax revenue. In e first 9 months of 1947, government collections from alcolic beverages totalled $1,587,937,469. Table I shows internal venue receipts from distilled spirits, wine and beer during ch of previous years, as well as for the first nine months of 46–47.

Table II gives data for production, withdrawals and bottling distilled spirits for the fiscal year ended June 30, 1947.

(A. J. Li.)

SCOTCH WHISKY, the largest shipment to arrive in the U.S. after the start of World War II, is shown being unloaded at a New York dock in May 1947

**Liquor Control.**—The year 1947 saw the return of government controls on the use of grain by distillers and brewers. In October, owing to pressing need for grain abroad, the distillers agreed to a voluntary 60 day holiday, ending on Christmas day. The brewers agreed to a 25% reduction in production during that period. These limitations were in response to a request by the Citizens Food committee appointed by President Truman. After the expiration of the holiday, the president, who in the meantime had been given the necessary powers by congress, limited the amount of grain to be allocated to the distillers in Jan. 1948 to 2,450,000 bu.

No limitation on grain for brewers had been announced at year's end.

The argument still raged during 1947 as to whether limitation should be on a historical basis, the amount produced during the period before World War II or on a capacity basis. Of the five big producers, four, National Distillers, Schenley, Distillers-Seagram and Hiram Walker have been big producers after repeal. The fifth, Publicker, formerly a manufacturer of alcohol only, became a big whisky maker after the end of World War II.

The government action came after the big distillers were unable to agree among themselves upon a voluntary method of restriction.

In legislation, little of importance was passed by the federal congress. A feature of 1947 was the adoption by nine states of a mandatory fair trade contract law. This requires the brand owners to name a minimum price at which items of alcoholic beverage may be sold to the consumer. These floor prices are

Table II.—*Distilled Spirits Statistics, Fiscal Year Ended June 30, 1947*

| | Whisky | Gin | Rum (beverages only) | Brandy | Neutral spirits* | Cordials and Liqueurs | Misc. | Total |
|---|---|---|---|---|---|---|---|---|
| duction (tax gallons) . . . . . . . | 167,994,805 | 7,359,998 | 908,083 | 40,850,527 | 99,391,442 | | | 316,504,855 |
| thdrawals (tax gallons) . . . . . . | 58,822,676 | 6,764,660 | 477,734 | 37,987,221† | 99,391,442 | | | 203,443,733 |
| tled output (wine gallons) . . . . . | 166,218,217 | 18,645,945 | 688,860 | 2,835,937 | | 6,702,954 | 439,520 | 195,531,433 |

epresents neutral spirits used in rectification, neither production nor withdrawal figures show volume of neutral spirits actually used for beverage purposes. Production and withdrawal equivalents are best determined by employing neutral spirits used in rectification (for whisky blending, and gin, cordial and liqueur processing).

cludes brandy withdrawn for the fortification of wine.

rce: Prepared by Licensed Beverage Industries, Inc., from data of the alcohol tax unit, bureau of internal revenue, treasury department.

filed with the state authority, and heavy penalties, including suspension and revocation, are imposed upon retailers who make sales below the floor prices. The states which adopted this system were Arizona, California, Georgia, Illinois, Kentucky, New Jersey, New Mexico, New York and Oregon.

Some states also adopted compulsory price posting laws which require suppliers to post their prices to retailers, and forbid any discrimination. The mandatory trade law met with considerable opposition, but seemed to be working well. The principal argument against it was that it deprives the customer of the lowest price which might result from free competition. The proponents argue that it protects the small operator from the competition of the large department store or chain which could use particular items as a loss leader, and that the neighbourhood store price was the true one. The system provides opportunity for amendment of prices by the brand owner, in many cases the changed price going into effect 30 days after filing of the amendment with the control body.

The collection of taxes, federal and state, on alcoholic beverages fell off during 1947, as did the consumption of alcoholic liquor. The high cost of living left little money for liquor in the average family budget. The demand for beer, however, did not fall off and collection from this source remained about the same as in 1946.

In spite of strenuous efforts by industry representatives to secure passage of legislation lowering the tax of nine dollars a proof gallon on distilled spirits, congress took no action. The legislators were apparently unmoved by the argument that the existing tax represented the point of diminishing returns, and that over-all collections were being reduced. None of the states reduced the tax rate and seven of them increased it.

Arkansas raised the tax per gallon from $1.50 to $2.52, Massachusetts from $1.45 to $2.00, Minnesota from $2.00 to $2.50, Nebraska from $0.80 to $1.00, Nevada from $0.60 to $0.80, New Jersey from $1.00 to $1.50 and Tennessee from $1.00 to $2.00. Idaho, Iowa, Kansas, Massachusetts, Nebraska, North Carolina, Pennsylvania, South Carolina, Tennessee, West Virginia, Wisconsin raised the tax rates on beer, which averages about four cents a gallon. Six states raised the tax rates on wine.

Existing federal regulations on labels were found to need considerable revision. In the fall of 1946 open hearings on labels were held in Washington, D.C., before the alcohol tax unit. Decisions were expected in 1947, but did not materialize. These were expected to be made early in 1948. One of the principal matters in dispute was the labelling of liquor made in the U.S., claimed to have the attributes of Scotch. It now must be labelled "Scotch type." Those who claimed it to be the equal of the product made in Scotland wanted the right to label it American Scotch, or a similar name. The Scotch manufacturers and importers wished to forbid the use of the phrase "Scotch type."

Local option elections were held in many states. The national picture was little changed, but in New York, Pennsylvania, Ohio and Illinois, the drys made substantial gains, enlarging the area in which the sale at retail of alcoholic liquors is prohibited. (*See* also Brewing and Beer; Intoxication, Alcoholic; Wines.)

(M. Lb.)

## Literary Prizes.

The literary prizes for the year 1947 were as follows:

Abingdon-Cokesbury Award.—$7,500 each to John Wick Bowman for *The Religion of Maturity* and to Georgia Harkness for *Prayer and the Common Life*, books chosen by the judges as those offering "the greatest good for the Christian faith."

Academy of American Poets.—$5,000 fellowship to Ridgely Torrence.

American Academy and National Institute of Arts and Letters.—$1,000 each, arts and letters grants, were made to 6 writers: Nelson Algren, Eleanor Clark, Lloyd Frankenberg, Robert Lowell, Elizabeth Parsons and James Still.

Anisfield-Wolf Award for the best book in the field of race r $1,000 each to Sholem Asch for *East River* and to Pauline R. K *Latin Americans in Texas.*

Brazilian Literary Prize (Pandia Calogeras Prize).—$1 Samuel Putnam for his translations of Brazilian classics, *Rebellio* *Backlands* and *The Masters and the Slaves.*

John Burroughs Medal for the most outstanding piece of writing to Theodora Cope Stanwell-Fletcher for *Driftwood Valle*

Commonwealth Club of California.—Gold medal for gen erature to Royce Brier for *Western World;* gold medal for sch and research to John A. Crow for *The Epic of Latin America* medals to George Hedley for *Christian Heritage in America,* to M Conrad Buff for *The Big Tree,* to George E. Mowry for *Theodore* *velt and the Progressive Movement,* to E. H. Staffelbach for *T* *Oregon* (juvenile), to Edward Weismiller for *The Faultless Shore* (

John Day Company's Foreign Service Book Contest.—$1 Charles F. Knox, Jr., for his manuscript, *Thirst,* a novel about ra in South America.

Dodd, Mead Faculty Book Fellowship.—$2,000 award i fiction to a member of the faculty of a U.S. or Canadian coll Leo Gurko of Hunter college for *The Angry Decade;* Red Badge tive Story Prize to Helen Steers for *Death Will Find Me;* Int legiate Literary Fellowship, $1,200 to Frederic Morton f *Hound.*

Friends of American Writers.—$750 to a midwestern aut Walter Havighurst for *Land of Promise: The Story of the No* *Territory.*

Good Housekeeping.—$10,000 contest to encourage the wri magazine fiction by faculty members of colleges and universities; to Allan Seager of the University of Michigan, $3,000 to Mary Chase of Smith college, $2,000 to I. J. Kapstein of Brown univer

Guggenheim Fellowships were 122 in number and amoun $310,000. Of these 19 went to writers: Ralph Bates, Elizabeth Gwendolyn Brooks, Richard V. Chase, Jr., Eleanor Clark, Shirle ham, Joseph Kinsey Howard, John Richard Humphreys, Alfred Roger Lemelin, Robert Lowell, Jeannette Mirsky, Isaac Rosenfeld, M. Rosenthal, Katharine Lawrence Stapleton, Lionel Trilling, Turner, Robert Penn Warren, Edward Weismiller.

O. Henry Memorial Award Prize Stories.—$300 first prize t Bell Clayton for *The White Circle;* $200 to Eugene L. Burdick fo *Camp on Maui;* $100 to Elizabeth Parsons for *The Nightingales* $100 to Robert Lewis for *Little Victor,* a first published story.

Houghton Mifflin-Eyre and Spottiswoode Fellowship.— Anglo-American award; $2,400 U.S. fiction award to Eugene Burd a contemporary novel; $2,400 U.S. nonfiction award to Arthur for a projected biography of F. Scott Fitzgerald; £500 British award to Anthony West, son of Rebecca West. No British non award was made.

Laetare Medal.—Awarded annually by the University of Notre to an outstanding U.S. Catholic layman, to William George Bruce, dent of the Bruce Publishing company.

Lewis and Clark Northwest Award (Dutton).—$3,000 f best manuscript submitted by an author from Washington, Oregon, Montana or Alaska, to Ralph Freedman of the University of Wash at Seattle for *Divided*, a first novel.

Metro-Goldwyn-Mayer Novel Award.—A semiannual awa $150,000 with an additional $275,000 contingent upon sales, a bon January Book-of-the-Month club selection, to Ross Lockridge, J *Raintree County.* A special award to a second selection was m Maritta M. Wolff for *About Lyddy Thomas;* the December awa Esther Forbes for *The Running of the Tide.*

Moody Press Distinguished Christian Fiction Award.—$ for a religious novel, to Leonard Lovdahl for *Sun in the Street,* novel and a story of the French Revolution.

Mystery Writers of America Award.—For the best first crime to Helen Eustis for *The Horizontal Man.*

New York Drama Critics' Circle Award.—For the best U.S of the season, to Arthur Miller for *All My Sons;* for the best f play of the year, to Jean-Paul Satre for *No Exit.*

Norton Medical Award.—$5,000 offered by W. W. Norton for a book about medicine and the medical profession for the la to Dr. Bertram M. Bernheim for *A Surgeon's Domain.*

Parents' Magazine Medal.—For an outstanding book for pa to Dr. Benjamin Spock for *The Commonsense Book of Baby and* *Care* reprinted by Pocket Books under the title *Pocket Book of Bab* *Child Care.*

Eugene P. Saxton Memorial Trust.—Literary fellowships aw to the following writers: Elaine C. Battis, Max Steele, Marjorie St John Watson, Sara de Ford, Sheila Alexander, Edmund S. Glenn.

Shelley Memorial Award.—To a poet for outstanding achieve won by Rolfe Humphries, author of *Forbid Thy Ravens.*

Constance Lindsay Skinner Award.—A bronze plaque present the Women's National Book association for outstanding accomplish by a woman in the book world; to Emily P. Street, secretary an rector of sales and advertising at William Morrow & Co.

United Services Book Contest.—Sponsored by Thomas Y. Cr Co., Columbia Pictures and George G. Harrap Co. of London to dis literary talent in the armed services of the United Nations; $1,000 to Rowland Barber for *John 29;* F. A. Nauheim for *Behold the Up* Raibeart Elder for *The Cruel Land;* David A. Evans for *Valley of S* Everard Johnson for *The Squadron;* William Howard Jones for *Signs and a Hangover.*

Whittlesey House-Science Illustrated Award.—$10,000 f book on a scientific subject written for the layman to Dr. Clyde K hohn of Harvard for *Anthropology and the World Today: The Me* *and Use of the Whole Science of Man.*

**Children's Books.**—Caldecott Medal.—For the most distinguished ture book to Leonard Weisgard for his illustrations for *The Little I* by Golden MacDonald.

hild Study Association.—An honorary award to a book which ; with contemporary problems in a realistic manner, to Howard Pease *Heart of Danger*.

lia Ellsworth Ford Foundation Award.—To Irwin Shapiro for *Magarac and His U.S.A. Citizen Papers*, an original story of the idary hero of the U.S. steel mills, Joe Magarac.

erald Tribune Spring Book Festival.—Three prizes of $200 each the best book for younger children; to Marie Hall Ets, author and trator of *Oley: The Sea Monster;* middle age group to Claire Huchet op for *Pancakes-Paris*, illustrated by Georges Schreiber; teen age p to William Pène du Bois, author and illustrator of *The 21 Balloons*.

nior Book Awards.—Six medals and 6 certificates presented by the ' Clubs of America to the books which were the favourites of boys boys' clubs all over the U.S. Medals to Jim Kjelgaard for *Big Red;* alter Farley for *The Black Stallion Returns;* to Charlie May Simon *oe Mason, Apprentice to Audubon;* to Enid Blyton for *Mystery Is-*; to Joseph Leeming for *Fun with Puzzles;* and to Leon W. Dean for *over Champlain*. Certificates to Paul Corey for *Five Acre Hill;* to nd Silliman for *The Scrapper at Camp Blazing Rock;* to Margaret ohnson and Helen Lossing Johnson for *Vicki, A Guide Dog;* to old H. Strickland for *Juggernaut of the Rangers;* to Morris Markey *Vell Done!* and to William Marshall Rush for *Wheat Rancher*.

hn Newbery Medal.—To Carolyn Sherwin Bailey for *Miss Hickory*.

oung Readers' Choice Award by the Pacific Northwest Library ciation, to Robert McCloskey for *Homer Price* (1943).

**nada.**—Governor-General's Awards, silver medals, to Winifred brick for *Continental Revue* (fiction); to Robert Finch for *Poems* try); to A. R. M. Lower for *Colony to Nation* (academic non-n); to Frederick Philip Grove for *In Search of Myself* (creative iction). The Lorne Pierce Gold Medal for Poetry, issued by Royal Society of Canada, to Dorothy Livesay. The first annual Lea- Memorial Medal for Humour to Harry L. Symons for his book *way Melody*. The first annual Literary Award of the Imperial er Daughters of the Empire to A. R. M. Lower for *Colony to on*. The first annual Canadian Library Association Medal for outstanding Canadian juvenile to Roderick L. Haig-Brown for *Star- Valley Winter*. The Ottawa Drama League Workshop's National ywriting Prize to Robertson Davies for a one-act satire fantasy, *at Breakfast*.

**reat Britain.**—The leading awards and prize winners in 1947 were as ws: Alexander Prize, awarded to June Milne for an essay on *The omacy of Dr. John Robinson, England's Accredited Representative he Court of Charles XII of Sweden, 1697–1709;* Atlantic Awards Literature, £200–£300, third list of awards, June 1947, Robert idge Caldwell, Maurice Carpenter, Sid Chaplin, Michael Early Fer- Corley, David Emery Gascoyne, William Glynne-Jones, William ey Graham, James Findlay Hendry, Richard George Kitto, John rice Lindsay, Laurence Stanley Little, Thomas Joseph Douglas donald, Bryan Morgan, John Clement Prichard, Derek Stanley Sav- Christopher Samuel Youd; fourth list of awards, Nov. 1947, John lerick Burke, Michael St. John Packe, Peter Ratazzi; James Tait ck Memorial Prizes, one for fiction and the other for biography, oximately £250 each: biography, Richard Aldington for *Wellington;* on, George Oliver (Oliver Onions) for *Poor Man's Tapestry;* Black-l Essay Prize, awarded to L. M. Stirling for an essay on *The Use Value of Broadcasting as an Aid in Primary and Secondary Educa-*; Rose Mary Crawshay Prize, awarded to Marjorie Nicolson for *ton's "Opticks" and the Eighteenth Century Poets;* William Heine-n Foundation for Literature Award, awarded by the Royal ety of Literature, value up to £200, awarded in 1946 to Victoria kville-West for her poem *The Garden*, and to Bertrand Russell for *History of Western Philosophy;* the Hodder and Stoughton Bur- Scheme, full bursaries for three years were awarded in 1946 to rence Alloway, George Barker, George Fraser, Walter Marsden, ry Reed, William Robson and William Sansom, and the eighth bur- was awarded £100 a year each for 3 years to John Bayliss, Wolf kowitz and Geoffrey Parsons; King's Gold Medal for Poetry, no rd in 1947, the last award was made in 1940 to Michael Thwaites *Milton Blind*—the presentation to Thwaites, a young Australian poet, made by the poet laureate, John Masefield, at Oxford on Jan. 4, 7; Library Association Carnegie Medal, awarded to the British ter of an outstanding book for boys and girls, last awarded in 1946 Elizabeth Goudge for *The Little White Horse*, illustrated by C. Walter dges; John Llewelyn Rhys Memorial Prize, awarded from the rary earnings of this author, who was killed in action in 1940, for a k by a citizen of the British empire less than 30, annual value ap-ximately £25, awarded to Anne-Marie Walters for *Moondrop to Gas-y;* Sunday Times Book Prize, first awarded in 1947 to Sir Osbert vell for *The Scarlet Tree;* United Services Book Contest, in the 5–46 contest 6 fellowship awards of £250 each were made to the owing authors: Roland Barber, R. E. Elder, David Evans, T. E. nson, William Howard Jones and F. A. Neuheim. Details of the 6–47 contest, which closed at the end of June 1947, had not been ounced by the end of the year.

Other important prizes which were not awarded in 1947 included the rmsworth Award, the Hawthornden Prize, the Felicia Hemans ze and the Stock Prize.

**rance.**—City of Paris Prize to Leon-Paul Fargue for *Pedestrian in is* (*Le Piéton de Paris*). Denyse Clairouin Prize.—50,000 francs Marie Canavaggia for her translation into French of Nathaniel Haw-rne's *Scarlet Letter*. Fémina Prize to Michel Robida for *Le Temps la longue patience* (1946 award). To Gabrielle Roy for *The Tin Flute* 47 award). Franco-Swiss Prize.—50,000 francs to Marcel Ray-nd for *Paul Valéry et la tentation de l'esprit*. Goncourt Prize (1946) Jean Jacques Gautier for *Histoire d'un fait divers;* the 1947 prize to a Triolet for *A Fine of 200 Francs*. Grand Prix Littéraire de lgérie to J.-B. Canavaggia for *Nous, les élus* (*The Chosen Ones*). er-Allié Prize to Jacques Nels for *Poussière du temps*. Théo-raste Renaudot Prize to Jules Roy for *La Vallée heureuse*.

(B. Gm.; X.)

**Literature:** *see* American Literature; Book Publishing; Canadian Literature; English Literature; French Literature; German Literature; Italian Literature; Literary Prizes; Nobel Prizes; Pulitzer Prizes; Russian Literature; Spanish-American Literature; Spanish Literature.

## Lithium Minerals.

The production of lithium minerals in the United States increased from 2,446 tons in 1945, containing 274 tons of $LiO_2$, to 3,065 tons in 1946, containing 323 tons of $LiO_2$. The demand for amblygonite, lepidolite and spodumene was declining, as more use was being made of the lithium salts recovered as by-products in potash operations. (G. A. Ro.)

## Lithuania.

A Baltic country of northeastern Europe, north of Poland; in 1941 it became a part of Germany's "Ostland," and in 1944 was reconquered by the Red armies and re-established as a republic of the U.S.S.R. Area, 22,958 sq.mi. (1940); pop. (Jan. 1, 1940) 2,879,070. Chief cities: Vilnius (Vilna, cap. 1942, 182,000); Kaunas (1941 est. 120,000).

**History.**—Lithuania's independence, won after World War I, was short-lived. In 1940 the country was incorporated into the U.S.S.R. as one of the constituent republics. In 1941 it redeclared independence, but the invading Germans allowed the state to function for only seven weeks. In 1944–45 the Russians drove out the Germans and reintegrated Lithuania into the soviet system.

Throughout these kaleidoscopic changes many of the pre-1940 Lithuanian diplomats remained at their posts abroad and preserved the recognition of the western states for the old democratic regime. Up through 1947 the United States had not yet recognized the Russian claims to the Baltic countries. In May, however, the British recognized the *de facto* control established by the U.S.S.R. and this might be a first step to *de jure* recognition. The Lithuanians continued nevertheless to sabotage and oppose the Russians at home and to appeal for help abroad. Large numbers of Lithuanians lived in the United States and supported a vigorous and persistent propaganda campaign.

On one significant matter the Lithuanians, Latvians and Estonians acted together. For the thousands of "displaced" Baltic peoples in Germany a university was set up at Pinneberg, near Hamburg in Germany. This school without money or traditions, established in Jan. 1946, soon had about 200 professors and more than 1,000 students, organized laboratories and a library, and carried on a vigorous educational program under the name of Baltic university. But then it was forced to go under the name of a D.P. university study centre and to prepare students for entrance into German universities. Stung by this turn of events, the faculty appealed to the U.S. to be allowed to relocate across the Atlantic and carry on from there. Quoddy Village at Eastport, Me., was being sought from the War Assets administration.

The Lithuanians in the United States, during 12 months of 1946–47, sent clothing, food and other supplies to their compatriots in western Europe to a total value of $670,000, and planned to double the aid to $1,400,000 for 1948. More than half of this amount was earmarked for resettlement of 15,000 Lithuanian D.P.s.

Appeals were made to Pres. Harry S. Truman and to the United Nations to aid in the re-establishment of an independent Lithuania, urging particularly that steps be taken quickly to halt genocide—the extermination of a whole people. It appeared that thousands of Lithuanians were being moved into the interior of the U.S.S.R. while Russians were then moved into their homes and farms and workshops in Lithuania—all for the purpose of establishing a trustworthy communist-Russian population on the western border of U.S.S.R. (F. D. S.)

**Liver Disorders:** *see* Alimentary System, Disorders of.

**Livestock.** The total number of livestock on United States farms, excluding poultry, continued to decline from the peak of 1944, and on Jan. 1, 1947, was 3.7% below a year earlier and 12% below the record of Jan. 1, 1944. This decline continued through 1947 in the case of sheep and cattle. The causes of the decline, in the face of high prices, were different with each class of livestock. Sheep raisers complained of loss of herders to other employment and the competition with cattle raising for pastures. The number of stock sheep on Jan. 1, 1947, was the smallest since records began in 1867. The eastern states had fewer flocks, and numbers were down in the range states. High prices for lambs and wool failed to check the decline.

*Livestock on U.S. Farms, Jan. 1, 1947, 1946 and 10-Yr. Average, 1936–45*
(In thousands of head)

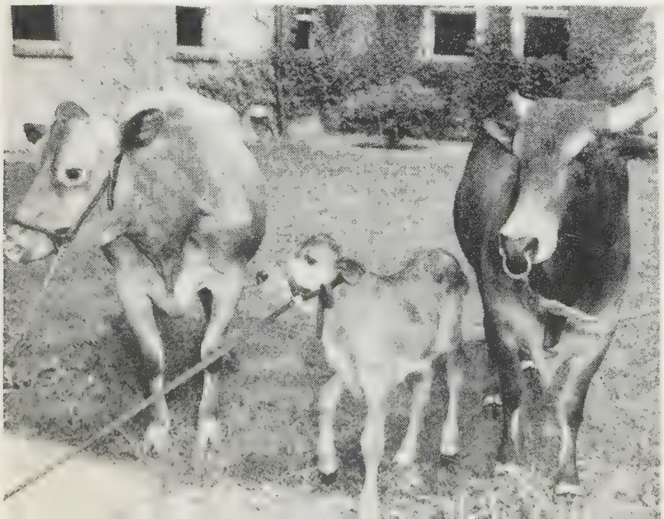
| | 1947 | 1946 | 10-Yr. Average |
|---|---|---|---|
| Horses | 7,251 | 8,053 | 10,259 |
| Mules | 2,773 | 3,010 | 3,951 |
| Cattle | 81,050 | 82,434 | 73,342 |
| Milk cows | 26,100 | 26,695 | 25,823 |
| Sheep | 38,571 | 42,426 | 51,909 |
| Hogs | 56,901 | 61,301 | 57,367 |
| Chickens | 475,442 | 530,203 | 461,439 |
| Turkeys | 6,632 | 8,493 | 6,915 |

Prices of livestock began to advance in early 1947 reaching a temporary high point in March; they advanced again in August and despite the large slaughter, made new high records in September. Slaughter of cattle and calves was greater than that of 1946, while hog slaughter was about the same and sheep and lambs lower. Vigorous consumer demand for meat kept prices of all classes above those of the previous year and more than twice the average of 1936–45. The 1947 beef output was the greatest on record; total meat production was about the same as in 1946. The number of livestock fed in feed lots was about a third less than a year earlier.

The total estimated value of livestock was 25% larger on Jan. 1, 1947, than a year earlier, or about $12,000,000,000, compared with $6,600,000,000 average for 1936–45.

The world's livestock numbers were estimated to have risen during 1946. Increases in Asia, Europe and South America offset decreases in North America and Australia. Argentina reported little change. Imports of Mexican cattle were barred by
the outbreak of foot-and-mouth disease. Most of these
were feeder cattle amounting to about 400,000 head a
(*See* also Agriculture; Cattle; Hogs; Horses; Meat
try; Sheep.) (J. C.

FIRST JERSEY-SINDHI crossbred calf born in the U.S., shown with his Jersey dam (left) and his sire, a Red Sindhi imported from India by the U.S. department of agriculture to improve dairy stocks in southern states. The calf was born in July 1947



**Livestock Shows:** *see* Shows, Animal.

**Local Government:** *see* Municipal Government.

**London.** The great occasion of the year 1947 in Lon
the marriage at Westminster abbey on No
Princess Elizabeth, heiress-presumptive to the British
and Prince Philip, duke of Edinburgh, son of Prince An
Greece and Princess Alice, formerly Alice of Battenberg
engagement had been announced on July 9. Vast and e
astic crowds gathered to see the wedding procession, wh
of a richness and pageantry that had not been seen si
coronation celebrations of 1937. The archbishop of Can
conducted the service, assisted by the archbishop of Yo
the dean of Westminster. Many of the royal families of
arrived in London to attend it.

London's social year was, largely because of restricti
banqueting, undistinguished, but the Lord Mayor's sho
held as usual in November and proceeded through the ci
Frederick Wells was chosen as the new lord mayor. In
music, ballet and theatre much effort was made to return
peacetime activities. National opera was established at
Garden with a revival of Henry Purcell's *The Fairy Que*
the autumn there was the almost unprecedented presenta
Covent Garden within a few weeks of three operas by a n
English composer—Benjamin Britten's *Peter Grimes, R*
*Lucretia* and *Albert Herring*. In the autumn, too, the
Opera of Vienna, accompanied by the Vienna Philha
orchestra visited Covent Garden; symphony orchestras
Paris, Amsterdam and Turin also appeared in Londo
Thomas Beecham formed his sixth orchestra, the Royal
harmonic, which gave the historic society of that name i
orchestra after many years without one. Malcolm Sarge
knighted for his services to music. Ballet had a record
larity, especially the Sadler's Wells company installed at C
Garden and the De Basil ballet from the U.S. The new
*Symphonic Variations* by Frederick Ashton, to music by
Franck, was outstandingly successful. The theatre also
good year with both British and U.S. plays. The U.S. m
production *Oklahoma!* instantly conquered London.

Town planning continued to cause widespread municip
tivity. Although London attracted 40,000 new reside
month, a committee representing 150 local authorities a
on attempting to limit London regional population to 1
000. To spread out the population and industry, the g
ment decided to build new towns of 60,000 people ea
Stevenage, Hemel Hempstead, Harlow and Crawley, and
sibly, smaller towns at Meopham and Pitsea-Laindon; a
expand Newbury, Aylesbury, Bletchley, Chelmsford, Wi
Basingstoke and Ashford (Kent). A revised City of L
plan, making "the square mile" a commercial neighbou
with five routes through it for swift traffic was approved b
government, and the first 10-year part of a 30-year scheme
mated to cost £400,000,000 was passed for immediate a
The City corporation took steps to buy compulsorily 272 a
war-bombed sites—about a third of the whole city—for r
struction. The London County council announced in M
immediate development of the Thames south bank bet
Westminster and Charing Cross bridges: government office
10,000 civil servants, a national theatre and a cultural ce
A proposal to build a new electrical power station on the s
bank opposite St. Paul's cathedral aroused angry contro

STRUCTION WORK in progress on the new House of Commons, designed ›ir Giles Gilbert Scott, which was being erected at Westminster, London, 947

the cabinet did not revise its decision. London County ncil announced an 18-year £187,000,000 plan to build and ip a network of comprehensive schools ranging from nursery ools to high schools, taking from 1,250 to 2,000 pupils each. ernment economy instructions caused a slowing-down of se building in London. By the end of September, London built 17,660 permanent and prefabricated dwellings, includ- rebuilt bomb-destroyed houses after 1945. There were then 79 dwellings in construction.

raffic developments included the extension of tube railways Stratford and Leytonstone in the east in May and to Green- d in the west in August. Extensions to Woodford and New- y Park were scheduled for 1948. Road transport in central as was speeded up by a "no waiting" rule for many main eets, and horse traffic was forbidden during busy hours. To p street queues down, London transport augmented its fleet ouses by 350 hired motor coaches in October. (P. Bn.)

## ndon University.

In spite of shortages of all kinds the number of students continued to rise 1947, reaching totals of 18,354 internal and 23,289 external; in 1946, 90% of the available places were allotted to ex-serv- men. Little progress could be made in the provision of addi- al accommodation, but a start was made on the new build- s for Birkbeck college and the rebuilding of blocks at iversity college and Bedford college. More than 100 profes- ial and readers' appointments were made. The announce- nt by the treasury of the substantial increase both in recur- t and capital grants to the universities in the quinquennium 7–52 was a further incentive to the active planning which nt on throughout the year. A royal charter was granted to British Postgraduate Medical federation which, with the tgraduate Medical school and 11 other specialized institutes, ld co-ordinate and develop postgraduate medical education London; the establishment of an Institute of Advanced Legal dies would, it was hoped, provide a focal point for British al research.

everal distinguished European scholars visited the university give special lectures in various faculties, and a holiday course in English for students from other countries was held for the first time after World War II. The university, at the request of the colonial office, assumed new responsibilities in relation to higher education in the colonies, whereby certain colonial institutions were to enter into close relationship with the university and prepare their students for London "external" degrees, until they should be granted full university status of their own. (K. M. E.)

**Loran Navigation:** *see* Electronics.

## Los Angeles.

Largest U.S. city in area (452.2 sq.mi.), Los Angeles in 1947 ranked as the fourth most populous in the country. Estimates of the County Planning commission placed the city population at 1,921,285 as of Oct. 1, 1947 (1940 census, 1,504,277), and the county at 3,849,390. The metropolitan area was estimated at 3,146,000, making it the third largest in the U.S. Fletcher Bowron was mayor in 1947.

Los Angeles' industrial growth continued during the year. By Nov. 1 industrial development had reached $112,817,500, compared with a 1946 total of $155,838,492. Business activity was high-lighted by establishment in Los Angeles of several large firms' headquarters, expansion of steel plants, addition of new garment factories and a wide variety of general manufacturing. Manufacturing employment was estimated at 237,600 as of Sept. 1, compared with 106,614 (U.S. census) in 1940. That was 46% of the total for all California. Los Angeles continued leadership in aircraft manufacture, with several firms producing not only the most modern commercial planes but also filling regular and experimental orders on military craft challenging supersonic speeds.

Inadequate housing to accommodate the huge population influx remained a serious problem during 1947, although new construction progressed at a fast pace. By Oct. 1947, 17,721 new family units had been started for the year in the city, with a value, when finished, of $113,790,722; by September, 42,060 were started in the entire county, carrying a value of $260,953,403.

In 1946 the value of Los Angeles county agricultural products exceeded $214,800,000, a new record.

The total tax rate for the 1947–48 fiscal year was set at $5.2226 per $100 of assessed valuation, with assessment based on approximately 50% of real estate market value. The $5.2226 figure included $1.4937 for the county, $1.5754 for the city, and other amounts for schools and special districts. Assessed valuations, higher because of greater value of property as well as many improvements, were $2,140,499,412 for the city and $3,938,544,245 for the county. The 1947–48 city budget was $210,486,617, including $74,272,169 general; $10,750,228 for pensions; $7,606,252 for library, parks and recreation; $30,853,294 for the harbour, water and power department and airport. (C. S. B.)

## Louisiana.

One of the west south central states of the United States, admitted to the union in 1812 as the 18th state, Louisiana is popularly known as the "Pelican state," "Creole state" or "Bayou state." Area 48,523 sq.mi., of which 45,177 sq.mi. are land. Pop. (1940) 2,363,880, of which 1,383,441 or 58.5% were rural and 980,439 or 41.5% urban; 64% native whites, 34.3% Negroes and 1.7% foreign-born. On July 1, 1945, the bureau of the census estimated the state's population at 2,456,057. Capital, Baton Rouge (34,719). Other important cities: New Orleans (494,537), Shreveport (98,167), Monroe (28,309), Alexandria (27,066), Lake Charles (21,207), Lafayette (19,210).

**History.**—The legislature did not meet in regular session in 1947, but in March a five-day extra session was convened to appropriate funds from the mounting treasury surplus to meet pressing needs during the remainder of the 1946–48 biennium. Most important of these appropriations were $10,000,000 for teachers' salaries, $6,500,000 for building construction at the state's colleges and universities and $500,000 for the department of welfare.

Aside from the extra legislative session, the chief political activity of the year centred about the gubernatorial campaign to be decided in the state Democratic primary election of Jan. 20, 1948. Gubernatorial candidates were former governors Sam H. Jones and Earl K. Long (brother of the former governor Huey P. Long), congressman James H. Morrison and Judge Robert F. Kennon of the state court of appeals. The campaign was reaching a climax at the close of the year.

Other important events of the year were: continued activity in residential and commercial building construction; enlarged state highway building and maintenance program, which had been retarded during the war years by shortages of labour and materials; a program of expansion and modernization of the state's charitable and correctional institutions; continuation of the controversy between the state and federal governments over the control of coastal waters in which valuable petroleum deposits were located; strikes of Southern Trailways bus drivers and maintenance men and of the dairy farmers producing milk for the New Orleans market; overcrowded conditions in most of the elementary, secondary and higher educational institutions; the tropical hurricane of Sept. 19, which caused damages of millions of dollars to buildings and crops, with wind velocity of 110 mi. per hour at New Orleans and 60 mi. per hour as far inland as the central part of the state; and the mounting state income from taxes of all kinds, which reached a new high because of prosperous conditions in agriculture and industry.

State officers in 1947 were: James Houston Davis, governor; J. Emile Verret, lieutenant governor; Wade O. Martin, Jr., secretary of state; A. P. Tugwell, treasurer; L. B. Baynard, auditor; Fred S. LeBlanc, attorney-general; John E. Coxe, superintendent of education; Lucile May Grace, register of land office; Harry D. Wilson, commissioner of agriculture and immigration.

**Education.**—In 1947 the 820 public schools for whites enrolled 213,003 elementary and 58,542 high school pupils and employed 10,227 teachers; the 1,566 public schools for Negroes enrolled 151,686 elementary and 14,613 high school pupils and employed 4,706 teachers. The 179 private schools for whites enrolled 47,258 elementary and 9,626 high school pupils and employed 1,798 teachers; the 83 private schools for Negroes enrolled 13,051 elementary and 2,738 high school pupils and employed 391 teachers. The state maintained 11 public trade schools, and several private trade schools were operated for the training of veterans of World War II.

State appropriations for the 1947–48 fiscal year were more than $36,000,000 (exclusive of local funds) for public elementary, secondary and trade schools and $12,000,000 for state-supported colleges and universities. All the colleges and universities were crowded to capacity by veterans seeking higher education under the federal assistance program.

**Social Insurance and Assistance, Public Welfare and Related Programs.**—Readjustment allowances paid to Louisiana veterans of World War II dropped from $9,253,762 in 1946 to $4,548,447 in 1947; civilian unemployment compensation dropped from $12,074,734 in 1946 to $6,287,593 in 1947. Total payments made by the Louisiana division of unemployment security, for all purposes, dropped from $46,034,235 in 1946 to $29,576,291 in 1947.

Louisiana expended $25,000,000 on public welfare work in 1947. The monthly average of persons on the welfare rolls was 113,000, including 56,595 aged persons, 43,542 dependent children, 1,929 needy blind, 582 foster children and 9,691 special cases. In spite of labour shortage and high wages in industry and agriculture, state expenditures for public welfare were higher in 1947 than in 1946.

The state maintained the following institutions in 1947: charity hospitals at New Orleans, Shreveport, Lafayette, Monroe, Pineville, Independence and Bogalusa; hospitals for the insane at Jackson and Pineville; tuberculosis sanitariums at Greenwell Springs and Ruston; state schools for blind and deaf at Baton Rouge (for whites) and at Scotlandville (for Negroes); a training school for the feeble-minded at Alexandria. A special training school for spastic children was under construction at Alexandria, and a new hospital for the insane and three additional tuberculosis sanitariums were projected in 1947.

The state maintained 2 prison farms for its 3,300 adult offen separate training institutes for about 350 white juvenile delinqu new training institute for delinquent Negro boys was complet Baton Rouge in 1947.

State appropriations for charitable and correctional institutio $20,000,000 for the 1947–48 fiscal year, about $5,000,000 of wl for expansion and modernization of the existing facilities.

**Communications.**—In 1947 Louisiana had 18,200 mi. of publ ways, 14,800 mi. of which were state-maintained, 10,500 m gravelled and 4,300 mi. paved. State expenditures for highwa tenance and new construction amounted to $25,000,000 in 1947 were 4,400 mi. of railways and 4,800 mi. of navigable waterwa intracoastal waterway which crosses the lower section of the st ried 12,500,000 tons of freight through the three locks connecting the Mississippi river in 1947. New Orleans, Baton Rouge an Charles are ports for ocean-going commerce, with aggregate tonr nearly 45,000,000 in 1946, distributed as follows:

### Table I.—*Commerce of Louisiana Ports in 1946*

| Ports | Foreign | Coastwise and Internal | |
|---|---|---|---|
| New Orleans . . . . . . | 6,572,177 | 20,000,000 (est.) | 26 |
| Baton Rouge . . . . . . | 487,353 | 7,880,612 | 8 |
| Lake Charles . . . . . . | 1,375,208 | 8,676,783 | 10 |
| Totals . . . . . . . . | 8,434,738 | 36,557,395 | 44 |

There were 40 airports for land planes and 11 seaplane ba anchorages in operation in 1947. Nearly 366,000 telephones service at the close of the year.

**Banking and Finance.**—Louisiana had 33 national banks in 194 total deposits of $1,085,000,000 and resources of $1,132,000,0 125 state banks, with total deposits of $440,000,000 and resou $468,000,000. There were 61 savings and loan associations, wi resources of about $125,000,000. State budget for the 1946–4 year: receipts $125,000,000; expenditures $115,000,000. The state debt was about $150,000,000.

**Agriculture.**—A cold, wet spring retarded seeding operations, summer drought and the September hurricane reduced the yield of the principal crops in 1947. However, higher prices for most cr for livestock and poultry and their products boosted the tota cultural income above that for 1946.

Total value of agricultural and truck crops in 1947 was $250,0 compared with $230,000,000 in 1946; total acreage harvested was 000, about the same as in 1946. Total cash income from crops a stock and poultry and their products was nearly $400,000,000 i compared with $350,000,000 in 1946; from government payments 000, compared with $9,500,000 in 1946.

### Table II.—*Leading Agricultural Products of Louisiana, 1947 and 1*

| Crop | 1947 | |
|---|---|---|
| Cotton (bales) . . . . . . . . . . . . . . . . . | 505,000 | |
| Corn (bu.) . . . . . . . . . . . . . . . . . . . | 13,440,000 | 15, |
| Rice (bu.) . . . . . . . . . . . . . . . . . . . | 21,630,000 | 22, |
| Sugar cane (tons) . . . . . . . . . . . . . . . | 4,000,000 | 4, |
| Sweet potatoes (bu.) . . . . . . . . . . . . . . | 7,100,000 | 10, |
| Irish potatoes (bu.) . . . . . . . . . . . . . . | 1,500,000 | 2, |
| Oats (bu.) . . . . . . . . . . . . . . . . . . . | 3,500,000 | 3, |
| Hay (tons). . . . . . . . . . . . . . . . . . . | 400,000 | |
| Pecans (lb) . . . . . . . . . . . . . . . . . . | 4,400,000 | 8, |
| Peanuts (lb.) . . . . . . . . . . . . . . . . . | 1,500,000 | 1, |
| Peaches (bu.) . . . . . . . . . . . . . . . . . | 270,000 | |
| Pears (bu.) . . . . . . . . . . . . . . . . . . | 207,000 | |
| Citrus fruits (boxes) . . . . . . . . . . . . . | 260,000 | |
| Truck crops (value) . . . . . . . . . . . . . . | $20,000,000 | $21, |

**Manufacturing.**—The demand for manufactured products kept Louisiana industries working at wartime level during 1947. Nearly industrial establishments, employing 150,000 workers and paying 000,000 in wages, produced finished products worth $1,100,000, 1947, as compared with about $1,000,000,000 in 1946. Louisiana tries were not seriously affected by strikes and labour difficulties the year. Several new industrial plants were located in Louisian many large expansions were made to existing plants, under the sta exempting capital investments in industry from taxation for a pe ten years.

**Mineral Production.**—Increased demand pushed production of Louisiana minerals beyond previous levels in 1947, although dropped below the 1946 figures.

### Table III.—*Principal Mineral Products of Louisiana, 1947 and 194*

| Mineral | 1947 | 1 |
|---|---|---|
| Petroleum (bbl.) . . . . . . . . . . . . . . . | 155,000,000 | 140, |
| Natural gas (M. cu. ft.) . . . . . . . . . . . | 530,000,000 | 600, |
| Natural gasoline (bbl.) . . . . . . . . . . . . | 3,700,000 | 2,6 |
| Sulphur (tons) . . . . . . . . . . . . . . . . | 770,000 | |
| Salt (tons) . . . . . . . . . . . . . . . . . . | 775,000 | |
| Shell (tons) . . . . . . . . . . . . . . . . . | 2,300,000 | 1,4 |
| Sand (tons) . . . . . . . . . . . . . . . . . . | 1,775,000 | 1,3 |
| Gravel (tons) . . . . . . . . . . . . . . . . . | 3,800,000 | 2, |
| Stone (tons) . . . . . . . . . . . . . . . . . | 632,000 | 7 |

Total value of mineral production in 1947 was estimated at mor $300,000,000, compared with $280,000,000 in 1946. Some new pet and natural gas fields were discovered during the year.

**Forest Products, Furs, Fisheries.**—Louisiana forests produced 1,100,0 bd.ft. of lumber and 700,000 cords of pulpwood in 1947, compare 1,000,000,000 bd.ft. and 675,000 cords in 1946. The 1946–47 tr on in Louisiana yielded 8,475,563 pelts valued at $9,214,783, com- ed with 8,869,609 pelts valued at $15,553,185 for the 1945–46 season. isiana fisheries produced catches valued at $9,603,210 in 1944, $3,- ,022 representing fresh-water and $6,042,188 salt-water varieties. ches of all varieties in succeeding years declined numerically, but the tly increased prices of all fishery products brought the total value in 7 about as high as that for any previous year. (W. Pr.)

**vett, Robert Abercrombie** (1895– ), U.S. government official, banker l lawyer, was born on Sept. 14 in Huntsville, Tex., the son "Judge" Robert Scott Lovett, who ran the Union Pacific road for the Harrimans. He was graduated from Yale uni- sity in 1918 and took postgraduate courses in law and busi- s administration at Harvard university until 1921. During rld War I, he was in the naval air service.

Starting as a bank clerk, he later became a partner in the king firm of Brown Brothers and Harriman. In Dec. 1940, accepted an appointment as special assistant to the secretary war, and in April 1941 was made assistant secretary of war air.

ovett resigned from the war department in Nov. 1945 to urn to his private business, but on May 12, 1947, was ap- nted undersecretary of state. As Secretary of State George C. rshall was frequently out of the country on important diplo- tic assignments, much of the burden of running the state artment fell on Lovett. He took up the administration lgel for prompt relief aid to western Europe. Alarmed by the ssian establishment of the Cominform, successor to the mintern, Lovett contended, on Oct. 8, 1947, that the new nmunist agency was intended to prevent, if possible, the eco- nic recovery of Europe. He insisted, however, that the U.S. uld not be thus "deflected" from its goal to aid stricken ions.

**mber.** During the first six months of 1947, production of lumber in the U.S. was progressively increased bour was more readily available and there was increased ciency in getting out sawlogs for lumber on the 40,000 logging erations throughout the country. The year was also marked much more efficient operation and consequently greater pro- ction at the sawmills. Lumber production in 1947 was about ,500,000,000 bd.ft., which was considerably above the volume oduced during the past few years.

Elements that prevented greater lumber production were ight car shortages, particularly on the west coast, and the lure of the intercoastal water movement of lumber from the st coast to materialize, both to California points of destina- n as well as to the Atlantic seaboard. Prior to World War this movement of lumber reached a yearly volume of 1,000,- 0,000 to 2,000,000,000 bd.ft. The excessive cost of ship eration in 1947 was the principal cause of the relatively low vement of water-borne lumber. Costs of moving lumber from west coast to the east coast of the U.S. were about $22 to 5 per 1,000 bd.ft. in 1947 as contrasted with prewar costs of out $10 to $14 per 1,000 bd.ft. Rail rates were also increased the Interstate Commerce commission.

The principal species produced in 1947 by the lumber in- stry, in order of production, were: southern pine, Douglas ponderosa pine, oak, white pine, hemlock, red gum, yellow plar, maple and white fir. Of the total volume produced, the st three named constituted more than 70%. Other important ecies were redwood, tupelo gum, beech, cypress, sugar pine, tonwood, western larch, hickory, elm and birch. Some species merly neglected or produced in small volume, notably white and western larch, moved into greater production during 47.

The leading lumber-producing states were Oregon, Washington and California on the west coast, followed by North Carolina, Virginia, Arkansas, Alabama, Georgia, Texas, Mississippi, South Carolina and Louisiana. All of the last nine named states produced southern pine and some hardwoods. Maine and New York also continued to be important lumber-producing states, in spite of repeated cutting, fires and other deterring influences.

About 50% of the total lumber production in the U.S. was produced from a relatively few large mills and the balance from a very large number of small mills. There were about 35,000 sawmill units of all sizes in the U.S. during 1947, most of them located in the south.

Prices for lumber fell sharply in the late spring and early summer. For example, No. 2 common southern pine boards used for sheathing, sub-flooring, concrete forms and many other purposes fell from about $90 per 1,000 bd.ft. delivered on a wholesale price basis in New York city to about $50 to $60 per 1,000 bd.ft., depending upon points of origin in the south. By the middle of summer, these prices had returned to around $95 to $100 per 1,000 bd.ft. A strong demand continued for the upper grades, notably for flooring, as well as for B and better grades in the softwoods and firsts and seconds among the hardwoods. Toward the end of the year, prices continued on a confused basis with a decided tendency to strengthen in anticipation of an active spring building program.

Stumpage prices for commercial timber continued to remain at a high level, in some cases even higher than in 1946. Many purchases of southern pine stumpage were sold at $25 per 1,000 bd.ft. Many of the higher valued hardwoods, such as oak, were sold for from $30 to $50 per 1,000 bd.ft., depending upon grade outturn. Northern white pine in New England and the Great Lakes states was sold for from $15 to $30 per 1,000 bd.ft., depending upon quality.

Many lumber companies, including some of the largest and oldest, made progress in putting their forests under a permanent system of sustained yield management. Almost twice as much lumber was cut from national forest timber in 1947 as was cut before the war. Access roads had made much timber in the national forests available for cutting. (N. C. B.)

**Europe.**—Thirty-four countries sent representatives to the International Timber conference, organized by the Food and Agriculture organization at Marianské Lázne, Czech., from April 28 to May 10, when a thorough examination was made of the timber needs of both Europe and the United Kingdom. It was estimated that during 1947 the export supplies of softwoods available for Europe from all sources would be 2,509,000 standards, whereas the normal import requirements from the same area were declared to be 4,044,000 standards. It was therefore recommended that all the constituent nations should take steps either to increase their production by 10% or to reduce their estimated consumption by an equivalent amount. At a meeting of the Emergency Economic Committee for Europe held earlier in the year, the following import quotas had been accepted by the countries concerned as their absolute minimum requirements:

| | Standards |
|---|---|
| Great Britain | 1,122,000 |
| France | 200,000 |
| Netherlands | 210,000 |
| Belgium and Luxembourg | 147,000 |
| Denmark | 103,000 |
| Italy | 117,500 |
| Switzerland | 47,500 |
| Total | 1,947,000 |

**Great Britain and the Commonwealth.**—It was estimated that during the first six months of 1947 the United Kingdom received in softwoods and hardwoods, including both imported goods and home production, 817,000 standards, as compared with 569,000 standards during the same period in 1946; during the same period in both years plywood supplies remained constant at about 175,000 cu.m., including both imported and home production.

It was considered that in 1947 Canada would make a softwood contribution to Europe of about 550,000 standards, of which total about 500,000 standards would be received by the United Kingdom. Production in Canada of both softwoods and plywood was at record figures during the year. In September the Canadian Timber control relinquished its hold over prices, both internal and external. Domestic prices had before been controlled at about two-thirds of the level ruling in the export market. The effect of decontrol was to produce a rise in domestic prices equal to about half of this difference. Well-informed circles, however, were of the opinion that Canadian lumber prices had probably seen their peak.

Generally speaking, global prices paid for both softwoods and hardwoods during 1947 showed some increase over those of 1946. This position, however, was likely to be reversed when bulk contracts should be discussed for 1948 shipment, because of the increase in production and the currency difficulties of international payments, particularly with regard to dollars. The question of means of payment had indeed replaced production as the problem mainly concerning the United Kingdom and the commonwealth.

The fifth British Empire Forestry conference was held in London during June and July, and was attended by representatives of all the dominions and colonies under the chairmanship of Lord Robinson. A resolution was passed in favour of maintaining the principle of sustained yield, with the proviso that during periods of timber scarcity it might be permissible to overcut for a limited period. The closing act of the conference was to pass a resolution recommending that the sixth British Empire Forestry conference should meet in 1952 in either India or Canada. (*See* also FORESTS.) (B. L.)

**Lutherans.** No other Protestant church suffered as much dislocation of its people, destruction and confiscation of its property in World War II as did the Lutheran. In 1947 Lutherans gathered their total strength to bring spiritual and material aid to their church in Europe and to their threatened foreign missions in Asia and Africa.

Focus of this effort was the meeting in Lund, Sweden, June 29 to July 6 of delegates, representing the major divisions of the church in the Americas, Europe and Asia, to form the Lutheran World federation. Confronted by its own martyrs (many of the delegates had been imprisoned and been caused to suffer in other ways because of their heroic services in the resistance movements before and during the war), the assembly was solemnized to face with equal courage the dismaying demands of its world service. Recognizing its responsible place in the whole family of Christian churches, the federation encouraged its constituent bodies to unite with the emergent World Council of Churches. Anders Nygren, world-renowned Swedish theologian, was chosen first president, and Sylvester C. Michelfelder, U.S., first executive secretary. World headquarters were established in Geneva, Switz. Affiliated bodies included more than 60,000,000 Lutherans, speaking more than 100 languages and dialects.

North American Lutherans associated in the National Lutheran council were able to celebrate by year's end their overpaying by $500,000 their $10,000,000 Lutheran World Action goal for 1946–47. This brought to more than $27,000,000 the relief gifts in money and goods gathered by American Lutherans after 1940.

Contributing greatly to this church's new sense of world unity and understanding were the increasingly numerous war visits of its leaders to sister churches in other lands. A these journeys two unique ones were taken in 1947. Th which saw two deaconesses fly from the U.S. to establis Lutheran diaconate in India also saw a modern re-enac of the Mayflower drama when 23 Estonian Lutherans, persecution, disembarked at Savannah, Ga., after a 7 crossing of the Atlantic in a 35-ft. open boat. (*See* also CH MEMBERSHIP.) (F. E.

**Luxembourg.** A grand duchy situated between France many and Belgium. Area, 999 sq.mi.; (est. 1945) 281,572; chief city, Luxembourg (cap. 59, language, Luxembourgian (idiomatic) and (officially) F and German; religion 98% Roman Catholic. Ruler from Grand Duchess Charlotte.

**History.**—The cabinet resigned on Feb. 13 as a result o flict between Socialists and Christian Socialists, and on Ma a new cabinet, containing neither Socialist nor Communist bers, was formed by Pierre Dupong (Christian Socialist March the minister of economic affairs introduced a new lowering policy to maintain equilibrium between prices wages. In October the Commission for the Restitution of etary Gold allocated 1,929 kg. (68,042.77 oz.) of fine go Luxembourg as one of the countries despoiled of gold by many. Ratifications of the customs union between the Ne lands and the Belgo-Luxembourg economic union took pla Oct. 29. (J. R.

**Finance.**—Revenue (est. 1947) Fr.2,054,133,737; expenditure Fr.2 751,000. Consolidated debt (Nov. 1946) Fr.1,392,588,605. The exc rate is 1 Fr.=2.27 U.S. cents (domestic rate, Oct. 1947).

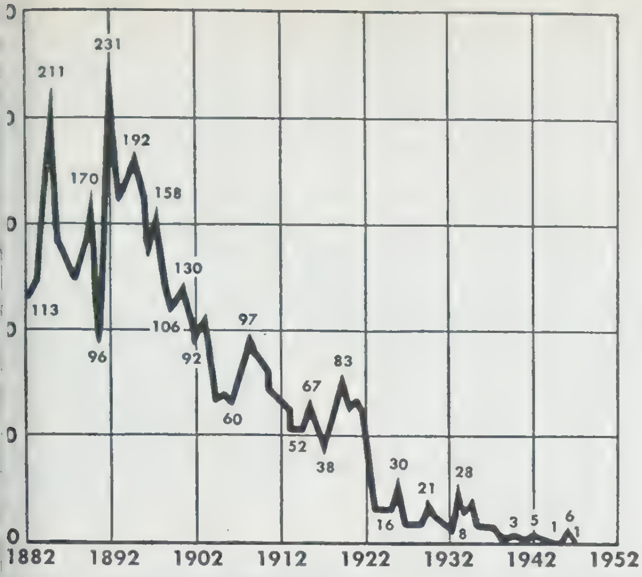
**Industrial Production.**—(July 1946–June 1947 in short tons): pig and ferroalloys 1,740,000; steel ingots and castings 1,636,000.

**Foreign Trade.**—In customs union with Belgium. British board of figures (1947, first eight months): Luxembourg to United Ki £156,837; United Kingdom to Luxembourg £157,671.

**Lynching.** The U.S. lynching record again approache vanishing point in 1947 with only one rep victim. Although in the previous year 3 mobs had take lives of 6 persons, the average for the decade 1938–47 was than 4 victims per year, contrasted with an annual averag 83 for the previous 56-year period during which accurate ords were kept. That the mob spirit was not yet dead, how was evidenced by the fact that 31 lynchings were threaten 1947, and were prevented only by timely action, chiefly on part of police officers.

The one lynching of the year was that of Willie Earle, year-old Negro who was taken from the jail in Pickens, on Feb. 17 and beaten and shot to death on the roadside a miles away. Earle was accused of the robbery and fatal stab 24 hr. earlier of T. W. Brown, 50-year-old taxicab drive near-by Greenville. Gov. J. S. Thurmond immediately issu statement promising that every effort would be made "to prehend the persons responsible for the atrocity." Assiste state and federal agencies, Sheriff R. H. Bearden of Green county, promptly launched an investigation which led to arrest of 27 men within 3 days, and 4 others later. Twe eight of the 31 were taxi drivers, and 26 of these signed sworn confessions of participation in the mob. All were sh indicted by the grand jury on charges of murder and conspi to murder.

When the case came to trial in Greenville, the prosecu evidently did everything possible to secure convictions, bu no avail. Three of the accused were freed by the judge directed verdict and the others were acquitted by the jury. N of the defendants took the witness stand, and defense attor argued that their unsworn confessions had been made u



NCHING in the U.S. from 1882 to 1947, based on figures of the department ecords and research, Tuskegee institute

ress. The verdict elicited many expressions of surprise and ret throughout the south as well as in other sections. "The ole nation must hang its head in shame," said the *Richmond nes Dispatch* (Va.) in comment on the verdict.[1] The *Atlanta urnal* (Ga.) called it "a ghastly farce . . . a verdict for rchy."[2] It was "a scathing reproach to South Carolina jus-e," said the *Roanoke Times* (Va.),[3] and according to the *ntgomery Advertiser* (Ala.) the verdict "brought shame up-South Carolina, the South and the nation."[4]

A parallel case during the year was the failure of North Caro-a courts to convict members of a mob which took from jail dwin Bush, a Negro accused of criminal assault, presump-ely with the purpose of lynching him. Bush was fortunate ough to escape from the mob, however, gave himself again o custody and later was set free for lack of evidence. Mean-e, several alleged members of the mob were arrested, indicted d vigorously prosecuted, but without success.

A notable aspect of both these cases was the fact that nest efforts were made to secure convictions. With more than oo lynchings recorded, comparatively few lynchers had ever en brought into court, and in nearly 50 years only 82 had en convicted. (R. B. E.)

**acao:** *see* Portuguese Colonial Empire.

**acArthur, Douglas** (1880– ), U.S. army officer, was born Jan. 26 in Little Rock bar-cks, Ark. (See *Encyclopædia Britannica.*)

After Pearl Harbor, he led U.S. and Filipino forces in the fense of the Philippines until March 17, 1942, when President D. Roosevelt ordered him to Australia to assume command the United Nations armies in the Southwest Pacific. Starting om New Guinea, MacArthur took the offensive, never relin-ishing it until Japan's surrender. MacArthur, who had been ade a general of the army in 1944, was appointed supreme lied commander for Japan after Hirohito's capitulation broad-st, Aug. 14, 1945, and he headed the Allied delegation that cepted the Japanese surrender in Tokyo bay on Sept. 2 of at year.

MacArthur's early reports on the results of the occupation ere marked with concern over the growth of communism in Japan, although those issued subsequently were more optimistic. By 1947, it was conceded even by critics that his occupation had indeed been impressive. He had given the Japanese, in little more than a year, a bill of rights, a democratic constitution and emancipation from feudal shackles for nearly all classes of Japanese society. Some, however, contended that giving the Japanese democracy on paper was not establishing it in fact, and there were a few complaints that MacArthur was the advance agent of U.S. "imperialism" and that his control of Japan was virtually absolute.

In his statements on the occupation, the general said, March 17, 1947, that he favoured immediate initiation of negotiations for a peace treaty and preparations to evacuate Allied occupation armies. Expanding on this theme, June 27, he said that the occupation task was virtually completed. Later, he praised Japan's progress, asserting that there need be no fears of an economic collapse. MacArthur's name was frequently mentioned among the Republican party's presidential prospects toward the close of 1947. His strength resided largely in midwest "noninterventionist" strongholds.

**McCloy, John Jay** (1895– ), U.S. government official, world bank executive and lawyer, was born on March 31 in Philadelphia, Pa. A student at Harvard law school when the U.S. entered World War I, McCloy served in the army as an artillery officer in France. After the armistice, he returned to Harvard, graduating in 1921, and between 1921 and 1940 practised law with prominent firms on Wall Street. McCloy's handling of the celebrated Black Tom case, in which he won $20,000,000 for the claimants, brought him to the attention of Henry L. Stimson, then secretary of war, who appointed him as expert consultant to the secretary of war in Oct. 1940. The following April, McCloy was made assistant secretary of war.

Two months after the end of World War II, McCloy resigned (Nov. 1945), to return to his law practice. Hardly more than a year later he was asked to take the presidency of the International Bank for Reconstruction and Development. At first McCloy was reluctant to run for the post, but reconsidering, he accepted and was elected Feb. 28, 1947. In the ensuing months, McCloy made several important policy statements. On one occasion, he stated that the bank had to take "calculated risks" if it intended to perform its functions properly. On another, he said (Sept. 10) that Britain was entitled to apply to the bank for a loan to modernize its productive machinery, but that it could not ask the bank for funds for the purchase of food.

**McGill University.** This university at Montreal, Canada, was established in 1821 by royal charter to provide higher education for the English-speaking minority population of the province of Quebec. Of the 7,808 students enrolled in regular university courses for the session beginning in Oct. 1947, 5,187 were from Quebec province and 1,834 from the other Canadian provinces, 285 from other parts of the British empire, 327 from the United States, 72 from Mexico, Central and South America and 103 from other parts of the world, including Iceland, Greenland, Alaska, Europe, Africa, the middle east and Asia. Of these undergraduates, 459 received scholarships and bursaries totalling $93,953. Of 544 students enrolled for postgraduate degrees, 134 received fellowships and scholarships amounting to $125,680.

As an expression of its determination to provide the best possible opportunities for veterans, the university spent $5,624,925 during the year, of which $4,103,252 was for academic facilities and $1,521,673 to provide board and residence for

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*Richmond Times Dispatch*, D. T. Bryan, Richmond, Va., May 23, 1947.
*Atlanta Journal*, The Atlanta Journal Company, Atlanta, Ga., Feb. 1947.
*Roanoke Times*, Times—World Corporation, Roanoke, Va., Feb. 1947.
*Montgomery Advertiser*, Montgomery, Ala., Feb. 1947.

3,215 of the student population. The income was $4,676,139, and the deficit therefore amounted to $948,786, of which only a part was refundable by the government under the Demobilization Orders-in-Council.

Total gifts, grants and bequests during the year were $1,560,140 in money, and additions to the physical fabric included the residence of George Herrick Duggan and the donation of McIntyre park, a large wooded tract of ten acres situated in the heart of the city adjacent to the university grounds, as well as the erection of the Donner Laboratories for Medical Research. (For statistics of endowment, enrolment, faculty, library volumes, etc., *see* also UNIVERSITIES AND COLLEGES.)

(F. C. J.)

**McGrath, James Howard** (1903– ), U.S. senator and lawyer, was born on Nov. 28 in Woonsocket, R.I. He was graduated from Providence college and received his law degree from Boston university in 1929.

Starting his political career as a Democratic precinct doorbell ringer, McGrath worked his way up the ladder, and by 1940 he was the party's candidate for governor of the state. He was elected and twice re-elected, but left the gubernatorial office in 1945 to become U.S. solicitor general. He resigned this post in turn to make his successful campaign in Nov. 1946 for the U.S. senate, one of the few Democratic candidates that survived the Republican tide that swept the country that year.

His appointment as chairman of the Democratic national committee (to succeed Robert E. Hannegan) was disclosed on Sept. 27, 1947; it came as a distinct surprise to many Washington observers since McGrath's voting record and speeches placed him in the camp of the "old-line" party liberals of the pre-Truman era.

In one of his first important actions as party chairman, McGrath, on Oct. 29, 1947, persuaded the Democratic national committee not to deliver a scheduled attack on the record of the G.O.P.-dominated 80th congress on the ground that it would serve neither the president's nonpartisan program nor the national interest.

**Machinery, Farm:** *see* AGRICULTURE.

**Machinery and Machine Tools.** More new types and models of machine tools were developed during 1947 than in any other year of the preceding decade. It was the first year since the end of World War II during which design changes were adopted by the entire machine tool industry; such designs had been frozen at the war's beginning to expedite production.

A principal reason for the industry's exceptional performance was the first Machine Tool show in 12 years, held at the Dodge-Chicago plant in Chicago from Sept. 16 to 26; companies hastened completion of postwar models for display at this show, which was attended by more than 175,000.

The new developments fell into two main classifications: standard, general-purpose machines, which, in many cases, had been redesigned from the base up; and special-purpose machines. The latter group provided the more spectacular examples of new machining processes adaptable to the needs of large-scale, mass-production companies.

Users had shown a predilection for so-called "processing" (sometimes known as "transfer-type") machines—a combination of units tied together by conveyors and operated as an integrated whole. An unmachined part, such as an automobile cylinder block, is carried through a succession of operations from which the block emerges as a completely machined product. Prime example of these "transfer-type" machines w
producing 150 automobile rear-axle housings per hour wit
one operator. These machines obviously could be applie
to high-production operations such as those of the auto
industry. Typical of the trend toward "specials," apart
the so-called "transfer-type" machines, was a ten-spindle
gear shaper—actually a group of ten-gear shapers designe
one compact unit. Each of the ten stations could perf
different operation on a gear, or a combination of st
could do the same operation simultaneously.

All the new general-purpose machine tools showed m
improvements—more power, greater flexibility, less c
over time, higher output, easier operation, more auto
cycling. A substantial amount of the new design resulted
the desire of machine tool builders to keep abreast of de
ments in cemented carbide tooling. Carbide tools had re
tionized machining and had stepped up amazingly the s
and feeds with which machining could be done, thus incre
sharply production per machine-hour. Carbide tools in
necessitated redesign of machines for greater rigidity
greater power.

Standard machine tools had made the task of the ope
simple, with all operations automatic after the initial bu
pressing. In a fraction of a minute, an engine lathe cou
transformed from an automatic, high-speed unit into a
operated unit for a small-lot job. Automatic cycling ha
come commonplace. Automatic feed and rapid-traverse c
with rise-and-fall tables to clear the cutter on return,
provided on milling machines, for example, in almost any
bination of interrupted cuts with uniform or variable sp

Cylindrical grinders were equipped with automatic sizi
one case with electrical gauge heads which measured di
and stopped the grinding cycle within tolerances of a ten
a thousandth of an inch. To speed production grinding,
matic control with rapid approach and withdrawal was
veloped. Automatic loading was used, including hopper
on centreless units.

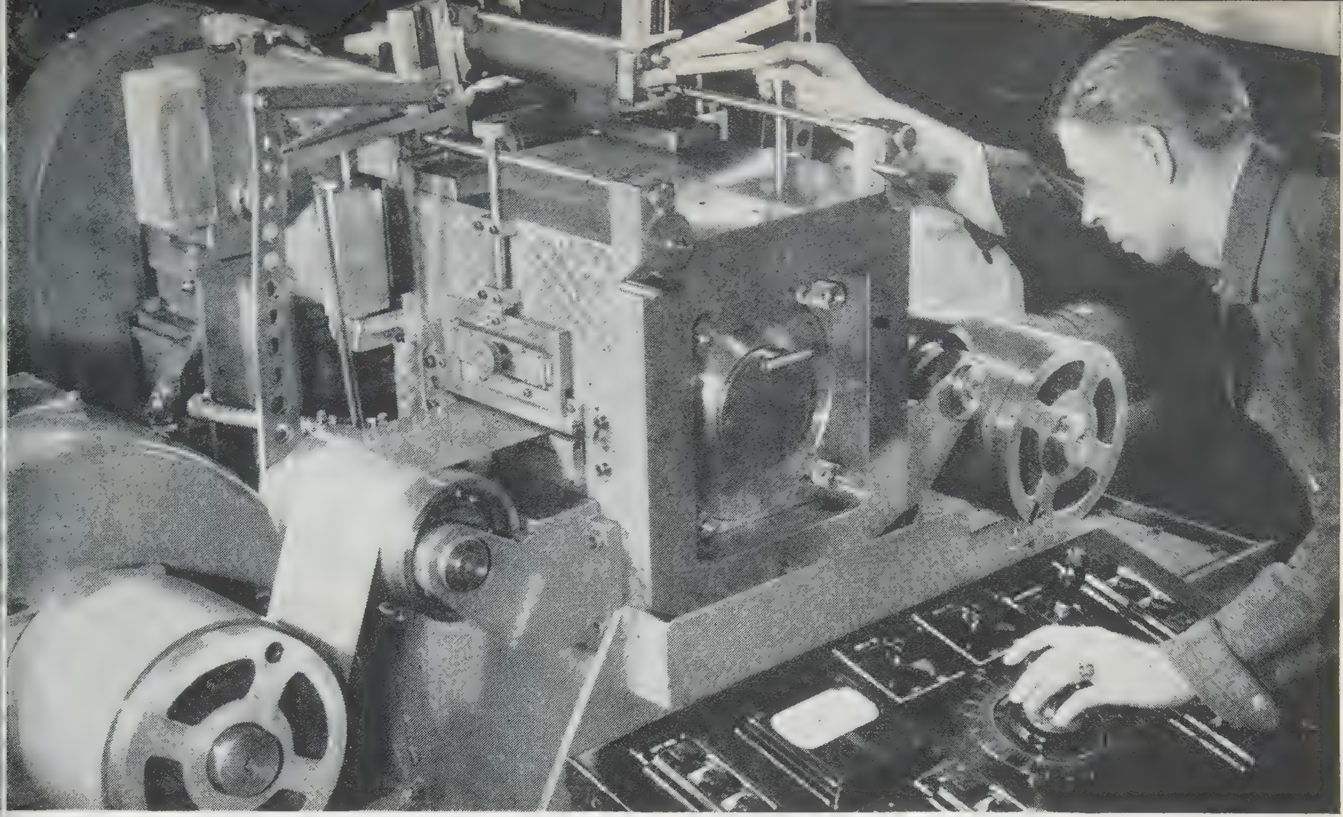
The greater flexibility of new machines was demonst
by a new toolroom lathe with a speed adjuster controlling
than 300 speeds from 6 to 1,500 r.p.m. More than 100 sp
could be obtained in each of three ranges provided by the
bination gear-belt drive headstock without stopping the sp
rotation. Closer tolerances featured many new machine t
improved grinding wheels and careful machine adjustment
instance, made possible surface grinding to limits of 0.
in. and a finish of one or two microinches.

Electronic control had come into considerable favour.
new honing machine had automatic electronic control of op
tions after the bore was honed to size. The cycle included
out, tool collapse and withdrawal. At least one lathe
equipped with electronic-controlled feeds.

Electrification of machine tools progressed notably; s
of the highly complex machines had as many as 17 mo
The control panels alone were often so large as to req
separate housing. It was not unusual for the electrical eq
ment to cost 25% to 30% of the total price of the mac

Postwar-designed machine tools were at least one-third
productive than previous types and models, and the incr
in some cases rose to several times the maximum rate of
replaced model.

Total shipments of the U.S. machine tool indu
amounted to about $300,000,000 in 1947, slightly under
figure for the previous year. After allowance for increa
prices, however, unit production was estimated at only 8
to 85% of that for 1946. Nevertheless, the physical volume
output was comfortably above the best prewar year, 1



NIATURE ROLLING MILL used at the Pittsburgh laboratories of the West- house Electric Co. in 1947, in testing very thin metal alloys for possible in reducing the size and weight of aircraft motors and generators

ien dollar shipments were $185,000,000. Builders ended 1947 th a backlog of more than $100,000,000, and production at out $25,000,000 a month.

Business during the year was not uniformly good among all ilders. Some still suffered from the competition of government-owned, war-surplus machines, although the most critical ase of the surplus problem had passed. A certain shrinkage number of companies was an inevitable consequence of the ır, when the industry grew quickly far beyond normal bounds supply war-production requirements.

Foreign sales always had been a sizeable portion of the achine tool industry's business. Before World War II the erage export volume amounted to 20% of the total. In the mediate postwar period, the proportion was 25% to 30%. ports were to all parts of the world, but particularly to ıropean nations and to Latin America. U.S. builders sup- ied a liberal share of the world market formerly served by e German machine tool industry. (B. Fy.)

**Great Britain.**—Machinery played a big part in the drive to crease British exports during 1947, especially since it was ecided that heavy capital goods were to form one of the most portant items. The success of the drive was shown by the ct that exports of machinery from Great Britain for the third arter of 1947 were 60% higher than for the corresponding eriod of 1938. Total exports of machinery for the first nine onths of 1947 were £129,422,452 as against £75,193,071 for e corresponding period of 1946. New developments in British achine tool manufacturing recognized the need for special- rpose tools as a means of economizing in manpower and in- easing production, and designers were quick to exploit step- ss speed variation by electronic control. Various new types lathes figured prominently, and more importance was at- ched to the appearance of machine tools.

Interest was taken in the question of gas turbines; in view the fuel shortage these had possibilities for the generating industrial power. Examples of this type of engine were the e built and installed at Heaton, Newcastle-upon-Tyne, and experimental generator set weighing only 19 lb. per h.p., developed for industrial use. The railways also considered the possibilities of gas turbine locomotives, the Great Western railway having ordered one capable of 90 m.p.h. from Switzerland and another in England. The Southern railway had four similar locomotives under construction at its Brighton works; these were expected to haul the Atlantic expresses at 100 m.p.h. with 2,000 tons less coal per annum than steam locomotives. Research on marine gas turbines was carried out under the auspices of the Turbine Research association.

Many new ships were fitted with steam reciprocating machinery for propulsion, permitting considerable fuel economy on long voyages. An interesting new example of British mining machinery was a 102 h.p. diesel underground locomotive capable of hauling 375 tons at 4 m.p.h. In the field of motor manufacturing, a new 1,500 ton triple action press could complete a whole side for a car body in one process. (*See* also AUTOMOBILE INDUSTRY.) (J. LN.)

**Mackenzie King, William Lyon:** *see* KING, WILLIAM LYON MACKENZIE.

**McNeil, Hector** (1910– ), British statesman, was born in Scotland on March 10, and was educated at Woodside school, Glasgow, and Glasgow university. He contested Kelvingrove parliamentary division, Glasgow, Nov. 1935, and Ross and Cromarty, Feb. 1936; he was returned unopposed as Labour member for Greenock in July 1941 and again in the 1945 general election. In the Labour government in Aug. 1945, he was appointed parliamentary under secretary of state for foreign affairs, and in Oct. 1946 succeeded Philip Noel-Baker (*q.v.*) as minister of state; at the same time he was sworn a member of the privy council. McNeil represented Great Britain at the United Nations general assemblies in London and New York, 1946 and 1947, where in the absence of Ernest Bevin, he acted as a vice-president of the assembly. He also attended the five sessions of the Economic and Social council, held in 1946 and 1947. In the general debate at the second general assembly of the United Nations, which commenced in Sept. 1947, McNeil spoke of the proceedings of the United Nations being frustrated by "Russia's unwillingness to co-operate" and stated that the United Nations was the main instrument of Britain's foreign policy, and that the British government was prepared to try any method within the scope of the charter to facilitate the working of the United Nations.

**Madagascar:** *see* FRENCH OVERSEAS TERRITORIES.

**Magazines and Periodicals:** *see* NEWSPAPERS AND MAGAZINES.

⁂

## Magnesium.

The postwar demand that was expected to develop more or less spontaneously for magnesium failed to develop to any great degree, and it was discovered that a metal cannot step into a comfortable spot on the basis of its war record, but must make its place by competition and demonstration of its worth on a practical dollar and cent basis. In spite of the discouraging appearance of the production statistics shown in the table above, the metal was making a good start toward achieving its place in postwar industry.

*Data of Magnesium Industry in the U.S., 1940–46*

(In thousands of short tons)

| | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|---|
| Primary output . . . . . | 6.3 | 16.3 | 49.0 | 183.6 | 157.1 | 32.8 | 5.3 |
| Secondary recovery . . . | ? | ? | 6.3 | 11.4 | 14.2 | 9.2 | 5.1 |
| Sales, primary . . . . . | 6.4 | 15.5 | 47.4 | 170.3 | 146.6 | 43.5 | 8.9 |
| Exports . . . . . . . . . | 0.8 | 1.5 | 4.0 | 35.6 | 21.0 | 0.5 | 0.2 |
| World output (est.) . . . | 41.6 | 65.9 | 115.8 | 263.0 | 232.7 | 54.5 | 13.2 |

While these figures were low as compared with some of the over-optimistic predictions of a year or two previously, they showed a healthy advance over the prewar years.

(G. A. Ro.)

## Magnesium Compounds.

During World War II there was a radical change in the production pattern for magnesium compounds in the United States. Magnesia may now be produced from any one of half a dozen sources, and not primarily from magnesite.

*Production of Magnesium Compounds in the U.S., 1939–46*

(Short tons)

| | Crude Magnesite | Caustic Calcined | Refractory | Total Magnesia | Other Compounds | Dead-burned Dolomite |
|---|---|---|---|---|---|---|
| 1939. . . . . . . | 198,980 | 10,157 | 86,077 | 96,234 | 85,754 | 671,561 |
| 1940. . . . . . . | 333,166 | 16,261 | 140,668 | 156,929 | 108,266 | 867,909 |
| 1941. . . . . . . | 374,799 | 30,225 | 201,481 | 231,706 | 137,357 | 1,069,887 |
| 1942. . . . . . . | 497,368 | 41,889 | 273,661 | 315,550 | 296,885 | 1,229,357 |
| 1943. . . . . . . | 754,832 | 191,792 | 301,382 | 493,174 | 737,062 | 1,276,725 |
| 1944. . . . . . . | 561,450 | 139,243 | 278,490 | 417,733 | 608,151 | 1,290,790 |
| 1945. . . . . . . | 336,458 | 43,270 | 254,994 | 298,264 | 201,501 | 1,187,334 |
| 1946. . . . . . . | 324,640 | 45,178 | 244,824 | 290,002 | ? | 1,077,983 |

While output during 1947 was well below the war peak, it was more than three times the prewar level, with most of the decline in "other compounds," the heading under which was classified most of the basic raw materials used in developing the war output of magnesium metal. (G. A. Ro.)

## Maine.

The extreme northeastern state of the United admitted as the 23rd state in 1820, and po known as the "Pine Tree state." Land area 31,040 water area 2,175 sq.mi.; pop. (1940) 847,226; rural 5 urban 343,057. Capital, Augusta (19,360); other cities land (73,643); Lewiston (38,598); Bangor (29,822). Th bureau of the census officially estimated the population state as 793,600 on July 1, 1944.

**History.**—Gov. Horace A. Hildreth announced that i 1948 he would be a candidate for the U.S. senate nomi The Republican-controlled Maine legislature met in regu ennial session in Jan. 1947. Proposals for sweeping char the tax structure were defeated, with income tax and g sales tax measures among those rejected. The gasoline ta raised two cents per gallon in 1947, and a new tobacco ucts tax passed, along with an increase in the existing cig tax. The legislature raised minimum pay scales for school teachers from the $1,000 existing rate to a $1,500– range.

Drought conditions in summer and fall months caused lakes and streams to drop to a low ebb, damaging wate plies and bringing about a serious shortage of hydroel power. More disastrous were numerous widely scattered fires, which levelled hundreds of homes and summer co and estates, virtually wiping out several small communitie seriously damaging others, such as Bar Harbor.

**Education.**—The net enrolment in the public schools for 1945–4 154,073 compared with 153,318 for 1945 and 152,788 for 1944. were 5,966 teaching positions for 1945–46 compared with 5,8 5,703 for 1945 and 1944. The state maintained 1,796 urban and schools in 1945–46, of which 815 were 1-room buildings. The fol figures are for the school year 1945–46: total resources availa general support of schools $16,032,280; total expenditures per $109.45. Harland A. Ladd became commissioner of education in 194

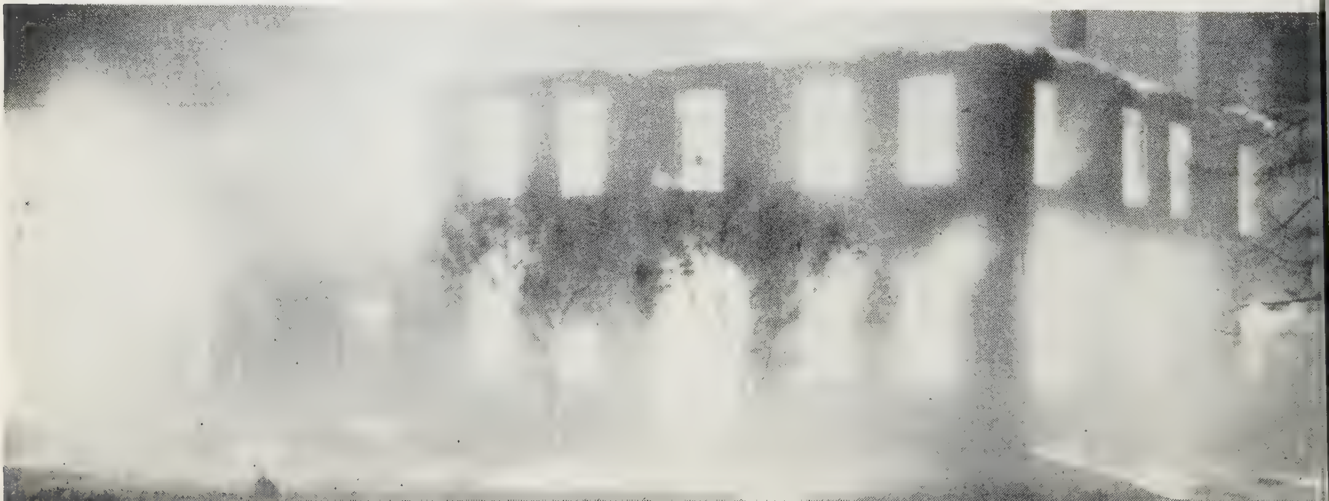
**Social Insurance and Assistance, Public Welfare and Related Progr** As of June 30, 1947, there was a balance in the Maine unemplo compensation fund of $38.872,408, compared with $36,681,291 a earlier. The balance as of Nov. 30, 1947, was $41,127,509. For th 11 months of 1947 the state compensated for 317,830 weeks of ployment, expending in that time $4,200,860.

Public assistance funds expended during the two fiscal years June 30, 1946, were as follows: old-age assistance (1946) $5,43 (1945) $5,134,189; aid to dependent children (1946) $1,210,530, ( $952,799; aid to blind (1946) $299,969, (1945) $293,772. Novemb loads in the above categories were: old-age assistance (Nov. 1946 228, (Nov. 1945) 14,891; aid to dependent children (Nov. 1946) (Nov. 1945) 3,921; aid to blind (Nov. 1946) 772, (Nov. 1945) 80

Thirteen state institutions (correctional, insane hospitals, sana as of Nov. 30, 1946, had a total inmate population of 5,092; the appropriation was $3,107,902.

**Communications.**—Highways of the state as of Dec. 31, 1946, state highways 3,044 mi.; state-aid highways 6,855 mi.; third-class ways 1,279 mi.; town ways 10,646 mi.; miscellaneous 125 mi.; mileage 21,949 mi. In the year ending June 30, 1947, the state exp for highway purposes $14,798,749. Steam railway mileage (1946 2,778 mi. As of Sept. 22, 1947, the Maine aeronautics commission 78 airports and airfields in Maine. The New England Telephone and graph company reported 186,000 telephones in service in Maine Nov. 30, 1947.

BLAZING HOME at Bar Harbor, Me., one of the small towns virtual stroyed in a series of forest fires which swept the state late in Oct. causing damage estimated at $40,000,000



**anking and Finance.**—During 1947 the Maine banking department mer E. Robinson, commissioner) supervised 32 savings banks and rust companies, 31 building and loan associations. Assets of savings ks, as of Oct. 6, 1947, were $260,600,813; of trust companies $263,- ,503; building and loan associations $31,249,960. Total deposits same were: savings banks $231,273,650; trust companies $241,760,955. ets and deposits reached a new high mark in 1947.

tate receipts, expenditures and bonded debt for the fiscal year ending 30, 1947, were, respectively: $45,731,816, $45,413,275 and $13,- ,500. For the year ending June 30, 1946, they were, respectively: ,757,518, $35,700,261 and $16,413,500.

**griculture.**—Production of the leading crops during 1947 and 1946 is n in Table I.

Table I.—*Leading Agricultural Products of Maine, 1947 and 1946*

| Crop | 1947 (est.) | 1946 | Average, 1936–45 |
|---|---|---|---|
| , bu. | 400,000 | 407,000 | 537,000 |
| at, bu. |  | 21,000 | 48,000 |
| , bu. | 2,625,000 | 2,840,000 | 3,576,000 |
| y, bu. | 112,000 | 128,000 | 111,000 |
| wheat, bu. | 136,000 | 120,000 | 117,000 |
| short tons | 950,000 | 844,000 | 840,000 |
| toes, bu. | 62,790,000 | 78,402,000 | 47,572,000 |
| es, bu. | 930,000 | 767,000 | 643,000 |
| is (dry), tons, uncleaned | 3,300 | 2,450 | 4,050 |

**anufacturing.**—The total value of manufactures (1939 census) was 5,368,595. Total employment was 81,995 and wages paid $82,026,503.

**sheries and Forests.**—The commissioner of sea and shore fisheries estied that shellfish to the value of $9,621,357 were taken in 1945, and they weighed 60,815,459 lb., with lobsters accounting for $7,938,542 he value. In 1945 the herring catch weighed 79,140,230 lb., worth 11,694.

laine led the nation in the production of white pine lumber in 1944, nearly one-fourth of the national cut for that year.

**lineral Production.**—The leading mineral products of Maine included e, granite, clay (chiefly for bricks), sand, stone and gravel (the last e chiefly for highway construction), cement, lime, feldspar, mica and t. Maine ranked 43rd among the states in mineral production in 1945. total value of its products dropped from $4,692,448 in 1941 to 483,000 in 1945. (E. F. D.)

Table II.—*Value of Principal Mineral Products of Maine, 1945, 1944*

|  | 1945 | 1944 |
|---|---|---|
| llium ore | $ ... | $ 257 |
| products | 5,756 | ... |
| spar (crude) | 62,287 | 47,892 |
| —sheet | ... | 40,803 |
| —scrap | 768 | 1,602 |
|  | 37,662 | 80,732 |
| d and gravel | 771,724 | 710,047 |
| a | 10 | 203 |
| e | 382,414 | 332,736 |
| ellaneous | 1,228,227 | 932,131 |
| l (eliminating duplication) | $2,483,000 | $2,146,000 |

**aize:** *see* CORN.

**akin, Norman John Oswald** (1889– ), Australian statesman and dipnat, was born on March 31 at Petersham, New South Wales. left school at the age of 13 and worked as delivery boy, okseller and patternmaker. He joined the Labour party, was cted to the Australian house of representatives in 1919, eaker of the house 1929 to 1932, and president of the Labour rty in 1936. Makin, who was a member of the advisory war uncil in 1940, was appointed minister of the navy and munins in Oct. 1941. He was given the additional portfolio of airaft production in 1945, and in 1946 was appointed the first stralian ambassador extraordinary and plenipotentiary to the ited States. He led the Australian delegation to the United tions general assembly in London, Jan.–Feb. 1946, when he s the first chairman of the Security council, and was subseently the Australian representative on the Trusteeship coun-. He was an Australian delegate at both sessions of the neral assembly in New York, 1946 and 1947.

**alaya, British:** *see* MALAYAN UNION AND SINGAPORE.

**alayan Union and Singapore.** The political organization of British alaya (including the Straits Settlements and the Federated d Unfederated Malay states) was reconstituted after the liberation of the territory from Japanese occupation at the end of World War II. Two new political divisions were set up, viz: (1) the Malayan union and (2) the colony of Singapore. The former includes all the former Federated and Unfederated Malay states and three of the former Straits Settlements; the latter comprises the city and island of Singapore (as well as the Cocos-Keeling Islands and Christmas Island). A common Malayan citizenship was introduced for the Malayan union. Area, Malayan union and Singapore: 50,962 sq.mi.; pop. (1941 est.): 5,500,000, of which Malays and Chinese in approximately equal numbers together furnish about 82%; there is also a large Indian community. Capital of the Malayan union, Kuala Lumpur (pop. in 1931, 140,000); capital of the colony of Singapore, Singapore (pop. in 1931, 544,000); other chief towns: Ipoh (67,000), Taiping (39,000), Johore Bahru (27,000). Languages: Malay, Chinese, Indian languages and English. Religions: Moslem, Hindu, Buddhist and Christian. Executive authority in each of the two newly constituted units is vested in a governor appointed by the British crown.

There is also a governor-general of Malaya (appointed by the crown) who exercises a co-ordinating authority over both areas as well as over the British territories in North Borneo (*q.v.*).

Governor-general: Malcolm MacDonald; governor of the Malayan union: Sir Edward Gent; governor of Singapore: Sir Franklin Gimson (all appointed in 1946).

**History.**—The new arrangements introduced in 1946 did not escape criticism. In particular the proposal to adopt a common citizenship for the Malayan union met with much opposition. It was urged that the plan was unfair to the Malay community in that it placed Malays and Chinese (the latter of whom were often associated with Malaya only temporarily) on too level a footing. A promise was given that the new citizenship should not actually come into force pending full local discussion of its terms and conditions. Conferences with the Malay rulers and leaders of Malay opinion led to acceptance of the essential elements in the new constitution, subject to certain modifications including the conversion of the union into a form of federation (to be called the Federation of Malaya) under a strong central government. The revised proposals emerging from the discussions with the Malay leaders were conditionally approved by the British government in Dec. 1946, and were referred to the other (non-Malay) elements in the population for their consideration. For this purpose a consultative committee was set up consisting (apart from the chairman) of outstanding nonofficials from all communities other than Malay. The committee, after carefully weighing opinions from every quarter, reported in March 1947. It felt able (while suggesting some modifications) to recommend that the main structure of the revised proposals, as agreed with the Malays, should be preserved intact. Further discussions with the Malays followed during April. The scheme which emerged from all these discussions, and which went some (but not all) of the way to meet the views of the consultative committee, was finally accepted by the British government in July 1947. The general result was, in the secretary of state's words, to achieve the British government's "main policy of establishing in Malaya a strong central government and securing the basis of common citizenship among all the peoples who make Malaya their homeland and the centre of their loyalties." The question whether Singapore (where a legislative council with an unofficial majority, including nine elected members, was to be established early in 1948) should be eventually incorporated in the Federation of Malaya was left over for future discussion.

Schemes approved during the year under the Colonial Development and Welfare act included grants amounting to £19,-

000 for scrub typhus research, and a supplementary grant of £3,740 for general medical research in the Malayan union. Another grant of £4,000 was approved in connection with the appointment of a principal designate to the newly formed Malayan University college.

**Finance and Commerce.**—The standard currency of Malaya is the Straits dollar (value 2*s.* 4*d.*), which is linked to sterling. Revenue (1946) £16,410,000; expenditure £31,198,000. Imports (1941) £96,863,000; exports £131,620,000. Malaya is rich both in mineral and agricultural resources. Its two outstanding products are tin and rubber. In both these commodities there was an immense export trade before World War II, Malaya being, in respect of both of them, the largest producing country in the world. Other exports included copra, pineapples, iron ore and palm oil. There was a large production of rubber after the liberation of Malaya, but the rehabilitation of the tin industry proceeded more slowly.

(J. E. Sh.)

**Malta.** The British colony of Malta covers a group of Mediterranean islands about 58 mi. from the nearest point of Sicily. Only two of these islands, Malta and Gozo, are of importance. The others are small islets. Total area: 122 sq.mi.; pop. (1946 est.): 285,130. Capital and seat of government, Valletta (pop. *c.* 52,000); other towns: Senglea, Cospicua, Vittoriosa and Città Vecchia (Notabile). Religion: almost entirely Roman Catholic. Language: Maltese (believed to be of Semitic origin); English and Italian are also widely spoken. Executive authority in matters concerning defense and external relations is vested in a governor (appointed by the British crown) assisted by a nominated council; in domestic matters it is vested in the governor acting on the advice of an executive council of Maltese ministers. Governor: Sir Francis Douglas (appointed 1946).

**History.**—The constitutional question bulked largely in Malta throughout the year. The terms of a new constitution, as finally approved in 1947, were based on the model of the 1921 constitution and their effect was to confer upon the colony full responsible government in respect of its own internal affairs. The first Malta legislature elected under the new conditions was opened by the duke of Gloucester, on behalf of the British government, on Nov. 10. Apart from the constitutional issue, Malta was still preoccupied throughout the year with measures designed to repair the material and economic damage inflicted by enemy action during the prolonged siege of 1941–42. The Malta (Reconstruction) act, passed by the British parliament in Feb. 1947, not only sanctioned a grant of £20,000,000 from the consolidated fund for making good war damage in Malta but provided that Malta should continue, notwithstanding its acquisition of self-government, to be eligible for benefits under the Colonial Development and Welfare act.

**Finance and Trade.**—Both British currency and local sterling currency are legal tender in Malta. Revenue (1946) £4,306,000; expenditure £4,486,000. Imports (1946) £12,953,000; exports £707,000. The natural resources of Malta are comparatively small in extent. All land suitable for farming is closely cultivated, but the crops produced are designed primarily for local consumption and not for export. Vegetables (mainly potatoes) are the chief exported commodity.

(J. E. Sh.)

**Manchuria.** Manchuria is a large area comprising nine northeastern provinces of China, bounded by soviet Siberia, Outer Mongolia, China and Korea. Area 503,143 sq.mi.; population (1940) 43,233,954, excluding area of 1,338 sq.mi. and population of 1,225,570 in the Kwantung Leased territory, now a part of Manchuria. Population (1939) 39,454,026, including 37,581,000 Manchurians, 1,162,000 Koreans, 642,300 Japanese and 67,700 of other nationalities.

Largest cities (1940) were Shen-yang (Mukden) (1,135,801), Pin-chiang (Harbin) (661,984), Ch'ang-ch'un (554,202), Antung (315,242), and Fu-shun (269,919). The principal religions of Manchuria at the end of 1938, in the order of number of believers, were Buddhism, Taoism, Lamaism, Mohammedanism and Christianity.

**History and Government.**—During 1947, the U.S. tw
quested the Soviet Union to open the port of Ta-lien (D
to international commerce as agreed upon in the Sino
treaty of Aug. 1945. The Soviet Union replied on Aug. 27
that the treaty provided for soviet control of Ta-lien as
a state of war existed with Japan and since there was no
treaty with Japan as yet, the soviet regime would contin
the end of 1947 the southern tip of the Kwantung pe
remained soviet-controlled.

At about the time of the withdrawal of soviet troops
the rest of Manchuria, early in 1946, hostilities began b
Chinese Nationalist and Chinese Communist troops for c
of the area. For many months the Chinese National g
ment controlled the entire southern coast line, except
(Port Arthur) and Ta-lien, and a salient extending inlan
point between Ch'ang-ch'un and Pin-chiang, which in
most of Manchuria's important industrial cities. Chinese
munist forces held most of the rest of Manchuria. A C
Communist offensive in the latter part of 1947 succee
capturing part of the southern coast, reducing the Natio
salient, and cutting railway communications between Natio
strongholds.

**Education.**—In 1939 there were 15,877 primary schools with 1,5
pupils and 37,639 teachers; 238 middle schools with 54,768 studer
2,768 teachers; 40 normal schools with 8,014 students and 520 tea
and 13 institutions of higher education with 3,820 students.

**Finance.**—Monetary inflation continued to be severe in 1947. In
tion to the Manchoukuan yuan (Japanese puppet currency) and
occupation roubles which were still circulating in some parts of
churia, there were also Chinese Communist notes for Manchuria, C
National currency for Manchuria (the so-called Tungpei currency
regular Chinese National notes.

**Trade and Communications.**—Manchuria had virtually no external
in 1947. In 1939 Manchuria had total exports in Manchoukuan y
835,000,000 and imports of 1,800,000,000. (In 1939 the Mancho
yuan equalled 23.65 U.S. cents.) There were about 6,710 mi. of ra
in 1940 and about 30,000 mi. of highways, of which 13,000 mi
suitable for traffic.

**Agriculture.**—Manchuria is a food surplus area in normal times
chief crops are millet, kaoliang, maize and soybeans. Crops in
were above average because of favourable weather conditions, b
creased hostilities between Communists and Nationalists reduced
in 1947. In 1940, the country produced 16,100,000 tons of c
4,200,000 of soybeans, 2,100,000 of potatoes and 75,000 bales o
cotton. There were 1,683,000 cattle, 2,000,000 sheep, 1,250,000
and 2,000,000 horses in 1937.

**Industry.**—Between 1931 and 1945 Manchuria was developed
strong industrial area to supplement Japan's war industry. The
of removal of industrial equipment by soviet forces and of destr
of industrial facilities during the two years of Communist-Natio
fighting, was to reduce the Manchurian economy by the end of
to a state of chaos.

At the end of 1946 U.S. Ambassador Edwin W. Pauley estimated
losses to Manchurian industry because of soviet removals and da
could be valued at $895,000,000. Resulting reduction in Manch
industrial capacity was 71% in the electric power industry, 50
100% in various phases of the iron and steel industry, 80% i
metal-working industry, 75% in nonferrous mining, 65% in liquid
and lubricants, 50% in the cement industry, 50% in the chemica
dustry, 75% in the textile industry, and 30% in the paper and pu
dustry. Even more serious were the losses resulting from the Comm
Nationalist civil war. These were estimated at $1,000,000,00
$1,500,000,000. In 1947 one-half of Manchuria's coal mines were
operated within Nationalist territory and 1947 coal production was
mated at less than 4,000,000 tons. Only 200,000 kw. of electric
capacity remained for the use of industry in Nationalist territory o
a total prewar capacity of more than 2,000,000 kw. Destruction
looting of cotton mills had reduced cotton capacity to about 20
spindles. The civil war also prevented Manchuria's valuable mi
deposits from being mined in anything but a fraction of prewar ou
Minerals and manufactured goods which were produced could not be
tributed even within Manchuria because of damage to the railroads
were already burdened by troop movements.

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**Mandated Pacific Islands:** *see* PACIFIC ISLANDS UN
TRUSTEESHIP.

**Mandates:** *see* TRUSTEE TERRITORIES.

**Manganese.** So far as data were available at the en
1947, Table I shows the production of m
ganese ores in the important countries, and estimates of

Table I.—*World Production of Manganese Ore, 1940–46*

(In thousands of short tons)

| | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|---|
| azil . . . . . | 345.5 | 482.2 | 337.5 | 303.8 | 162.0 | 269.7 | 164.4 |
| ile . . . . . | 12.8 | 39.5 | 78.6 | 125.8 | 48.5 | 8.2 | 17.3 |
| iba. . . . . . | 132.2 | 277.1 | 274.8 | 343.0 | 284.3 | 218.5 | 143.4 |
| old Coast . . . | 488.3 | 549.9 | 761.7 | 589.0 | 528.6 | 675? | 795.2 |
| dia . . . . . | 973.2 | 880.3 | 848.1 | 666.8 | 414.7 | 235.5 | ? |
| uth Africa . . | 454.2 | 491.5 | 434.8 | 241.5 | 117.8 | 126.2 | 227.4 |
| S.S.R. . . . . | 3,086 | 2,638 | 2,010 | ? | 508 | 2,480 | ? |
| ited States . . | 44.9 | 87.8 | 190.7 | 205.2 | 247.6 | 182.3 | 143.6 |
| Total . . . . | 6,250 | 6,040 | 5,620 | 4,390 | 3,040 | 4,250 | ? |

orld total. These countries normally produce about 90% of ie world total, with the remainder scattered among about 35 iinor countries.

Cuban reserves had become exhausted, and operations were ispended late in 1946.

**United States.**—While domestic production had declined om the war peak, operations were being maintained on a relavely much higher level than after World War I. The salient eatures of the industry in the United States are shown in able II.

Table II.—*Data of Manganese Industry in the U.S., 1940–46*

(In thousands of short tons)

| | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|---|
| ine shipments . | 44.9 | 87.8 | 190.7 | 205.2 | 247.6 | 182.3 | 143.6 |
| Metallurgical ore | 30.4 | 73.9 | 178.0 | 195.1 | 241.2 | 174.3 | 134.4 |
| Battery ore . | 10.4 | 11.4 | 12.4 | 10.0 | 6.2 | 8.0 | 8.3 |
| ports . . . . | 1,435.9 | 1,714.6 | 1,583.0 | 1,511.6 | 1,315.7 | 1,311.3 | 1,514.5 |
| Brazil . . . . | 188.4 | 353.9 | 326.5 | 373.4 | 197.4 | 242.3 | 86.0 |
| Chile . . . . | 8.7 | 18.3 | 4.5 | 16.3 | 6.0 | 91.3 | 143.5 |
| Cuba . . . . | 146.3 | 272.6 | 156.3 | 211.8 | 467.1 | 293.6 | 158.7 |
| Gold Coast . | 276.6 | 222.8 | 189.2 | 216.8 | 160.0 | 208.7 | 279.7 |
| India . . . . | 212.2 | 433.3 | 600.8 | 462.9 | 346.8 | 210.5 | 321.3 |
| South Africa . | 199.1 | 306.6 | 234.2 | 127.7 | 41.4 | 62.0 | 243.7 |
| U.S.S.R. . . . | 349.2 | 32.7 | 17.8 | 4.6 | — | 151.3 | 241.9 |
| onsumption . . | ? | 1,310.5 | 1,481.7 | 1,588.3 | 1,593.1 | 1,485.9 | 1,136.7 |

During the first three quarters of 1947 production was 102,oo short tons, and shipments 107,900 tons. Imports had ropped back from the high level of 1946, with 360,633 tons in he first quarter, 338,415 tons in the second quarter and 331,455 ons in the third quarter, a total of 1,030,503 tons, about the ame rate as in 1945. (G. A. Ro.)

**lanitoba.** Central province of Canada, and geographic centre of North America; established July 15, 870; area, 246,512 sq.mi. (26,789 sq.mi. water); pop. (1946 ensus, rev.), 726,923, of which 389,592 are rural. Capital, Vinnipeg, incorporated in 1873 (229,045). Other cities are: t. Boniface (21,613), western centre of culture for Canadians f French origin; Brandon (17,551), Portage la Prairie (7,620), entres of Manitoba agriculture; and Flin Flon (municipal disrict) (7,595), centre in the north for mining.

**History.**—No change in political leadership took place during he year 1947. R. F. McWilliams continued beyond the term f five years as lieutenant-governor, an office symbolic of the rown; while the coalition government under the premiership f Stewart Sinclair Garson, in office from Jan. 1943, remained nchanged with a cabinet of 11, 10 with portfolios.

The government coalition party comprised representatives of he Liberal-Progressive, Progressive Conservative and Social redit groups.

**Education.**—Enrolment in public schools in 1946 totalled 121,272, of hich number 20,904 were in the secondary grades. Correspondence tudents, unable to attend classes because of distance from schools or hysical disability, numbered 2,486 in the school year. Teachers employed ere 4,475. School districts expended $11,292,756.01 during the period. lans were completed for construction of a technical-vocational high chool for the metropolitan area of Winnipeg with dominion, provincial nd municipal financial support. The experiences of the larger school adinistrative unit of Dauphin, established in 1946, were being studied in ther areas, particularly in Brandon.

**Health and Welfare.**—The progress of the provincial-wide health plan augurated in 1945 was advancing slowly as a result of the general hortages in personnel in both medicine and nursing. Generalized public elfare service was given by local field staffs at Winnipeg, Flin Flon nd Dauphin under the jurisdiction of the department of health and pubc welfare. During the year an epidemic of a comparatively mild form f poliomyelitis visited the region. A family court was established in Winnipeg in 1947 under the direction of Judges E. J. Heaney and M. S. Watson.

**Communications.**—Manitoba is served by main and branch lines of the Canadian National and Canadian Pacific railways. Hudson's Bay railway from The Pas to Churchill provides transportation to Manitoba's ocean port. Stevenson airport is the centre for Trans-Canada Air Lines and aviation centre for the region. A $3,000,000 expansion program was underway in 1947. All-weather provincial highways totalled 8,826 mi. in 1947, with the construction program emphasizing transition from gravel to hard-surface; shortages in material were retarding other programs. The Manitoba government telephone system increased to 111,899 substations with a total wire mileage of 336,368. In 1948 the two government radio stations were to be disposed of with the Canadian broadcasting system establishing a 50,000 watt station. There were four private stations operating—two in Winnipeg, one in St. Boniface (a French-speaking station) and one serving the northern areas from Flin Flon.

**Finance.**—The estimated ordinary revenue for the fiscal year ending April 30, 1947, was $24,040,000, and expenditure was $19,555,000. The provincial government paid over half of its additional revenue from the dominion-provincial agreement to the municipalities, designating $1,900,000 of the $2,750,000 share to be devoted to education. One-half of the relief debt cancelled by the dominion was also credited to local government administrations. A 24-year program for wiping out the dead-weight debt was established in 1947, and a sinking fund was created for providing for future debt retirement.

**Agriculture.**—Wheat production decreased from 63,000,000 bu. in 1946 to 43,000,000 bu. in 1947, and in value from $74,970,000 to $58,480,000. The census of 1946 showed 54,448 farms. The weather was also detrimental for sugar beets with a reduction to 9,000 ac. seeded and 72,000 tons produced in 1947. In general, higher returns equalized lower production, so that the total gross value did not vary greatly.

**Manufacturing, Minerals, Fisheries, Furs.**—In 1947 manufacturing continued at a high level, supporting the 1946 (est.) gross of $320,000,000; mineral production in 1946 totalled $11,403,577 for metallics and $5,272,699 for nonmetallics; fisheries, with 7,293 fishermen, produced 28,696,600 lb. with value to fishermen of $3,303,711 and market value of $4,853,738; furs (1946–47), wild catch from 8,078 trappers was $2,582,006, farms $1,500,000, a total of $4,082,006. Mining areas opened were: a lithium deposit northeast of Lac du Bonnet, Lynn Lake with nickel and Snow Lake with base metals, both north of The Pas. Dr. T. H. Hogg, a royal commissioner, was making a survey of existing and future requirements in water power, and the report "Industrial Survey of the Resources of the Province of Manitoba," by Donald, Ross and Co. of Montreal, was completed in 1947. (J. L. J.)

**Manufacturers, National Association of:** *see* SOCIETIES AND ASSOCIATIONS.

**Maple Products.** The U.S. maple sap season of 1947 was better than in the two preceding years but was retarded by cold weather. Syrup production was 2,039,000 gal. compared with 1,328,000 gal. in 1946 and a 10-year (1936–45) average of 2,381,000 gal. Sugar production was only 305,000 lb. which was less than any other year of record except 1945, when only 237,000 lb. were made. High syrup prices favoured the sale of the syrup as against sugar. The number of trees tapped increased, however, to 8,568,000 compared with 8,000,000 in 1946 and a 10-year average of 9,942,000. Continued shortage of labour held down operations in sugar orchards. Most of the crop of syrup was of good quality, and prices were higher than in 1946. (J. C. Ms.)

*Maple Trees Tapped, Sugar and Syrup Production by States, 1947 and 1946*

(In Thousands)

| | Trees tapped | | Sugar made (lb.) | | Syrup Made (gal.) | |
|---|---|---|---|---|---|---|
| State | 1947 | 1946 | 1947 | 1946 | 1947 | 1946 |
| Vermont . . . . . . . . . . . . | 3,463 | 3,298 | 191 | 256 | 777 | 607 |
| New York . . . . . . . . . . . . | 2,874 | 2,688 | 52 | 67 | 684 | 411 |
| Ohio . . . . . . . . . . . . . . | 543 | 532 | 0 | 0 | 160 | 80 |
| Michigan . . . . . . . . . . . . | 577 | 502 | 14 | 2 | 141 | 63 |
| Pennsylvania . . . . . . . . . . | 335 | 291 | 16 | 11 | 90 | 45 |
| Wisconsin . . . . . . . . . . . | 252 | 210 | 1 | 0 | 66 | 28 |
| New Hampshire . . . . . . . . . | 226 | 207 | 10 | 12 | 51 | 36 |
| Massachusetts . . . . . . . . . | 169 | 154 | 11 | 12 | 43 | 38 |
| Maine . . . . . . . . . . . . . | 95 | 87 | 6 | 7 | 17 | 10 |
| Maryland . . . . . . . . . . . . | 34 | 33 | 4 | 5 | 10 | 10 |

**Maps:** *see* CARTOGRAPHY; GEOGRAPHY.

**Marble:** *see* STONE.

**Margarine** (OLEOMARGARINE). The high price of butter stimulated demand for margarine in the United States and resulted in a new production record of 650.000.000

lb. in 1947. A year earlier margarine production had begun to decline from the top wartime output of 500,000,000 lb. in 1943, but the high price of butter caused many consumers to shift to the cheaper product. Average civilian consumption was estimated at 3.7 lb. in 1947 compared with 3.1 lb. in 1946.

The price of margarine followed the price of butter only in general through 1947. In January margarine averaged 39.3 cents per pound while butter averaged 67.1 cents at New York markets. A year earlier when butter averaged 81 cents, margarine stood at 41 cents per pound. By March 1947 margarine reached 42 cents per pound and then levelled off at 36 cents for the rest of the year. Efforts continued to secure the repeal or modification of taxes on coloured margarine and also the reduction of retailers' fees for selling the product, but the dairy interests opposed all such efforts vigorously. (J. C. Ms.)

**Marianas Islands:** *see* TRUSTEE TERRITORIES.

## Marine Biology.

In spite of world-wide political and economic unrest, some productive marine researches were accomplished and some explorations were made during 1947. Probably of greatest interest to scientists and laymen alike were the reports of the actual effects of the Bikini atomic bombs on marine animals and plants. While data gathered was still being examined by the scientists, some authentic accounts appeared which indicated the widespread damage caused by Operation "Crossroads."

**Effects of the Bikini Bombs.**—Of the two bombs released—one above and another beneath the surface of the lagoon—it was the second that demonstrated the widespread dangers of atomic contaminations to marine life. The contaminations were immediately taken up by the marine algae and other plants of the lagoon, and since many marine organisms, especially the bottom-feeding fishes, consumed the plants as food, these soon also became radioactive. Many of the fishes were so affected that they died within three weeks; their decayed bodies then apparently passed the radioactive contaminations back to the plants, and thus was initiated a vicious circle which, it was postulated, might last for many years. Some fishes as well as algae subsequently collected in the lagoon were so radioactive that when placed upon a sensitive photographic film, they took their own pictures. Another result reported was that the fouling organisms of the task-force ships became so radioactive that the action was detected through the steel hulls.

**Expeditions.**—The U.S. navy's expedition into the antarctic, under Rear Adm. Richard E. Byrd, returned with accounts of many new observations on weather and climate as well as some notes on biology. Among new discoveries was the finding of open warm-water lakes scattered here and there among cold and barren wastes. Also returned from Antarctica was the U.S. navy task force coded as Operation "Highjump." As a follow-up, two ice-breakers, the "Burton" and the "Edisto," left for the antarctic late in November to continue scientific surveys of Little America.

The steel ketch "Atlantis" of the Woods Hole Oceanographic institute continued studies over the "mid-Atlantic ridge," a strip of ocean floor presumably extending from Iceland to Antarctica. Mountain peaks and other topographical features of a limited area east of Bermuda were mapped by the use of advanced technical equipment in echo- and sonic-soundings, and mud samples were taken by the "core tube sampling device." In conjunction with the wartime experiments of "Sofar" (code name of U.S. government-sponsored research project on locating survivors at sea), some of the Woods Hole scientists perfected an underwater sound detector so delicate that distress bombs released at a distance of 3,000 mi. were received and their origin "fixed" with accuracy, to within a single square mile of c water.

**New Devices.**—Two undersea cameras of somewhat ne sign were described and their usefulness tested by a Colu university scientist and his assistants. The cameras we two types—one used while "free floating" and the other " pended." The former was used to obtain a series of "shots a maximum depth of 2,700 fathoms (16,200 ft.), but was on the third lowering. It was found that large "photo fl bulbs withstood 60 fathoms' pressure, while small bulbs c be used up to depths of 650 fathoms. For greater depths bulbs were encased in strong optical pyrex bells of specia sign, equipped with 12-volt motor circuit.

A short time later the U.S. navy announced that underw television experiments had been successfully carried out the Bikini bomb tests. By means of a remote-controlled vision camera, fish were observed swimming around a marine 160 ft. below the surface. Such a demonstration op a new field of study in deep-water biology.

The privately endowed Swedish oceanographic floating lab tory, "Albatross," which sailed from Gothenburg in July spent most of the summer of 1947 in the Caribbean sea exp ing the ooze of the sea floor. By means of a revolutionary vice, the perfected "piston core sampler," the bottom m were sampled to a depth of 66 ft. Heretofore, samples of than one-half that thickness were obtained. Bottom muds scientists a clue to the age of the oceans, and with them a tory of adjacent lands. Oceanographers heretofore had g back only to the last glacial period, about 200,000 years The new tube gave promise of extending this research as back as 5,000,000 years or even more. Some other data accu lated by the expedition indicated that the bottom muds f the western North Atlantic floor were comparatively thic over the bed-rock as compared with the Caribbean deposits was determined, by the use of a new sonic device, that mud certain Atlantic areas were as much as 8,000 ft. thick, whil the Caribbean areas they were from 1,000 to 3,000 ft. thick.

**Whaling, Ocean Swell.**—The Low Temperature Resea station, Cambridge, England, and the department of scien and industrial research sponsored jointly an antarctic wha expedition in an effort to determine the potential supply whale meat for human consumption. The factory ship, " taena," equipped with a laboratory for biochemical and phy logical study, left England early in Jan. 1947, to investig factors which influence the quality of whale meat and to de mine what differences techniques of slaughtering, cutting freezing may have on the edibility of the flesh.

A study of ocean swell in relation to storm centres was c tinued by the admiralty research laboratory at Teddingt England. Scientists obtained data along the Cornish coast wh indicated that the longest period exhibited by swell, caused b distant storm, is proportional to the maximum wind velocity that storm. Data on swell were recorded from a tropical sto off the coast of Florida 2,800 mi. from Cornwall, and fr another storm near Cape Horn—almost 8,000 mi. distant.

**Study of Fish Noises.**—In conjunction with the studies natural water noises caused by tides, waves, winds, etc., biolo cal sources of underwater noises were quantitatively analy by the application of perfected technical equipment design and used by the U.S. naval ordnance laboratory at Washingt D.C. Wide fluctuations in noise intensities—seasonal as well diurnal and nocturnal—were recorded on disks. Experiments segregated fishes known to make noises included a prolong series involving the croaker (*Micropogon undulatus*); toadf (*Opsanus tau*); hogfish (*Orthopristis chrysopterus*); spot (*L ostomus xanthurus*); sea robin (*Prionotus carolinus*) and s tfish (*Felichthys felis*).

**Other Studies.**—A comprehensive series of biological studies the Murman coast and Barents sea concerning the herring, d, plaice and haddock was conducted by the Polar Research ard on Sea-fish and Oceanography. An exhaustive report on species of marine algae digesting bacteria was published by e Duke University Marine station; the study included an pendix of all literature related to these organisms and a use- l key.

The sixth report of the Committee on Marine Ecology as lated to palaeontology was released by the Division of Geology d Geography, National Research council (U.S.). One of the st reports from the biological studies at East bay, Antarctica, scribed the preparation of the Weddell's seal (*Leptonychotes ddellii*) for embryological studies, the courtship of the Adelie nguin (*Pygoscelis adeliae*), methods of capturing and feeding tarctic birds and the taking of marine specimens.

Specimens of a common estuarian barnacle (*Eliminus modes- s Darwin*) of Australia were taken from the test panels at ichester harbour, West Sussex, England. Apparently it made e journey on ship hulls and found the north temperate waters itable for growth and development.

A scientist working at the Marine station at Cronulla, New outh Wales, concluded that the age of a fish as well as many atomical and functional characteristics may be analyzed by a udy of the scales.

The history of scientific studies at the Plymouth Marine boratory, England, and its associated station at Lowestoft as recounted by the director of the laboratories. The results tagging salmon in Scottish, Norwegian, Baltic and Canadian aters were released by a scientist at the University of Liver- ol under the Buckland foundation. According to this study, uropean and Canadian salmon have a common feeding ground the North Atlantic, probably near Iceland, and it was recom- ended that a new marking station be established there to cilitate further studies.

It was concluded that "mealiness" of the dory (*Zeus cupen- s*) and the "milky spots" of the stockfish (*Merlucius apensio*) the South Atlantic waters about Capetown are caused by otozoan parasites. Studies using fluorescent techniques gave ick estimates of the distribution of parasitism in infected tis- es, the intensity of infection, and the relative number of fish fected. Among fishes collected in eastern Mediterranean waters by scientists at the Hebrew university, representatives of ten species found east of Suez were found. It was postulated that these had migrated through the canal and had found the Mediterranean waters a suitable habitat.

That the copper content in marine diatoms is of no considerable importance as an antifouling mechanism was concluded by workers at the Millport station. Reasoning that the results of experiments with antifouling cupric oxide containing as much as 105μ copper per gram was of only temporary effectiveness, it was speculated that the antifouling effectiveness of diatom slime which assayed only 164μ copper per gram was of little or no value.

Progress in the cyclic changes in salinities of the North sea was reported upon by the International Council for the Study of the Sea. It was concluded that differentials in the cycles were correlated with changes in the relative direction of the surface currents; the salinities in the northern areas were due to currents from the north, while those in the southern end were associated with the Gulf stream changes. (*See* also OCEANOGRAPHY; ZOOLOGY.)

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(F. M. B.)

**Marine Corps.** From Nov. 10, 1775, the marine corps has been an integral part of the navy with a wider field of endeavour than corresponding forces of other navies. In 1947 the National Security act of Aug. 2, while reorganizing the armed forces, confirmed in law the basic missions of the marine corps which had been effectively fulfilled in World War II. These missions were: to provide balanced landing forces of air and ground units for the seizure of advanced bases, or for other land actions incident to a naval campaign, and to develop the tactics, techniques and equipment for the landing force phases of amphibious operations. The law also provided that the marine corps might be assigned special missions by the president and that it would furnish security detachments for naval installations and capital ships of the fleet.

To accomplish these missions the marine corps in 1947 took two major steps. The first was streamlining of tactical units. By November, divisional organizations had been revised with mobile reinforced battalions as basic combatant units. Elimination of infantry regimental headquarters and other administrative troops increased flexibility, providing 10% more forward

.S. MARINES leaving Peiping, China, in 1947, following a U.S. decision cease aid to both factions in the Chinese civil war. "Ding hao!" scrawled ross the train is the Chinese equivalent of "That's great!"

echelon troops without increase in over-all strength and allowing rapid movement of effective, self-contained units.

The second major step in 1947 was building a balanced, well-trained reserve force. Organized ground units were increased from 17 to 60, and organized air units were increased from 25 to 32. A nation-wide enrolment campaign began in November to bring the reserve to its full planned strength of 100,000.

The 1st marine division and the 1st marine air wing had been withdrawn from their emergency task of assisting the attempted mediation of unsettled conditions in China by June 20, and were based on the west coast by Oct. 31.

Emphasis during the year was largely on training and research. Marine training units supervised manoeuvres of army, navy, air force and marine forces. An experimental helicopter squadron was established in December and a marine pilot set a new world's air speed record of 650.6 m.p.h. on Aug. 25. Fleet marine force units on the east and west coasts and on Guam held manoeuvres from September to December and remained ready for action with the fleets.

Gen. A. A. Vandegrift completed his term as commandant and was relieved Dec. 31 by Gen. Clifton B. Cates. The strength of the regular service on that date was approximately 7,000 officers and 77,000 enlisted men. (A. A. V.)

**Marine Insurance:** *see* INSURANCE.
**Market Gardening:** *see* VEGETABLES.
**Marketing:** *see* BUSINESS REVIEW.

## Marriage and Divorce.

Postwar marriage rates, which in many countries had approached record heights in 1946, began to level off or decline markedly in 1947. While new records had been set the previous year in New Zealand, the Netherlands and the United States, with rates in Australia, Belgium, Canada and France not far behind, the marriages in those countries declined 10%–20% in 1947. Little change was noted in the British Isles and in South America, where a slight drop had occurred in 1946.

The world-wide rise in birth rates continued, reflecting the large number of marriages in 1946. New records were anticipated in the British commonwealth of nations, in most of Europe and in the United States. Although reliable data were not available, it was believed that high birth rates prevailed in Germany, Japan, Russia and those countries under Russian influence. Insignificant declines in the birth rate seemed discernible in Chile, Mexico, Portugal and Sweden. A downward trend in the birth rate was expected to result within three years.

With many of the hasty war marriages already dissolved, there was some evidence to suggest that the unparallelled rates of divorce in 1945 and 1946 might be subsiding.

During the first half of 1947, the number of divorces generally was less than for the corresponding period of 1946.

**United States.**—In the United States about 2,000,000 marriages were recorded, representing a 13% decrease from the 2,300,000 in 1946, the largest number ever recorded (*see* Table). Although nearly 3,500,000 babies were born in 19 all-time record, considerably more than 3,000,000 births forecast for 1947. Because of a drop in the divorce ra the early months of 1947, it was hoped that the record nu of 613,000 divorces in 1946 would show little, if any, inc Little confidence was expressed, however, that any signi reduction was likely in the near future.

*Marriages and Divorces in the United States, 1937–46*

| Calendar year | Number of marriages | Increase (+) or decrease (—) from preceding year per cent | Marriages per 1,000 of population | Number of divorces | Divorces per 100 marriages |
|---|---|---|---|---|---|
| 1937 . . . . . . . . | 1,451,296 | 6.0 | 11.1 | 249,000 | 17.2 |
| 1938 . . . . . . . . | 1,330,780 | — 8.3 | 9.6 | 244,000 | 18.3 |
| 1939 . . . . . . . . | 1,403,633 | 5.5 | 10.9 | 251,000 | 17.9 |
| 1940 . . . . . . . . | 1,595,879 | 13.7 | 12.1 | 264,000 | 16.5 |
| 1941 . . . . . . . . | 1,695,999 | 6.3 | 12.7 | 293,000 | 17.3 |
| 1942 . . . . . . . . | 1,772,132 | 4.5 | 13.2 | 321,000 | 18.1 |
| 1943 . . . . . . . . | 1,577,050 | —11.0 | 11.6 | 359,000 | 22.8 |
| 1944 . . . . . . . . | 1,452,394 | — 7.9 | 10.5 | 400,000 | 27.5 |
| 1945 . . . . . . . . | 1,603,139 | 10.4 | 11.5 | 494,000 | 30.8 |
| 1946 . . . . . . . . | 2,285,539 | 42.6 | 16.2 | 613,000 | 26.8 |

Adapted from *Marriage and Divorce Statistics United States, 1946*, vol. 27, no. 10. Figures for 1946 are provisional; figures for 1945 are revised.

Workshops and institutes on marriage and the family held in many institutions. In 1920 the first college cou preparation for marriage was offered by Teachers colle Columbia university; in 1947 according to the National C (formerly Conference) on Family Relations, about 1,968 t ers were conducting 657 courses in marriage and family li 550 colleges and universities.

Pres. Harry S. Truman authorized a national conferen family life to convene at the White House, May 6–8, 1948. conference was to study the factors that promote stable fa life. Under sponsorship of the Catholic Youth organiza marriage clinics were opened in several cities. In many cities counselling services were set up by different civic or zations.

Research was not lacking. Dr. Lewis M. Terman, in a fu study of his original group of persons gifted in intellig found that the genius is more apt to marry and to have a b chance for happiness in marriage than is the individual of a age intelligence. Dr. Alfred C. Kinsey of Indiana univer Bloomington, released some of his findings in respect to se behaviour of 5,300 white males. Dr. Alan F. Guttmache Johns Hopkins university reported that three-fourths of pl cians received no medical instruction in contraceptive pr dures. Metropolitan Life Insurance company studies sho that chances of marrying at an early age are much greate the United States than in any other country of the wes world, and that the mortality rate for 1947 would probably an all-time low. Dr. Judson T. Landis of Michigan State lege, East Lansing, studied 409 successful marriages of parents of college students. The area requiring the most to achieve satisfactory adjustment was sex relations, follo in order by spending the family income, social activities recreation, in-laws, religious activities and mutual friends. L of adjustment in three or more areas seemed to prevent a h pier than average marriage.

**Other Countries.**—Efforts to stabilize marriage and the f ily were continued. In Australia marriage guidance coun were being established and progress was made toward a fed divorce law to replace the conflicting divorce laws of its se states. A *Conseil Supérieur de la Famille* to exercise all gove mental family functions was proposed in Belgium and the m istry of public health and family initiated plans for a comp hensive program of family life education, counselling cen and family allowances. In Canada while one Gallup poll show that less than one-third of the population was satisfied w modern family life, another poll indicated that a majority the population believed that civil marriage should be prohibit With one divorce for every six marriages in British Colum some agitation to prohibit divorce was evident, especially Quebec. The Canadian Youth commission reported a negat correlation between the divorce rate and occupational stat The International Congress on Family and Population was c vened in Paris, France, June 22–29. Attended by delegates fr many countries, its major topics included housing, wome work, standards of family living, parent-child relationships a functions of family associations. It seemed likely that Franc record birth rate of 1946 would be repeated in 1947.

In England it was reported that the number of marriages d solved rose from 30,000 in 1946 to 50,000 in 1947, but th ost cases arising out of World War II had found their way to e courts by the end of the year. The National Council of omen urged the ministry of education to establish an adeuate educational policy for marriage and family education. arliament received the final report of the Committee on Proedure in Matrimonial Causes which had been appointed in 46 by the lord high chancellor. Among its recommendations, e committee proposed a system of education for marriage, arenthood and family living; specific marriage preparation of ngaged couples; a marriage welfare service, whose function ould be the counselling of couples before or after marriage; e appointment of court welfare officers to give counsel to istressed couples and to endeavour to effect a reconciliation ven after the start of divorce proceedings; the retention of the ecree nisi; and the clarification of the law as to collusion so at lawyers would point out that the law favours reconciliation nd that discussions to that end will not prejudice any divorce roceedings. There was also established a family relations group co-ordinate the interests of organizations concerned with arious phases of marriage and family living. Included in the embership were the British Social Hygiene council, the Cen-al Council for Health Education, the Eugenics society, the amily Planning association, the Family Welfare association, e Marriage Guidance council, the National Council for Ma-ernity and Child Welfare and the Pioneer Health centre. Under e editorship of Dr. David Mace, a monthly bulletin on mar-age and the family was issued by the National Marriage uidance council. The archbishop of York urged that three teps be taken to reduce the divorce rate: raise the dignity and olemnity of the register office marriage; give financial aid to arriage guidance and discourage collusive divorce. The office f the registrar-general reported that nearly 30% of all first abies were conceived before marriage. The British foreign ffice adopted a rule that any diplomat involved in a divorce ction would be liable to expulsion. Bristol university insti-uted a course in marriage for its undergraduates.

Finland set up a system of loans to help young married ouples begin marriage. In Germany marriage, birth and di-orce rates continued to be high. The University of Göttingen stablished an institute for heredity and eugenics. With the re-umption of bimonthly publication of *Marriage Hygiene* in ombay, under the editorship of Dr. A. P. Pillay, it seemed ikely that reliable reports on family life in India would soon e available. In Japan the ministry of welfare established a arriage bureau to help young people find suitable mates, an bjective likewise encouraged by the increase in coeducation. everal birth-control clinics opened and a number of parent-eacher associations were formed. News from Russia was still ifficult to obtain, but meagre reports indicated that marriage t young ages and large families were being encouraged. Addi-ional restrictions on divorce were reported, and the cost of a ivorce was estimated to be 100–700 times the cost of marriage.

Interest in preserving and enhancing family life was renewed n South America. Argentina, Bolivia, Brazil, Chile and Uru-uay took the first steps toward establishing a system of family llowances or family wages. Caracas, Venezuela, was selected s the meeting place for the ninth Pan-American Child congress. n Uruguay, a bill of rights for women was adopted which gave hem legal equality with men, permitted divorce by mutual onsent without any reasons having to be advanced and re-uired both spouses to contribute to the expenses of the home n proportion to their means.

Within three years the National Housing authority of Spain rovided 30,000 low-cost housing units and made plans for an dditional 60,000. Sweden's marriage and birth rates showed ittle change from 1946.

(*See* also BIRTH STATISTICS; CENSUS DATA, 1947.)

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**Marshall, George Catlett** (1880– ), U.S. army officer and statesman, was born at Uniontown, Pa., on Dec. 31. Commissioned second lieutenant in 1901 after completing his studies at the Virginia Military institute, he was graduated from the Army Staff college in 1908 and advanced through the grades to general of the army in 1944. He was made chief of staff on Sept. 1, 1939, the day Adolf Hitler started World War II by invading Poland. An able administrator, Marshall built up the army from its Pearl Harbor strength of 1,500,000 men to 8,300,000 by the close of the war in Europe, May 1945.

He resigned as chief of staff Nov. 20, 1945; a week later, he was sent to China as U.S. ambassador with the task of finding a solution to the civil war there. But his 13 months of negotiations proved fruitless and on his return to Washington he blamed extremists of both sides for balking his peace efforts. On Jan. 7, 1947, President Harry S. Truman announced Marshall's appointment as successor to James Byrnes as secretary of state.

Marshall's first appearance in his new role as a statesman was at the Moscow session of the council of foreign ministers in the early spring of 1947. However, little was accomplished and after the parley's adjournment Marshall was cautiously optimistic on chances of a final settlement, although he did criticize the Russian attitude on Germany.

In a speech at Harvard university on June 5 he proposed that European countries take the initiative in outlining their reconstruction program, promising U.S. aid once this had been done. This proposal was subsequently translated into the Marshall plan, or the European Recovery program. In its first phases the Marshall plan engendered considerable enthusiasm; later it met unequivocal soviet opposition as well as increasing hostility in congress.

In the summer of 1947, Marshall attended the Inter-American defense parley in Rio de Janeiro and came back with a hemispheric defense treaty that won overwhelming congressional endorsement. Then on Sept. 17, he made his celebrated "Little Assembly" speech before the United Nations, proposing establishment of a special permanent committee within the general assembly to circumvent Russian "frustration of the collective will." However, he found more "frustration" in the London meeting of the council of foreign ministers and on Dec. 15, Marshall blamed Russia for collapse of these talks.

**Marshall Islands:** *see* TRUSTEE TERRITORIES.
**Marshall Plan:** *see* EUROPEAN RECOVERY PROGRAM.

**Martin, Joseph William, Jr.** (1884– ), U.S. politician, was born on Nov. 3 in North Attleboro, Mass. After graduating from high school, he worked as a reporter on the *Attleboro Sun,* and when he was 24 he bought *The Evening Chronicle* of North Attleboro.

In 1911, running as a Republican, he was elected to the Massachusetts legislature. He was elected to the federal house of representatives 13 years later (1924) and was re-elected with clockwork regularity even through the lean New Deal days. In 1939, he became minority speaker of the house, a post he held until the opening session of the 80th congress (Jan. 1947), when he became speaker of the house. An astute legislator, Martin was respected for his ability to weld the house Republicans into a solid voting bloc on crucial issues.

On July 10, 1947, Martin virtually became vice-president by house passage of a bill which placed the speaker of the house immediately after the vice-president in the line of presidential succession. In the first session of the 80th congress, he pledged the G.O.P. majority to a program of reductions in taxes and government spending. On foreign policy, in common with most of his Republican colleagues, he denounced the "communist menace," but was only lukewarm in his support of the Marshall plan and similar administration programs.

**Martinique:** *see* French Overseas Territories.

**Maryland.** Long known as the "Old Line state," also as the "Free state" of the U.S.A., Maryland lies on the Atlantic seaboard between Pennsylvania on the north and Virginia on the south. The total area is 10,577 sq.mi., of which 690 are water. Population (1940) 1,821,244; urban, 1,080,351; rural, 740,893; white, 1,518,481 (foreign born, 81,715); nonwhite, 302,763. On July 1, 1947, the bureau of the census estimated the civilian population of the state at 2,215,000. Capital, Annapolis (pop. 1940, 13,069); other cities: Baltimore (859,100), Cumberland (39,483), Hagerstown (32,491), Frederick (15,802) and Salisbury (13,313).

**History.**—William Preston Lane, Jr., Democrat, was elected governor in 1946 for a four-year term, which began on Jan. 8, 1947. The regular session of the general assembly, held in March 1947, enacted a 2% retail sales tax, exempting foods and medicines; authorized an improvement in the school system and an increase in teachers' salaries; approved a program for building arterial highways and bridging the Chesapeake bay; authorized a project for improving the facilities of mental hospitals; made provision for sharing state revenues with Baltimore city and other political subdivisions.

**Education.**—In 1946–47 there were in the state (including Baltimore whose schools are separately administered) 892 public elementary and occupational schools, with a total enrolment of 201,184 and a teaching staff of 5,459. There were 223 secondary and vocational schools, with an enrolment of 99,370 and a teaching staff of 4,115. In the elementary schools about one student in four was a Negro; in the higher schools about one student in six was a Negro. The Catholic school enrolment for the entire state was 48,677 white and 2,268 Negro, with a total of 50,945. The enrolment in non-Catholic private schools was 10,651 white and 134 Negro, with a total of 10,785. The state superintendent of schools in 1947 was Dr. Thomas G. Pullen, Jr.

**Social Insurance and Assistance, Public Welfare and Related Programs.**—During June 1947, old-age assistance was extended to 11,819 persons (cost, fiscal year ended June 30, 1947, $4,290,231); 467 needy blind persons were assisted (cost, $187,464); 4,839 families received assistance for the care of dependent children (cost, $2,418,339). Unemployment compensation benefits paid during the benefit year ended March 31, 1947, were $18,187,041 compared with $17,619,690 in the preceding year.

Correctional institutions and the number of inmates on Oct. 16, 1947, were as follows: Maryland penitentiary, 1,193; Maryland house of correction, 1,398; Maryland reformatory for males, 739; Maryland reformatory for women, 195 (85 white, 110 Negro). Four institutions were maintained for juvenile delinquents, white and Negro; total number of inmates, Sept. 30, 1947, 647.

**Communications.**—During the fiscal year ended June 30, 1947, the state roads commission expended $20,828,377. The total mileage of roads in the state highway system was 4,490.64; in the county systems, 12,826.32; total, 17,316.96. At the close of the year the total mileage of line-haul steam railroads 1,316; of switching and terminal companies, 138; of ele railways (interurban), 65.24. The state aviation commi reported 36 commercial airports licensed on Nov. 30, 194 military airports; 1,886 registered pilots; 877 recorded pers planes. As of Nov. 30, 1947, there were 354,000 telephone scribers, total number of instruments, 516,000.

**Banking and Finance.**—As of June 30, 1947, the state commissioner reported 106 state banks and trust comp with total deposits of $845,674,692 and total resources of $ 050,310 and 9 mutual savings institutions with deposits of $ 873,195 and resources of $436,173,536. On the same date t were 63 national banks in the state with deposits of $668. 000 and resources of $718,929,000. The resources of all and national banks in Maryland on June 30, 1947, tota $2,071,152,846. As of Dec. 31, 1946, the assets of 394 savi building and loan associations in Maryland were compute $255,603,959.

State appropriations for the year ended June 30, 1947, $67,260,816; expenditures, $79,906,483; gross debt, $16, 000; net debt, $14,015,904; general fund surplus, $13,785,17

**Agriculture.**—During the first 8 months of 1947 Mary farmers received $66,350,000 from the principal crops c pared with $51,968,000 in the like period of 1946. Lives and livestock products brought a total of $100,681,000 as c pared with $85,036,000. The aggregate from all such sou was $167,031,000 against $137,004,000 in the 1946 period.

Table I.—*Leading Agricultural Products of Maryland, 1947 and 1946*

| | 1947 | 19 |
|---|---|---|
| Barley, bu. | 2,409,000 | 2,174 |
| Corn, bu. | 16,092,000 | 17,328 |
| Oats, bu. | 1,184,000 | 1,254 |
| Wheat, bu. | 11,955,000 | 7,320 |
| Hay, tons | 620,000 | 63 |
| Tobacco, lb. | 34,560,000 | 40,500 |
| Potatoes, bu. | 2,074,000 | 2,244 |
| Tomatoes, market, bu. | 1,105,000 | 975 |
| Tomatoes, processing, tons | 239,000 | 139 |

**Manufacturing.**—As of June 30, 1947, the Maryland ployment security board estimated the number of manufac ing establishments in the state at 3,086, employing 229,928 sons; the number of nonmanufacturing establishments (cove by unemployment compensation) at 31,918 employing 307, persons; total, 34,004 establishments employing 537,299 sons. The average weekly pay roll, 3 months ended June 1947, was: manufacturing, $155,548,951; nonmanufactur $163,801,624; total $319,350,575. The Maryland commissio of labour and statistics, as of Oct., 1947, estimated the aver weekly wage in manufacturing at $50.60; average hourly wa $1.21; average hours worked per week, 41.

**Mineral Production.**—The latest detailed figures on mine production available from the bureau of mines in 1947 shown in Table II.

Table II.—*Leading Mineral Products of Maryland, 1945*

| | Short tons | Valu |
|---|---|---|
| Coal | 1,765,000 | $6,107, |
| Lime | 66,675 | 502, |
| Sand and gravel | 2,898,808 | 2,694, |
| Stone (other than stone used in cement manufacture and crushed unclassified stone). | 1,242,930 | 1,851, |
| Talc and ground soapstone | 14,707 | 149, |

**Oysters.**—The commercial catch of oysters in Maryland ters during the season 1946–47 totalled 2,157,838 bu., co pared with 2,399,111 bu. during the 1945–46 season. (J. S. A.)

**Masonic Fraternity:** *see* Societies and Associations.

**assachusetts.** A north Atlantic state of the U.S.A., Massachusetts was admitted to the union Feb. 6, 1788. It is popularly known as the "Bay state." ea: 8,257 sq.mi., including 350 sq.mi. of water; population ensus 1940): 4,316,721; (1946 est.) 4,567,621, of which ap-oximately 88% was urban, 12% rural. The capital is Boston op. 770,816). Other cities of 100,000 or more inhabitants e: Worcester (198,741); Springfield (159,896); Fall River 15,062); Cambridge (111,124); New Bedford (110,341); merville (102,177); Lowell (101,229) and Lynn (105,153).

**History.**—Robert F. Bradford (Rep.) was elected governor in 46 for a two-year term. Other constitutional officers serving 1947–48 were: lieutenant governor, Arthur W. Coolidge ep.); secretary of state, Frederick W. Cook (Rep.); attorney neral, Clarence A. Barnes (Rep.); state treasurer, Laurence . Curtis (Rep.); auditor, Thomas J. Buckley (Dem.).

During the legislative session several notable measures were lopted, including the enactment of a law (Slichter act) pro-ding procedures in labour disputes endangering the public alth and safety; a measure to stimulate construction of vet-ans' housing by cities and towns with state guarantees against sses; the establishment of a board of education having super-sion and control over the department of education; the au-orization of a $12,000,000 bond issue for further development the Logan International airport at East Boston; approval of ıblic ownership of the Boston Elevated railway, replacing ivate ownership with the establishment of the Metropolitan ransit authority. The state budget of $198,000,000 for 1947–48 as balanced for the first time after 1851 without assessing a ate tax upon cities and towns—a method formerly employed obtain sufficient funds.

**Education.**—In 1947 there were 1,771 public elementary hools with 364,248 pupils and 13,297 teachers; 177 junior high hools with 80,738 pupils and 3,748 teachers; 276 senior high hools with 145,226 pupils and 6,567 teachers. There were teachers' colleges operated by the state, with a total enrol-ent of 3,175 students and 301 instructors. Total cost of public hool education in Massachusetts was $91,496,496.20 of which e commonwealth contributed approximately 9%.

**Social Insurance and Assistance, Public Welfare and Re-ated Programs.**—For 1947, the estimated total of public wel-are expenditures for cities and towns (with federal and state id) was $69,812,457. Of this amount, $51,817,376 was spent or old-age assistance; contributions to this total were: federal 5.1%, state 38.8%, local 16.1%. There was $10,540,689 spent s aid to dependent children; contributions: federal 27.5%, tate 33.3%, local 39.2%. There was $7,454,392 spent on gen-ral relief; contributions: state 22%, local 78%. The average ionthly case load was: old-age assistance 84,648 persons, aid to ependent children 9,068 families, general relief 15,202 cases.

For the fiscal year 1948 the commonwealth appropriated 4,133,393 to maintain correctional institutions, including the tate prison (611 inmates), prison colony (706), reformatory or men (806), reformatory for women (402), state farm 2,024).

**Banking and Finance.**—Revenue receipts of the common-ealth for the fiscal year ending June 30, 1947, were $285,569,-04.30. Of this figure, $80,000,000 was realized from a bond ssue to meet veterans' bonus requirements. Other bond and ote issues contributed $17,550,000 to the total revenue re-eipts. Governmental costs totalled $275,601,267.22 including 99,054,575 for the veterans' bonus. The direct debt was $122,-82,800, less a sinking fund of $4,138,941.37 for a net of $118,-43,858.63.

Assessed valuations in the state totalled $6,342,903,249 and e average local tax rate on real estate was $39.11 per $1,000.

Table I.—*Financial Report Covering the Year 1947*

| | |
|---|---|
| Savings banks | 190 |
| Trust companies | 60 |
| Co-operative banks | 175 |
| Banking companies | 12 |
| Savings and loan associations (state law) | 4 |
| Credit unions | 459 |
| National banks | 121 |
| Federal savings and loan institutions | 26 |
| Total number of all banks in the state | 1,047 |
| Total assets of all banks in the state | $9,931,743,608.18 |
| Total assets, federal savings and loan institutions | 223,891,453.50 |
| Total number of depositors in all banking institutions in the state | 4,276,521 * |

*Does not include depositors in national banks or shareholders in federal savings and loan associations.

**Agriculture.**—The total value of 1947 crops and livestock products was $176,784,000. The total acreage harvested during 1947 was 457,900 ac.

Table II.—*Principal Agricultural Products of Massachusetts, 1947 and 1946*

| Crops | Production 1947 | 1946 |
|---|---|---|
| Corn, bu. | 1,620,000 | 1,634,000 |
| Cranberries, bbl. | 470,000 | 550,000 |
| Apples, bu. | 2,864,000 | 1,784,000 |
| Hay, tons | 629,000 | 650,000 |
| Potatoes, bu. | 3,458,000 | 3,498,000 |
| Tobacco, lb. | 11,507,000 | 10,789,000 |
| Onions, bags | 468,000 | 624,000 |
| Oats, bu. | 231,000 | 259,000 |
| Asparagus, crates | 132,000 | 136,000 |

**Manufacturing.**—In 1947 there were 1,808 local unions in the commonwealth with a total membership of 522,104 (388,736 males and 133,368 females).

Table III.—*Value of Principal Products Manufactured in Massachusetts in 1947*

| Products | Estimated Value |
|---|---|
| Woollen and worsted goods | $ 590,000,000 |
| Electrical machinery, apparatus and supplies | 499,000,000 |
| Cotton goods | 311,000,000 |
| Boots and shoes, other than rubber | 301,000,000 |
| Clothing, men's and women's, including work clothing | 248,000,000 |
| Foundry and machine-shop products | 217,000,000 |
| Rubber goods, including rubber tires and inner tubes | 202,000,000 |
| Printing and publishing, book and job and newspapers | 177,000,000 |
| Bread and other bakery products | 168,000,000 |
| Leather, tanned, curried and finished | 163,000,000 |
| Paper and wood pulp | 162,000,000 |
| Boot and shoe, cut stock and findings | 111,000,000 |
| All other industries | 2,675,000,000 |
| Total value | $5,824,000,000 |

(R. F. B.)

## Massachusetts Institute of Technology.

The year 1947 marked the peak demand for higher education in the immediate postwar period. The institute's enrolment in Sept. 1947 showed a 10% increase over 1946 and 87% over the normal prewar student body of 3,000. Although the percentage of veterans among the students remained approximately 60% for the institute, the percentage of veterans in the freshman class was only 25%. Of the total student body, 1,500 were graduate students.

The physical plant of the institute increased markedly during the year; four projects being completed and four begun. The construction of the Gas Turbine laboratory was completed; an army-built structure and 46 acres of land in Lexington, Mass., were acquired as a field station for the Laboratory of Nuclear Science and Engineering; two veterans' housing projects were occupied by a total of 270 families; and a new dining room was opened in the graduate house.

In addition, the institute acquired a large surplus navy drill shed which was to be moved to Cambridge and converted into an athletic cage.

Construction was begun on a new 360-man senior house and on a navy-financed, M.I.T.-operated supersonic wind tunnel valued at $2,600,000. Plans were completed for the Charles Hayden Memorial library.

Government and industry continued to sponsor research at M.I.T. on an extensive scale. Of its over-all budget of $17,000,000, the institute's research budget for 1947 was of the order of $10,000,000.

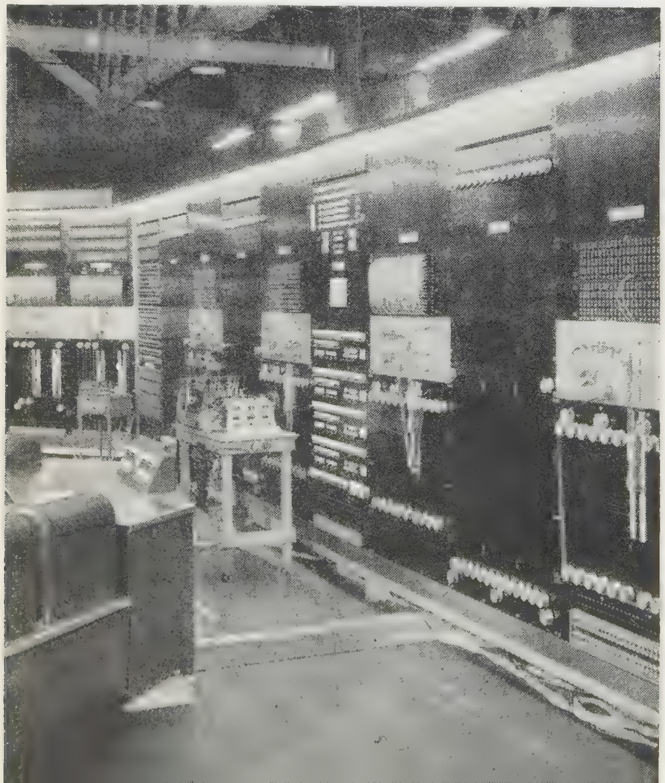
(For statistics of endowment, enrolment, faculty, library volumes, etc., *see* Universities and Colleges.) (K. T. C.)

## Mathematics.

By the end of 1947 most of the mathematical literature for the years of World War II had become generally available, but international communications were still so slow that much of the mathematics which attracted attention in 1947 had been published in 1946 or even earlier. The most striking example was the work of L. Cesari (Italy) on the area of a curved surface, published from 1942 onward but unknown outside Italy until 1947. Not only did Cesari's work overlap much work done in the U.S.A. at about the same time, but it also included the first solution of one of the most significant problems in the field. In Europe, publication was slow, in most countries slow even as compared with the war years. One effect of this delay in publication was that several results of importance were announced with only indications of proofs, so that it was not possible for other mathematicians to verify them. Thus, G. Fano (Italy) announced a proof that the general cubic variety in three-space is irrational, thus settling a long-outstanding problem in classical algebraic geometry. W. Brödel (Germany) claimed to have proved the famous four-colour theorem, which states that any map on a sphere, containing no disconnected countries, can be coloured with four colours so that no two adjacent countries have the same colour. An unexpected result in the theory of the distribution of the values of a meromorphic function was announced by D. Dugué (France).

A particularly significant contribution to algebra was made by R. Brauer (Canada) in proving a conjecture of Emil Artin in group theory, which has important consequences in number theory and the theory of representations of groups. The unitary representations of the Lorentz group were studied by V. Bargmann (U.S.A.) and by I. Gelfand and M. Neumark (U.S.S.R.). The modern "abstract" theory of algebraic geometry received contributions from O. Zariski (U.S.A.), who also delivered the annual colloquium lectures of the American Mathematical society on this subject, and from A. Weil (Brazil), whose b *The Foundations of Algebraic Geometry* was one of the important books of the year.

THE MARK II, largest mathematical calculator in the world at the time of its construction in 1947, was built for use by the U.S. navy in solving problems arising in its ballistics and guided-missiles research program.



Many advances were made in number theory. In the U.S.S U. Linnik and N. Tchudakoff gave new proofs of Vinograd theorem that all large odd numbers can be represented as sum of three prime numbers; in Great Britain several invest tors, notably L. J. Mordell, K. Mahler and H. Davenp studied problems of the geometry of numbers and Diophant approximation; in Norway A. Selberg continued to make pr ress in the problem of the distribution of the zeros of the F mann zeta function; in Hungary P. Turán gave a new and pro ising formulation of the same problem. Much attention attracted by work of L. Schwartz (France) on generalized c cepts of function and derivative, which placed certain ope tional methods on a satisfactory foundation and promised lead to progress in several fields, notably in the study of h monic functions. M. L. Cartwright and J. E. Littlewood (Gr Britain) published striking results in the theory of nonlin differential equations. Advances in the theory of trigonome integrals were made by A. Zygmund (U.S.A.) and F. W (U.S.A.). An unexpected simplification in the theory of Ban spaces was found by W. F. Eberlein (U.S.A.).

Interest in applied mathematics continued high. The bo *Theory and Applications of Mathieu Functions* by N. W. M Lachlan (Great Britain) was the first full-scale treatment of subject. Numerous tables of special functions appeared, testi ing in part to the power of the modern high-speed calculat machines. Several new machines of various types were un construction in the U.S.A., Great Britain and Germany; wh completed, they would be both faster and more versatile th their prototypes.

Bibliography.—For a complete bibliography of papers in pure applied mathematics, *see* the abstracting journal *Mathematical Revi* vols. 8 and 9 (1947 and 1948). (R. P. Bo.

**Maurice and Laura Falk Foundation, The:** *see* So eties and Associations.

**Mauritania:** *see* French Overseas Territories.

## Mauritius.

An island in the Indian ocean lying about 5 mi. E. from Madagascar; a British colon Area: 720 sq.mi.; pop. (1946 est.) 428,273, including 144,8 persons of European, African or mixed descent, 271,636 India and 11,836 Chinese. Mauritius and dependencies had an area 807 sq.mi. with a pop. (1944 census) of 432,648. Capital: Po Louis. Governor: Sir Donald Mackenzie-Kennedy.

**History.**—Proposals for the revision of the constituti were promulgated in Oct. 1947. They provided for an extensi of the franchise (including the granting of votes to women and for a revised legislature consisting of the governor (as pre dent), 3 ex officio members, 12 nominated unofficial membe and 19 elected members. The executive council was to inclu 4 members selected by the legislature.

**Finance.**—The monetary unit in the colony is the Indian rupee. Budg (actual 1944–45) revenue Rs. 34,713,517; expenditure Rs. 31,832,7 public debt (June 30, 1945) Rs. 2,563,119 (not including foreign debe ture debt, of the municipal corporation of Port Louis).

**Foreign Trade.**—(1944) exports Rs. 46,292,873; imports Rs. 65,787,7 Chief exportable products are: sugar, rum, aloe fibre and copra.

## Meat.

U.S. production of all meats increased slightly in 19 to an amount not much below the record of 194 largely because of the increased output of beef. The total f 1947 was estimated at 23,200,000,000 lb. compared with 22,96 000,000 lb. in 1946 and a five-year (1937–41) average of 17,67 000,000 lb. Outstanding feature of the year was the large nu ber of cattle and calves sold for slaughter. The total me supply in 1947 amounted to 156 lb. per capita compared wi

*U. S. Meat Production 1947, 1946 and Average 1935-39*

(In millions of pounds, dressed weight)

| | 1947* | 1946 | Average 1935-39 |
|---|---|---|---|
| ef. | 10,500 | 9,378 | 6,936 |
| al. | 1,600 | 1,440 | 1,038 |
| nb and mutton. | 800 | 970 | 871 |
| k. | 10,300 | 11,173 | 7,337 |
| Total. | 23,200 | 22,961 | 16,182 |

*Preliminary estimate.

2.8 lb. in 1946 and the prewar average of 125 lb. during 35–39. The general decline in meat animals was expected to duce this supply sharply in 1948.

The meat supply was made up of a record proportion of ef and veal, less lamb and mutton and somewhat less pork. he increase in beef and veal was caused by the increase in arketing of cattle and calves which reached a record total of out 36,000,000 head—a larger number than the previous rec-d of 1945. In prewar years the number slaughtered ranged om 24,000,000 to 26,000,000 head. The number of all cattle farms Jan. 1, 1947, was less than a year earlier, and the rge marketings in 1947 would result in smaller beef produc-on during 1948. The per capita domestic consumption of beef as estimated at 70 lb.—near the record of 73 lb. consumed in 45.

Pork production in 1947 was about 8% lower than in 1946 d provided an average of 70 lb. per capita compared with 78 . in 1946 and the record of 99 lb. in 1943. The pig crop was naller because of the poor prospects for corn early in the ear. Lamb and mutton production continued to decline, to 00,000,000 lb., the smallest amount since 1929. Per capita onsumption was only 6 lb. compared with the total meat con-umption of 156 lb.

U.S. exports of meat were estimated at 519,000,000 lb. in 946–47, compared with 1,300,000,000 lb. exported in 1946. The d of U.N.R.R.A. operations reduced military needs, and naller commercial shipments accounted for the shrinkage.

Prices of meat animals in 1947 ranged about 50% higher an in the previous year. The rise in livestock prices broke in eptember, then resumed its advance to new records. In Jan. 947, prices for hogs averaged $21.80 per cwt., rose to $24.30 in pril, then after a decline to around $23 for three months, gain advanced to a new high of $27.60 per cwt. in October, ut declined to $24.90 in December. Retail prices of pork prod-cts followed this trend in general. Prices of beef steers started he year at an average of $17.30 per cwt., advanced steadily to 20.20 in September, then declined slightly to the end of the ear. Veal calves held more steady, starting the year at $18 per wt. and fluctuating between this level and $22.30 per cwt. in December. Veal was one of the less expensive meats at retail nd the supply was large, increasing as the year advanced. amb and mutton held the advances made in late 1946 to around 19 per cwt., and rose to $21.60 in September. The slaughter f lambs and sheep was below that of 1946 as well as below the verage for 1936–45. Retail supplies were scarce in many mar-ets and sold at a premium.

World meat supplies were estimated as slightly larger at the eginning of 1947 than a year earlier, the decreases in North merica being offset by increases in South America, Europe and frica. Canada continued to impose its wartime embargo on xports of cattle to the United States, to meet commitments to reat Britain. No stocker and feeder cattle was received from anada.

No imports of cattle or other livestock was allowed from Mexico because of the outbreak of the foot-and-mouth disease. rdinarily the U.S. had received about 400,000 head of stocker attle to be finished on U.S. corn. In Argentina cattle produc-ion continued at about the average of previous years, but consumers were taking most of the higher grades of beef. Exporters found it difficult to fill their orders from Great Britain. Exports of frozen and chilled beef were about double that of a year earlier, about 90% of which went to Great Britain. Hog production was slowly recovering in Europe. (*See* also BACON; CATTLE; HOGS; LIVESTOCK; POULTRY; PRICE ADMINISTRATION, OFFICE OF; SHEEP.) (J. C. Ms.)

**Medals:** *see* DECORATIONS, MEDALS AND BADGES—MILITARY, NAVAL AND CIVIL.

**Mediation Board, National:** *see* NATIONAL MEDIATION BOARD.

**Medical Association, American:** *see* AMERICAN MEDICAL ASSOCIATION.

## Medical Rehabilitation of Disabled Veterans.

The most important advance of medical rehabilitation in 1947 was its extension into the field of chronic disabilities of long duration. Its greatest application, up to this time, had been in acute illnesses and injuries, largely of the wartime variety. The experience gained in World War II proved most useful in the acute disabilities of peace; and medical rehabilitation continued to play a large role in the treatment of industrial and other accident cases, and in cases of illnesses requiring protracted hospitalization, such as tuberculosis.

In entering the field of the chronic disability, medical rehabilitation continued to encounter new problems. There was the problem of the greater average age of the patient, which has an important bearing upon his physical resiliency, his powers of adaptation, his aptitudes and his motivation. The rehabilitation of the war injury started with the great advantage of the youth of the patient.

Of the disabled in older age groups, the largest was that of the chronic neurological cases. Of these, paralysis resulting from a brain haemorrhage furnished the greatest proportion. Some of these recovered spontaneously to the point of self-care and some degree of ambulation; but few recovered spontaneously to the point of further employability. A surprisingly large proportion were doomed to a life of total, or almost total, helplessness and were dependent upon constant nursing or attendant care.

This placed a burden upon the family which only a small percentage of families were able to shoulder; and this type of case soon found its way into a hospital or a home for incurables. These cases continued to represent a large and increasing proportion of the admissions to veterans' hospitals and domiciliary homes, and little attempt was made to improve their basic condition. The great majority remained in these institutions so long as they lived. The magnitude of this problem had been shown in a survey by the United States public health service, in 1936, which revealed that 11.4 per 1,000 of the people of the United States were chronic invalids, and that, at ages 65 to 74, this proportion had risen to 53.5 per 1,000. With the gradual increase of the older age groups in all populations, the increase in the numbers of chronic invalids would exceed the proportionate increase with age.

Late in 1946, a pilot program of rehabilitation of chronic neurological cases was instituted in the Minneapolis Veterans' Administration hospital under the direction of Doctors A. B. Baker and Joe R. Brown. During the first year of this program, 105 chronic invalids, largely chronic neurological cases, were treated. Most of the patients were above the age of 50 yrs., and about half had been in hospitals for long periods, some bed-ridden for several years.

Of these 105 cases, 49 were discharged from the hospital, capable at least of full self-care. Of those discharged, 23 were considered employable and 11 as partially employable; and 4 others were capable of partial self-care. Of the 52 remaining cases in which rehabilitation was begun, 40 were still under treatment in Oct. 1947, of whom 19 gave promise of early discharge; 2 had died, and only 10 had become discouraged and refused further efforts at rehabilitation.

The experience in this program indicated that the earlier rehabilitative treatment is instituted, the more rapid and the better the results. The importance of starting rehabilitation as soon as the immediate danger of a cerebral accident has passed is apparent in the results obtained. The reasons for this are not only physical, such as the prevention of muscular atrophy, but also psychological, because motivation for recovery generally is lessened as the patient becomes accustomed to inactivity and tends to accept his disability.

The social worker continued to be a most important member of the therapeutic team in the rehabilitation of the chronically disabled. Arrangements had to be made for the reception of the patient into his home and for such employment of which he was capable. One interesting fact uncovered in the social service part of this program was that families usually were happy to have the patient home again if only he were capable of self-care. It was the economic burden imposed by their helplessness that forced most of these cases into institutions.

Since the cost of hospitalizing the chronically disabled was almost as heavy as that of acute cases, the savings to be made by medical rehabilitation were enormous. The United States Veterans' administration estimated conservatively that the average duration of treatment in a hospital of one of these severely disabled chronic neurological cases was five years, and that, at 1947 costs, the annual charge for each case was approximately $4,375. At these figures, the rehabilitation of the 53 cases already discharged from the Minneapolis Veterans' Administration hospital represented a saving of more than $1,000,000.

Manual arts therapy was early made a part of medical rehabilitation in U.S. veterans' hospitals. This program was designed to start the vocational re-education of the patient before his release from hospital. Initially, each such patient was started on a program pointed toward a specific vocation, with the expectation that he would complete his training in a special school after leaving the hospital. The experience of two years, however, cast doubt upon the wisdom of restricting the early retraining of such patients to a single vocation; and it was now planned to direct this phase of retraining toward special broad skills rather than toward specified vocations. Thus, instead of training in watchmaking, or radio repair, the patient would be given basic training in the use of small precision tools, which skill could later be applied to a number of different vocations. This new course was known as Precision Mechanics. The principal reason for the change was that industrial firms much preferred a prospective employee to possess a special broad skill rather than a training completed elsewhere. (P. R. Hy.)

## Medicine.

Many new products of great importance were added to the medical armamentarium during 1947, and new facts were discovered about the sulfonamides, the antibiotics and the radioactive isotopes which were the centre of interest during 1946.

Most conspicuous was the official report on streptomycin in tuberculosis made as a result of an intensive study carried out under the auspices of the Veterans' administration. As the year ended, however, attention was attracted to the development of a new antibiotic called chloromycetin, and to evidence that a combination of a sulfonamide and an antibiotic might be efficient in certain types of infection in which either alone was not curative. This is known scientifically as synergism.

**Antibiotics.**—Streptomycin was apparently the most effi drug yet discovered for the treatment of pulmonary tubercu in its earliest stages. Evidently it can cure miliary tubercul a rapidly spreading form, which was previously invariably f This is the first drug to interfere definitely with the multip tion of tubercle germs in man. It was found, however, that lo doses than those formerly used are efficient; large doses l side effects such as dizziness and, in some instances, severe eruptions and deafness. Excellent results were obtained this antibiotic in tuberculous infections in the throat and bronchial tubes and in tuberculous abscesses. Finally, it is lifesaving in many cases of tuberculous meningitis which merly were almost always fatal.

Among the new drugs introduced during 1947, most inte attached to the new antibiotic called chloromycetin, reporte be effective against such organisms as the *Rickettsia*, which responsible for various forms of typhus. The drug was te also against psittacosis or parrot fever, an infectious dis caused by viruses. Chloromycetin, derived from a mould lated to the species that produces streptomycin, was fo effective also against the tubercle bacillus, the organism causes contagious abortion in cattle or undulant fever in m and against certain infections of the gall bladder, the urin bladder and the intestinal tract. The product is less toxic t streptomycin and can be taken by mouth.

New methods of administering the antibiotics include variety of devices for aerosols or inhalation of penicillin m and new substances which are injectable. The latter inclu penicillin mixed with vasoconstricting drugs like epinephr which permits slower absorption of penicillin. The suggest was also made for the application of cold, utilizing an ice over the area in which the penicillin is injected as a means delaying the absorption. This permitted the maintenance o high level of penicillin in the blood for a longer time.

California physicians reported the treatment of acute in tions of the throat with penicillin ice cream, which provi 25,000 units of penicillin every three hours. This method used in acute tonsillitis, pharyngitis, scarlet fever throats Vincent's infection of the throat, commonly called trench mou

**Synergism.**—Reports were available of the combined use the sulfonamide drugs and streptomycin or penicillin in ca of undulant fever. Attempts were made to use a similar proach to leprosy, using a combination of diasone or pron with streptomycin. Also interesting was a combination of pa amino salicylic acid, known as PAS, with streptomycin. A parently one remedy may damage the germ to such an ext that it becomes more easily susceptible to the bacteriosta effect of the antibiotic.

**New Drugs.**—New drugs were produced for use agai malaria, including chloroquine, pentoquine and a number product, SN13,274, which is also a quinoline. Its technical na is 6-methoxy-9-(4-isopropylamino-1-methylbutylamino)-quin line.

Attention continued to be given to tridione, introduced as remedy in epilepsy, and to several other anticonvulsive dru including hydantoin.

Investigators found a drug called DFP or di-isopropyl-fluor phosphate which affects the sympathetic nervous system. It w found useful in treating glaucoma, which is due to excessi tension within the eye. Reports indicated also that it was us ful in overcoming myasthenia gravis, a condition marked severe continuing weakness of the muscles, and in the trea ment of paralysis of the movements of the intestinal walls. causes excessive motility and makes the tissues more sensiti to the action of two other drugs—neostigmine and pitressin.

Special attention centred on the antihistamine drugs, which w included particularly pyribenzamine, benadryl and antergan. stamine is responsible for dilating the small blood vessels. It related to the attack of migraine headaches, asthma, hay ver, urticaria, food eruptions and similar conditions. The tihistamine drugs are strongly effective in lessening the seri- sness of such symptoms. However, desensitization and elimi- tion of specific allergens (substances that cause allergic at- ks) was still considered a more positive and scientific method treatment.

A drug called tetraethyl ammonium chloride was found to ve the ability to block the sympathetic nervous system. Its e has been in conditions of spasm of the veins or blood vessels ch as in Buerger's disease, intermittent claudication, and teriosclerotic gangrene. The method was used also in Ray- ud's disease in which there is pain and blanching of the fingers d toes.

Urethane or ethyl carbamate was also found effective in re- cing the total number of white blood cells in cases of leu- emia. Studies indicated that action of urethane is the equiva- nt to exposure to X-ray. Ths drug is, however, toxic.

Proteins are the most essential substances in nutrition, since ey are involved in the growth and repair of cells. Patients ere now prepared for operation by injection into the blood of rified amino acids in the form known as protein hydrolosates. ese may also be used in cases of severe starvation or inani- on. The method is also applied in cases of hardening of the ver. Research continued on attempts to secure in pure form e amino acids, of which at least eight had been found to be st as essential to health and growth as the vitamins.

**Antispasmodics.**—A new antispasmodic was discovered called yanesin which may be substituted for curare, the South Amer- an arrow poison. The latter was now available as d-tubo- rarine. All of these preparations were being tested as anti- asmodics in anaesthesia and also for the treatment of spastic ralysis and infantile paralysis and in the treatment of per- ns who have had wounds of the spinal cord.

**Radioactive Isotopes.**—Some tumours take up radioactive osphorus in greater amounts than do the other tissues of the dy. The Geiger counter is used to measure the amount of dioactivity. The method may be used to determine whether not tumours are malignant.

A case was reported in which radioactive iodine taken by outh was effective in causing the disappearance of a second- y growth that developed in the bones and other tissues after rimary cancer in the thyroid. Studies with the X-ray and the eiger counter showed that radioactive isotopes localized in rious parts of the body and that the radioactivity caused a ssening of the size of the tumours.

When people are given radioactive iron by mouth, the red lood cells become radioactive. A specimen of blood can then e taken from the person and injected directly into the blood another person. Later a specimen of blood taken from the cond person can be studied and the percentage of the radio- tive cells to the other cells can be determined. This permits exact estimation of the total amount of blood in the body. indicates also how the radioactive isotopes are used in agnosis.

Radioactive sodium can be injected into a vein and the time its appearance at a remote portion of the body determined use of the Geiger counter. This permits determination of e rate of the circulation and the extent to which inflammation blood vessels may interfere with circulation.

Radioactive phosphorus was found useful in treating exces- ve numbers of white blood cells in the blood, particularly in tients who are intolerant to treatment by X-ray. The method is beneficial in leucaemias and in Hodgkin's disease but not curative.

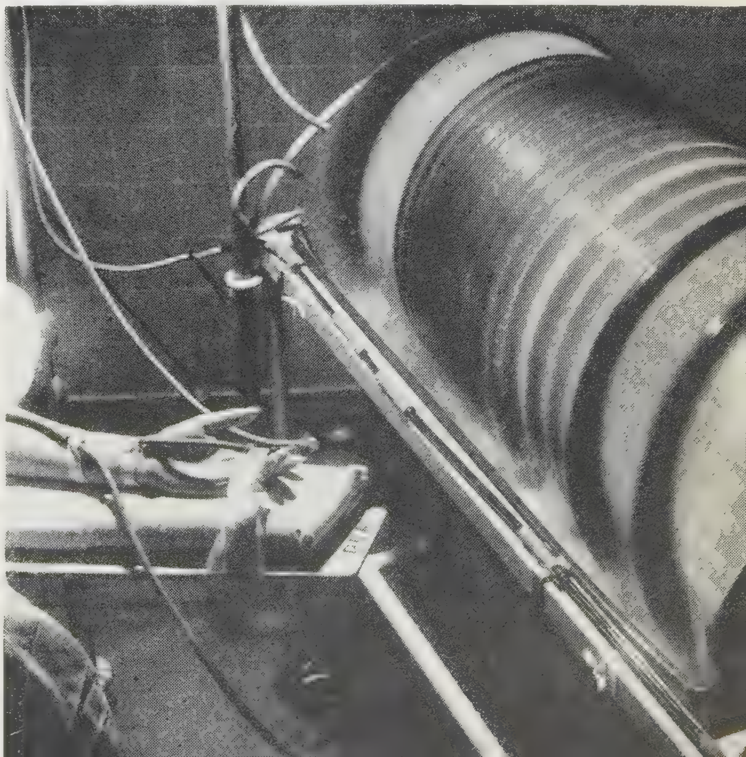
**Cancer.**—The attack on cancer, cause of some 180,000 deaths each year in the United States, was intensified during 1947. Special attention was given to the use of hormones, particularly for cancer of the prostate gland in men (treated with the female sex hormone) and cancer of the breast in women, treated with the male sex hormone. These were the first medical methods proved to be definitely beneficial in the control of certain forms of cancer. Studies were made also of splenic extracts such as were proposed by Alexander A. Bogolomets in his anticytotoxic serum. The results indicated an action which was not yet, however, definitely understood. Other studies related to the use of an extract obtained from an organism known as *trypanosoma Cruzi.* In animals with tumours infected with this trypanosome, a decrease in the size of the tumour was reported. However, research workers in the Institute for Cancer Research in Philadelphia, Pa., were unable to confirm any value for this method of treatment, which was developed by two Russian investigators, Gregory Roskin and Nina Klyueva (Mrs. Gregory Roskin). Studies made on mice with artificial cancer by the Philadelphia investigators were so unsatisfactory that they did not think it desirable to test the method on human beings.

Public interest in cancer was reflected by increased collections made by the American Cancer society to the extent of $12,000,000 annually and governmental appropriation for cancer research amounting to $14,000,000, and the establishment of a new cancer centre at the University of Chicago to include a cyclotron, a special building devoted to radioactive isotopes and a hospital exclusively for cancer patients.

**Narcotics.**—The search continued for a nontoxic narcotic drug. While such preparations had not yet been found, there were new narcotics called metopon, amidone and methadon for which various claims were made both as to their lesser ability to produce addiction and their increased ability in the narcotic effect. Methadon was urged particularly for use in persons dying from cancer for its powerful effects on that condition.

**Alcoholism and Cirrhosis of Liver.**—Physicians were con-

ARTIFICIAL KIDNEY used in critical kidney conditions at Mount Sinai hospital, New York city, during 1947. Patient's blood is shown being removed from the wrist artery, filtered of urea and pumped back into a vein, thus permitting his kidney to rest or recover



DR. HELEN B. TAUSSIG examining "blue children" in Paris in 1947. The U.S. pediatrician went to Paris to select those children suffering from the cardio-vascular disease who might benefit by a method of surgical treatment pioneered by her and Dr. Alfred Blalock

cerned in 1947 with the apparent increase in chronic alcoholism, especially among women. The tendency of women to share public bars with men and to drink in cafes and at cocktail parties was of concern to sociologists. While alcoholism was now believed to be only an incidental factor in cirrhosis of the liver, that condition caused more and more apprehension. Treatment with a high protein, low fat diet plus liver extract and vitamins seemed to be the most efficient form of treatment yet developed.

**Early Ambulation.**—Much research continued concerning the value of getting patients up early after surgical operations and after childbirth. Women were allowed to stand for one minute the first day after the birth, to sit in a chair five minutes the second day, to take abdominal exercises in bed and to sit up for two five-minute periods on the third day, to do the knee-chest exercises and to sit up in a chair for 30 min. on the fourth day and to walk about on the fifth or sixth day, to take a shower on the seventh day and to leave the hospital on the eighth day. The incidence of complications was lessened and a return of the body to normal was apparently hastened by this practice. Similarly, patients who had undergone surgery were now permitted to get up much earlier although by the same gradual process just described. Chemical tests of the blood and of the secretions of the body indicated that these remain more nearly normal under such a procedure.

**BCG Vaccination.**—Extended studies with vaccination against tuberculosis, using BCG (Bacillus-Calmette Guérin), indicated possibilities of its use as a general preventive. A centre for the preparation of BCG vaccine is being established in the new tuberculosis research hospital to be developed at the University of Illinois, Chicago, Ill., and controlled studies were made in large communities to determine the effectiveness of the technique. The evidence available justified trials of BCG among isolated groups like the North American Indians, Eskimos and employees of mental hospitals and some racial and professional groups such as nurses and interns in institutions for the tuberculous, among whom the morbidity and mortality from tuberculosis were known to be high.

**Heart Disease.**—New techniques developed in heart disease included the use of large doses of penicillin in endocarditis by
which at least one half of the patients who formerly would
died now recovered.

The surgical approach to heart disease was broadened so
"blue babies" were operated on by one of two techniques,
apparently successful, involving the taking of an incre
amount of blood into the lung. Reports were also made
technique by which a catheter is inserted into a large vei
the arm and passed directly into the heart. Samples of the b
can be taken from the interior of the heart of the living pa
and studies made with electrical devices which give a b
insight into the mechanism of the heart.

**Vagotomy for Peptic Ulcer.**—Surgical interest cen
around the operation by which the vagus nerves are cu
method useful in the treatment of ulcers of the duodenum
stomach. When the nerves are cut the acid secretions of
stomach are lessened and thus the symptoms controlled. H
ever, much more study was needed to define the exact plac
this unusual technique. Some surgeons were very strongl
favour of this technique, whereas others were just as stro
opposed to it. Most physicians inclined to the view that
patient should be treated by some of the newer medical metl
developed for the treatment of ulcer, including the use of a
acid substances, resins, mucin preparations and similar t
niques, before being submitted to the surgical method.

**Influenza Vaccine.**—During 1946 vaccines had been
veloped against influenza viruses A and B. Hundreds of th
sands of persons were vaccinated. Later studies indicated
the method was not protective since the viruses change t
form and it becomes necessary to develop a variable influe
vaccine which can attack a variety of viruses. The meth
indicate, however, possible controls against such devasta
epidemics of influenza as occurred in 1918. The combinatio
vaccination against influenza virus with sulfonamide and a
biotic drugs to control the germs might be able to arrest s
epidemics.

**Epidemics.**—No serious epidemics disturbed the Un
States during 1947. The total number of infantile paral
cases was under 12,000, or less than half the number that
curred in 1946. A severe outbreak of bulbar poliomyelitis
the vicinity of Minneapolis led to the development of a n
technique of treatment for this special form. It involved ea
opening of the trachea (or windpipe) and direct inhalation
oxygen through this opening. This method was unquestiona
lifesaving in many cases. Serious epidemics of poliomyel
occurred in England and in Germany.

A severe outbreak of cholera affected Egypt and the far ea
England had 15 separate introductions of Asiatic smallp
during 1946, each of which was controlled by widespread vac
nation. In England 33 cases occurred in an outbreak in F
1947.

Special attention was given throughout the United States
outbreaks of infectious hepatitis with jaundice, resulting
some instances from introduction of the virus through blo
transfusion, in other instances simply as an epidemic sustain
from contaminated water or food. New tests were develop
for testing the function of the liver.

**New Devices.**—One of the discoveries of World War II w
a pocket-sized kit by use of which it is possible to tell t
amount of carbon monoxide in the air. Carbon monoxide is t
dangerous exhaust gas from automobiles and the substance
illuminating gas that produces sudden unconsciousness a
death. The detector is a specially prepared mass of yell
silica in jelly form which turns green whenever it is exposed
as little as one part of carbon monoxide in 500,000,000 pa
of air.

Another new device was an electric instrument which can

ached to the ear and which shows exactly how much oxygen
resent in the circulating blood. This is especially important
use on people undergoing anaesthesia.
Research methods were developed for using a special ultra-
let apparatus to destroy viruses in blood used for transfusion
d to kill the virus of influenza in material used for vaccination
inst that disease.
The ballistocardiogram, an instrument which records the
oke volume of the heart, was used as a means of calculating
output of the heart. The electrokymograph was used to
serve changes in the border of the heart as a means of deter-
ning special strain on the organ and a tendency to dilate and
arge.

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**Great Britain.**—The National Health Service act, which en-
led everyone to comprehensive medical care, was part of a
ogram of social security aimed at "the prevention of indi-
dual poverty resulting from those hazards of personal fortune
er which individuals have little or no control." The program
d many critics; and the medical profession, while favourable
its aim, showed reluctance to enter the organized service it
tailed—a service which many believed must involve regimen-
tion and bureaucratic mediocrity. Throughout 1947 British
ctors negotiated about possible conditions of work, remunera-
on, and disciplinary machinery; and their decision on whether
join the service had to be reached early in 1948 if the act
as to come into operation on the appointed day in July 1948.
he British Medical association objected particularly to aboli-
on of the sale and purchase of practices, to exclusion of doc-
rs from "medically overcrowded" areas, to payment of a basic
lary to practitioners, and to the powers vested in the minister
health. Meanwhile the enthusiasm of those who regarded the
tional health service as a great opportunity for medical prog-
ss was damped by the economic situation, with its prospective
striction of expenditure on hospitals and health centres. An-
her serious obstacle was the continuing deficiency of trained
urses—a phenomenon common to most countries.
Opponents of the government argued that no act of parliament
uld in itself improve medical care: legislation did not create
e doctors and nurses needed to look after the thousands of new
spital beds admittedly required. The reply to this argument
as that the greater the shortages, the greater the need for or-
nization. Certainly this was true of hospital beds; and, even if
e general-practitioner service had to be postponed, the minister
as certain to take over the hospitals. During 1947 he appointed
e 14 regional boards to plan the hospital services.
Comparable schemes for public organization of medical serv-
es were on trial or under discussion in Scandinavia, the Nether-
nds, Northern Ireland, Eire, South Africa, Australia, New
ealand, and elsewhere. The South African model, introduced
slow stages, closely approached the straightforward "state
edical service," with salaried officers centrally controlled. The
New Zealand service, in which control was minimal, might need modification because too much money was spent on the family doctor and too little on the specialist and hospital. In the United Kingdom, on the other hand, some feared that excessive encouragement of the specialist would destroy the good general practitioner. To put the specialties in their proper place was a basic problem everywhere.

All this preoccupation with organization was closely related to the movement towards "social medicine." Doctors appreciated that advances in treatment were of little value unless they were made accessible to those who could profit by them. Also they now recognized that medicine should concern itself less with disease, isolated in hospital beds, and more with the "positive health" of people in their natural environment—the home, the office, the field, the factory.

A more social outlook on the medical needs of the community revealed that certain "uninteresting" disorders had too little attention—*e.g.*, neurotic illness, the infirmities of age, and rheumatism. It was also seen that vast benefits to the public were obtainable from undramatic innovations such as the better keeping of records, careful reablement or rehabilitation after illness, and practice by doctors in groups, and from fuller use of ancillaries such as the secretary, the health visitor and the social worker, who could save the doctor's time and extend his influence.

(*See* also ALIMENTARY SYSTEM, DISORDERS OF; ALLERGY; ANAESTHESIOLOGY; ATOMIC ENERGY; BACTERIOLOGY; BIOCHEMISTRY; BIRTH CONTROL; CHEMISTRY; CHEMOTHERAPY; DERMATOLOGY; EAR, NOSE AND THROAT, DISEASES OF; ENDOCRINOLOGY; EPIDEMICS; EYE, DISEASES OF; GYNAECOLOGY AND OBSTETRICS; HOSPITALS; INDUSTRIAL HEALTH; MEDICAL REHABILITATION OF DISABLED VETERANS; NARCOTICS AND NARCOTIC TRAFFIC; NERVOUS SYSTEM; PHYSIOLOGY; PLAGUE, BUBONIC AND PNEUMONIC; PSYCHIATRY; PSYCHOSOMATIC MEDICINE; PUBLIC HEALTH ENGINEERING; PUBLIC HEALTH SERVICES; SURGERY; TUBERCULOSIS; VENEREAL DISEASES; VETERINARY MEDICINE; VITAMINS; X-RAY AND RADIOLOGY. Also *see* articles on specific diseases.) (T. F. F.)

**Mediterranean, British Possessions in the:** *see* CYPRUS; GIBRALTAR; MALTA.

**Merchant Marine:** *see* SHIPPING, MERCHANT MARINE.

## Mercury.

Production in the more important countries is shown in Table I, so far as data were available in 1947.

**Table I.**—*World Production of Mercury, 1940–46*
(Short tons)

| | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|---|
| Canada. . . . | 77 | 268 | 518 | 845 | 368 | — | — |
| Chile . . . . . | 4 | 50 | 86 | 97 | 45 | 33 | 18 |
| China. . . . . | 129 | 248 | 180 | 130 | 114 | 69 | 65 |
| Italy . . . . . | 3,467 | 3,578 | 2,884 | 2,280 | 1,330 | 1,520 | 1,874 |
| Japan . . . . | 129 | 157 | 223 | 255 | 259 | 81 | 54 |
| Mexico . . . . | 443 | 879 | 1,233 | 1,076 | 989 | 625 | 443 |
| Spain. . . . . | 1,984 | 3,286 | 2,747 | 1,815 | 1,305 | 1,546 | 1,558 |
| South Africa . . | ? | 8 | 22 | 45 | 45 | 32 | 34 |
| United States . | 1,436 | 1,707 | 1,932 | 1,973 | 1,432 | 1,169 | 963 |
| Total . . . . | 8,170 | 10,450 | 10,070 | 8,930 | 6,270 | 5,400 | 5,280 |

**Table II.**—*Data on the Mercury Industry in the U.S., 1942–46*
(In thousands of pounds)

| | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|
| Production . . . . . . . . | 3,864.2 | 3,946.6 | 2,864.3 | 2,338.0 | 1,926.4 |
| Imports. . . . . . . . . | 2,959.5 | 3,633.2 | 1,486.0 | 5,214.9 | 1,056.0 |
| Exports. . . . . . . . . | 26.3 | 29.2 | 57.0 | 78.9 | 68.9 |
| Re-exports . . . . . . . | 567.1 | 1,128.7 | 9.6 | 128.7 | 179.1 |
| Supply . . . . . . . . . | 6,230.3 | 6,421.9 | 4,283.7 | 7,345.3 | 2,734.4 |
| Consumption. . . . . . . | 3,777.2 | 4,142.0 | 3,260.4 | 4,744.6 | 2,371.2 |

**United States.**—The drop of more than one-half in domestic production of mercury had been largely offset by reduced consumption, and imports were needed for less than 20% of the demand. The salient data of the industry are shown in Table II.

In the first three quarters of 1947 production was 1,341,400 lb., imports 482,400 lb., exports 58,520 lb., and consumption 1,831,600 lb. (G. A. Ro.)

**Merit System:** *see* Civil Service.
**Mesotrons (Mesons):** *see* Physics.

**Metallurgy.** The majority of the more striking metallurgical developments were in the field of process metallurgy, rather than in the metallurgy of the individual metals.

**Atomic Research.**—The wartime development of atomic fission was paying dividends in peacetime applications. Science had been enriched not only with four new metals—neptunium (No. 93), plutonium (No. 94), americium (No. 95) and curium (No. 96), but also with a host of new isotopes, and in addition, more plentiful supplies of many formerly known isotopes than had before been available. Altogether about 80 isotopes had been identified in the products from the operation of cyclotrons and fission piles, many of which had been isolated in sufficient amounts to distribute for scientific research, either by sale or on loan. Striking new discoveries were expected from the use of these isotopes in the fields of biological, medical, chemical and metallurgical research. (*See* also Atomic Energy.)

**Blast Furnace Operation.**—Research on the action of oxygen-enriched blast in the iron blast furnace indicated a possible increase of 20% in capacity and a saving of 10% in fuel.

**Flame Hardening.**—New techniques in the use of flame hardening made use of electronic methods of temperature control.

**Grinding.**—Feeding coolant through the spindle of a grinding wheel, where centrifugal force drives it out through the pores of the wheel to the grinding surface, results in greatly lowered grinding temperatures.

**Metal Finishing.**—Sapphire tips of gauge points, burnishers, and tools for machining soft metals were found to give up to 7,000 times the life of steel, and 1,000 times that of carbide tips.

**Moulding Dies.**—Beryllium-copper alloy moulds used in moulding plastics were more easily made than steel moulds, had lower cost, and better heat conductivity to dissipate the heat.

**Pickling.**—A mechanical device was being developed for the removal of scale from rolled steel. Operations in the experimental stage were soon expected to go into a pilot plant.

**Pumping Liquid Metals.**—Electromagnetic action had been used for a number of years to circulate liquid metal in certain types of electric furnace. The same principle was adapted to pump liquid metals, even those of high melting point.

**Refining.**—Vacuum melting and casting of beryllium may be used to remove some of the more volatile impurities in the metal, but showed little effect on iron, aluminum, copper or silicon.

**Soldering.**—A new silver solder, containing 20% silver, had high capillary action and tensile strength.

**Stamping Dies.**—A test die made from easily worked low melting point alloy could be hardened sufficiently by immersing it in liquid nitrogen to permit the striking of six to ten trial stampings. When any necessary adjustments had been made, the die was then duplicated in steel for regular use.

**Substitutes.**—Aluminum was being substituted for steel in pipes, which were cheaper on a pound basis, but cost more per foot. Extruded tubing of tenite plastic was being used for piping gas in homes in southern California.

Nylon was being satisfactorily substituted for steel in some types of small gears.

**Testing.**—A supersonic thickness gauge was being used to measure the thickness of sheet metal which is accessible on only one side.

A direct reading spectrometer was developed which woul termine simultaneously up to 16 different elements in the sample, turning out analyses continuously every five minute

**Welding.**—New welding rods were developed for specia uses in various lines—wear-resistant bronze, for high tem ture, for use on light gauge mild steel, for hard surfacing, for high tensile and impact strength. (G. A. R

**Metal Prices and Production:** *see* Mineral and M Production and Prices.

**Meteorology.** The subject of artificial weather attra wide attention during 1947; almost daily press carried accounts from Australia, Hawaii, South Ame or some part of the United States about attempts to pro rain by sprinkling clouds with "dry ice," or solidified ca dioxide. The first widely reported tests with dry ice to pre tate rain or snow were described before the American Mete logical society late in Dec. 1946. Some thought the met might be developed to dissipate fog and low clouds over ports, and to counteract hurricanes or divert them.

By the end of 1947 the evidence, although not conclus was sufficient to cause intensification of experiments and f tests to determine the practical possibilities of inducing rai snow to fall where needed. The results so far could be s marized thus: first, fog or cloud particles must be at temp tures near or below freezing for dry ice pellets or any ot known nucleating agent to condense out ice particles. The sulting snow or ice crystals grow at the expense of cloud dr lets and may then fall as snow or rain, thus dissipating cloud or fog. The requirement of freezing temperatures limi possible application to wintertime or to occasions when cl tops extend upward into freezing atmosphere. Second, rain in sufficient quantity to be of value may be precipitated, clouds at the shower stage from natural causes apparently m be present over the desired location. The effect of artificial me ures was still undetermined. Third, it was doubtful that r could be produced artificially over drought-stricken regions the absence of humid air masses of broad extent and without instability or the frontal formations in the atmosphere wh usually cause rain. The natural phenomena necessary for for tion of rain appear to involve quantities of air and moisture beyond the capacity of dry-ice techniques. Fourth, althou systematic tests on hurricanes were still awaited, many scient believed such large-scale weather disturbances to be beyond scope of artificial controls, at least temporarily. Fifth, if art cial rainmaking were developed to the point of commercial i portance a new field of litigation would be opened. Some le claims under consideration in 1947 were based on damage fr heavy rain and destructive winds accompanying storms t were allegedly induced by artificial means. Moreover, a f landowners talked of water rights to moisture in the clou above their property. Others on farms lying leeward of t rainmaking experiments feared they would be deprived of sho ers that otherwise would reach their lands and water their cro

**International Meteorological Organization.**—An event importance to meteorologists the world over was the conferen of directors of the International Meteorological organization Washington from Sept. 22 to Oct. 11, 1947. The meetings we concluded with adoption of a new charter providing for an inte governmental World Meteorological organization after ratific tion by 30 member nations. These were the most widely a tended and probably the most important meetings of the I.M. after its organization 70 years before. Directors of 60 forei meteorological services were present.

The conference approved a plan of negotiation with t

RSERK," an apt picture of the unusual weather in 1947, which included vy floods, destructive tornadoes and heat waves. Cartoon by Shoemaker in *Chicago Daily News*

ited Nations to bring the future W.M.O. into affiliation with U.N. The conference also reviewed the work of the ten hnical commissions which had held sessions in Toronto dur- August and early September and the regional commissions ich had met since the extraordinary postwar conference at ndon in Feb. 1946. The commissions on aeronautical meteor- gy, agricultural meteorology, maritime meteorology and syn- ic weather information in particular presented many plans new facilities and for international co-operation in increas- the accuracy and scope of weather reports. Uniform units measure and operating procedures, universal synoptic codes d standard values for certain physical constants were adopted. e conference elected new members for the interim executive nmittee composed of 25 directors from different countries.

**Forecasting.**—Agricultural, industrial and transportation in- ests and the general public had long pressed meteorologists to ovide weather forecasts for longer periods in advance. The rld food crisis in 1947 focused attention sharply on this prob- n. In the corn and wheat belts of the United States the un- ually cool, wet spring was followed by prolonged hot weather d drought during the late summer. Plans of export control thorities of the U.S. government were vitally dependent on eknowledge of the weather and its effects on crop yield. uring World War II the major belligerents spent huge sums on earch to develop new methods for long-range weather fore- sting because foreknowledge of weather was so important in culating the risks for strategic and tactical planning. To de- mine the reliability of forecasts military leaders in the United ates requested the National Academy of Sciences to appoint a mmittee of scientists to study the results of the best methods forecasting. After several months of investigation the com- ttee reported little evidence of skill in specific forecasts be- nd a period of three or four days. Although this conclusion plied primarily to detailed day-by-day forecasts rather than to neral monthly or seasonal trends and climatological expect- cy statistics, it served to epitomize the limitations of weather forecasting.

Despite discouragements research meteorologists and collaborating institutes and universities increased their work on methods for making forecasts more accurate and for longer periods. Among noteworthy efforts were the mathematical approach headed by scientists at the Institute for Advanced Study, Princeton, N.J., which included use of electronic computers; the studies of atmospheric circulation at the Massachusetts Institute of Technology, Cambridge, Mass., and the University of Chicago, and the extended forecast projects of the U.S. weather bureau. Other intensive studies in the composition and structure of the atmosphere and weather forecasting were in progress or about to be organized in universities of the west and southwest, with support of the U.S. air forces and navy. Among European nations, the U.S.S.R. appeared to be giving most attention to this subject.

The official meteorological bureaus of most countries were still issuing forecasts for periods of only 24 to 48 hr. Some issued regular forecasts in general terms for a week, but agreed that they showed little skill for forecasting more than the first three or four days. A very few issued experimental monthly or seasonal outlooks, but while they showed some evidence of skill none was reliable enough for general distribution and use.

Renewed attention was given during 1947 to calculation of future weather risks on the basis of expectancies derived from climatological statistics over many years. Monthly or seasonal weather guides of this kind give the frequency of occurrence of various weather conditions and could be projected into the future indefinitely to indicate the "probability" that the condition would occur, but this method did not show unusual conditions or anomalies for any definite time and place.

Most scientists agreed that progress in weather forecasting was most likely to come through extension of the system of upper-air soundings to give a quantitative analysis of the general circulation including elements which had been measured inadequately, if at all, such as the atmosphere's incoming and outgoing radiation and its effects at various levels. Undoubtedly the component quantities were so numerous and complex that they would require special mathematical treatment both for analysis and for computation of weather conditions at some future stage.

The widest gaps in the world-wide network of meteorological stations were still at sea, in polar regions and in other uninhabited or undeveloped areas. During 1947 two more stations were established in the arctic segment of the western hemisphere, one near Eureka sound at lat. 80° N.; long. 86° W.; the other at Resolute bay, lat. 75° N.; long. 95° W. The Eureka sound station was established entirely by air lift in April and was the most northerly permanent aerological station ever equipped, staffed and put into regular operation in this manner. The station at Resolute bay was established in August by means of surface icebreaker and transport ships. These two stations were staffed jointly by technicians from the national meteorological services of Canada and the United States. Their far northern reports added valuable information for the weather maps of the hemisphere and would assist in improving the daily and extended weather forecasting for Canada, the United States and western Europe.

On the oceans meteorology suffered from a shortage of fixed vessel weather stations or alternative sources of weather reports at sea. During World War II about 18 ocean stations were operated in the Atlantic to furnish weather reports and upper-air soundings four times or more daily. Eventually about 20 similar vessel stations were placed in the Pacific. All were spaced to give a network of representative weather reports. By agreement at the London meeting of the International Civil

Aeronautics organization in 1946, the peacetime requirements in the Atlantic were set at 13 vessel stations. Ships, equipment and personnel were to be provided by the principal maritime countries of North America and western Europe on the basis of their relative interest. Demobilization reduced the number in actual operation to two stations during part of the year,
the end of 1947 four were again operating. In the Pacifi
one station remained in the ocean east of Hawaii.

Because of the shortage of suitable ships and the cost o
ation, meteorologists were searching in 1947 for more ec
cal means of obtaining in
tion and upper-air sound
sea. Experiments were in
ress to develop buoyed
matic weather stations
there were tests also of ba
with altitude control by
or automatic device sim
those used for incendiar
poses by the Japanese
the war. Aircraft reconnai
was used extensively for
er observations by the air
and navy over the Pacif
Arctic oceans, and in
places during seasons of
cal cyclones to aid the w
bureaus in collecting r
and soundings necessary f
curate forecasting. The s
of weather reporting by r
merchant ships, a system
developed before the wa
also being restored. Pro
were revived for constru
floating seadromes that co
permanently moored and
iced by tenders less cost
operate than regular s
ships.

Military meteorology, h
capped during 1946 by
demobilization, began rec
during 1947. New recruit
and recall of meteorologica
ficers to active duty filled
of the vacancies with pers
for the specialized weather
ices to the armed forces.
worthy were the establish
of the first regular weathe
connaissance flights to the
pole by the U.S. air force,
the exploration of meteoro
cal conditions in the antarct
the navy in Operation "H
jump." To co-ordinate the
research projects in univers
and other institutions, two
terdepartmental meteorolo
groups, one primarily for
purposes and the other for
tary, reviewed all major p
for meteorological rese
sponsored by the governm
With interlocking members
these two groups, the Com
tee on Aviation Meteorolog
the Air Co-ordinating com
tee and the Panel on Meteo
ogy of the Joint Research

*Table I.—*Monthly and Annual Mean Temperature in °F., 1947, in U.S. Cities*

| Cities | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Year | Annual dep.† | High-est | Low-est |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albuquerque | 33 | 42 | 47 | 55 | 67 | 73 | 80 | 76 | 73 | 60 | 41 | 35 | 57 | +2 | 50 | 33 |
| 50-yr. avg. | 34 | 41 | 46 | 54 | 63 | 73 | 77 | 74 | 68 | 57 | 43 | 35 | 55 | | | |
| Bismarck | 18 | 12 | 26 | 41 | 51 | 62 | 73 | 73 | 57 | 52 | 24 | 14 | 42 | +3 | 73 | 12 |
| 75-yr. avg. | 6 | 9 | 22 | 40 | 53 | 63 | 69 | 67 | 57 | 44 | 27 | 13 | 39 | | | |
| Charleston | 56 | 46 | 51 | 67 | 73 | 78 | 81 | 81 | 77 | 71 | 57 | 52 | 66 | 0 | 81 | 46 |
| 97-yr. avg. | 50 | 52 | 57 | 65 | 73 | 79 | 81 | 81 | 77 | 68 | 58 | 52 | 66 | | | |
| Chicago | 29 | 20 | 32 | 47 | 54 | 66 | 71 | 80 | 67 | 62 | 35 | 30 | 49 | 0 | 80 | 20 |
| 77-yr. avg. | 25 | 27 | 36 | 47 | 58 | 67 | 73 | 72 | 65 | 54 | 40 | 29 | 49 | | | |
| Denver | 33 | 31 | 37 | 47 | 56 | 63 | 74 | 74 | 68 | 57 | 35 | 36 | 51 | +1 | 74 | 31 |
| 76-yr. avg. | 31 | 33 | 39 | 48 | 57 | 67 | 73 | 71 | 63 | 52 | 40 | 33 | 50 | | | |
| Helena | 20 | 27 | 32 | 44 | 54 | 56 | 69 | 65 | 56 | 49 | 28 | 27 | 44 | +1 | 69 | 20 |
| 68-yr. avg. | 19 | 22 | 32 | 44 | 52 | 59 | 66 | 65 | 55 | 44 | 32 | 23 | 43 | | | |
| Houston | 53 | 50 | 57 | 70 | 75 | 82 | 84 | 84 | 81 | 77 | 60 | 56 | 69 | 0 | 84 | 50 |
| 67-yr. avg. | 53 | 56 | 63 | 69 | 76 | 81 | 84 | 83 | 79 | 70 | 61 | 54 | 69 | | | |
| Knoxville | 43 | 33 | 41 | 62 | 65 | 74 | 75 | 79 | 73 | 66 | 48 | 41 | 58 | 0 | 79 | 33 |
| 77-yr. avg. | 38 | 41 | 48 | 57 | 67 | 74 | 77 | 75 | 69 | 59 | 47 | 39 | 58 | | | |
| Los Angeles | 56 | 60 | 60 | 63 | 64 | 67 | 73 | 71 | 72 | 66 | 59 | 57 | 64 | +2 | 73 | 56 |
| 70-yr. avg. | 55 | 56 | 58 | 59 | 62 | 66 | 70 | 71 | 69 | 65 | 61 | 57 | 62 | | | |
| Memphis | 44 | 36 | 45 | 63 | 68 | 78 | 79 | 85 | 76 | 70 | 49 | 44 | 61 | 0 | 85 | 36 |
| 76-yr. avg. | 40 | 43 | 52 | 62 | 70 | 76 | 80 | 78 | 72 | 61 | 50 | 42 | 61 | | | |
| Miami | 73 | 62 | 67 | 76 | 77 | 80 | 80 | 81 | 80 | 77 | 76 | 71 | 75 | 0 | 81 | 62 |
| 51-yr. avg. | 68 | 68 | 70 | 74 | 77 | 80 | 82 | 82 | 81 | 78 | 73 | 69 | 75 | | | |
| Mobile | 55 | 49 | 55 | 69 | 74 | 81 | 81 | 83 | 77 | 73 | 58 | 54 | 67 | 0 | 83 | 49 |
| 75-yr. avg. | 52 | 55 | 60 | 66 | 74 | 80 | 81 | 81 | 78 | 70 | 59 | 52 | 67 | | | |
| New York | 37 | 29 | 37 | 50 | 59 | 67 | 74 | 75 | 68 | 63 | 44 | 34 | 53 | +1 | 75 | 29 |
| 75-yr. avg. | 31 | 31 | 38 | 49 | 61 | 69 | 74 | 73 | 67 | 56 | 44 | 35 | 52 | | | |
| Norfolk | 49 | 37 | 43 | 59 | 69 | 74 | 77 | 79 | 75 | 67 | 51 | 43 | 60 | 0 | 79 | 37 |
| 76-yr. avg. | 41 | 43 | 48 | 57 | 66 | 74 | 79 | 77 | 72 | 63 | 51 | 43 | 60 | | | |
| North Platte | 30 | 27 | 35 | 47 | 57 | 65 | 74 | 79 | 66 | 60 | 34 | 29 | 50 | +1 | 79 | 27 |
| 72-yr. avg. | 23 | 27 | 37 | 49 | 59 | 68 | 73 | 71 | 62 | 50 | 37 | 27 | 49 | | | |
| Oklahoma City | 39 | 38 | 46 | 59 | 67 | 78 | 80 | 86 | 78 | 71 | 47 | 42 | 61 | +2 | 86 | 38 |
| 56-yr. avg. | 36 | 40 | 50 | 60 | 68 | 76 | 81 | 80 | 73 | 62 | 49 | 39 | 59 | | | |
| Phoenix | 51 | 60 | 64 | 69 | 80 | 85 | 93 | 88 | 87 | 74 | 57 | 51 | 71 | +1 | 93 | 51 |
| 52-yr. avg. | 52 | 56 | 61 | 68 | 76 | 85 | 90 | 89 | 83 | 71 | 60 | 53 | 70 | | | |
| Portland, Me. | 22 | 25 | 33 | 41 | 51 | 60 | 71 | 69 | 59 | 58 | 39 | 23 | 46 | +2 | 71 | 22 |
| 68-yr. avg. | 20 | 21 | 32 | 40 | 51 | 60 | 66 | 65 | 58 | 50 | 38 | 25 | 44 | | | |
| Portland, Ore. | 39 | 48 | 52 | 56 | 63 | 62 | 68 | 66 | 65 | 56 | 48 | 45 | 56 | +3 | 68 | 39 |
| 76-yr. avg. | 39 | 42 | 47 | 52 | 57 | 62 | 67 | 67 | 62 | 54 | 47 | 41 | 53 | | | |
| San Francisco | 47 | 54 | 56 | 55 | 58 | 62 | 60 | 62 | 61 | 62 | 55 | 51 | 57 | +1 | 62 | 47 |
| 76-yr. avg. | 50 | 52 | 52 | 56 | 57 | 59 | 59 | 59 | 61 | 61 | 56 | 51 | 56 | | | |
| Sault Ste. Marie | 17 | 14 | 24 | 33 | 43 | 57 | 64 | 70 | 56 | 54 | 31 | 20 | 40 | +2 | 70 | 14 |
| 58 yr. avg. | 12 | 11 | 21 | 37 | 48 | 58 | 63 | 61 | 54 | 43 | 30 | 19 | 38 | | | |
| Washington, D. C. | 42 | 32 | 40 | 54 | 65 | 73 | 76 | 80 | 70 | 65 | 46 | 37 | 57 | +2 | 80 | 32 |
| 76-yr. avg. | 33 | 35 | 43 | 53 | 64 | 72 | 77 | 75 | 68 | 57 | 45 | 37 | 55 | | | |

Table II.—*Monthly and Annual Rainfall, in Inches, 1947, in U.S. Cities*

| Cities | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Year | Annual dep.† |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albuquerque | T | .1 | T | T | .5 | .2 | .4 | 1.5 | .7 | .3 | .5 | 1.1 | 5.3 | − 3.2 |
| Bismarck | .5 | .3 | .2 | .9 | .8 | 8.3 | .7 | 1.1 | 1.5 | 2.3 | 1.0 | .3 | 17.9 | + 1.5 |
| Charleston | 1.1 | .4 | 7.3 | 4.4 | 2.8 | 10.8 | 5.0 | 6.8 | 10.2 | 3.5 | 6.3 | 6.1 | 64.7 | +18.0 |
| Chicago | 2.1 | .4 | 2.7 | 8.3 | 4.0 | 4.4 | 4.1 | 3.2 | 3.3 | 2.6 | 2.6 | 1.6 | 39.3 | + 6.4 |
| Denver | .3 | 1.0 | 1.2 | 1.3 | 4.2 | 2.3 | 1.1 | 1.2 | .5 | 2.8 | .6 | .2 | 16.7 | + 2.7 |
| Helena | .3 | .4 | 1.1 | .8 | .5 | 4.3 | 1.0 | .8 | 3.1 | .6 | 1.4 | .3 | 14.6 | + 1.9 |
| Houston | 3.8 | .7 | 2.2 | 1.2 | 10.2 | 5.4 | .6 | 4.5 | .8 | 2.3 | 5.5 | 4.2 | 41.4 | − 5.6 |
| Knoxville | 9.7 | 2.7 | 2.9 | 2.4 | 3.4 | 2.7 | 3.3 | 2.1 | 1.4 | 1.6 | 3.3 | 2.1 | 37.6 | − 9.9 |
| Los Angeles | .4 | .9 | .8 | T | .1 | T | 0 | T | .1 | .1 | .1 | 1.6 | 4.1 | −11.1 |
| Memphis | 6.0 | .7 | 2.0 | 4.6 | 4.7 | 5.5 | .6 | 2.4 | .6 | 5.7 | 5.1 | 3.4 | 41.3 | − 6.4 |
| Miami | 1.5 | 2.0 | 1.6 | 6.0 | 3.4 | 9.2 | 7.8 | 7.3 | 13.7 | 13.5 | 2.6 | .7 | 69.3 | +10.4 |
| Mobile | 8.7 | 2.3 | 14.3 | 9.5 | 11.4 | 4.6 | 1.1 | 4.6 | 5.0 | 2.8 | 10.7 | 7.3 | 82.3 | +20.5 |
| New York | 3.2 | 2.4 | 2.8 | 5.5 | 4.9 | 3.2 | 2.7 | 8.8 | 2.7 | 2.3 | 6.5 | 3.9 | 48.9 | + 6.0 |
| Norfolk | 4.2 | 1.3 | 3.5 | 2.9 | 1.7 | 3.9 | 8.3 | 2.2 | 4.0 | 1.5 | 6.3 | 2.4 | 42.2 | − 3.1 |
| North Platte | .4 | .2 | .3 | 1.9 | 2.4 | 4.9 | 2.7 | 1.1 | 1.8 | .5 | 1.6 | .8 | 18.6 | + 0.5 |
| Oklahoma City | .5 | T | .5 | 11.9 | 7.9 | 2.1 | 5.1 | 6.0 | 2.4 | .8 | 1.7 | 2.4 | 41.3 | + 9.6 |
| Phoenix | T | .1 | T | T | .4 | 0 | .1 | 1.2 | .4 | .1 | .6 | .3 | 3.2 | − 4.6 |
| Portland, Me. | 4.0 | 2.3 | 2.7 | 2.7 | 4.4 | 3.9 | 3.1 | .3 | 1.7 | .3 | 4.9 | 2.0 | 32.3 | − 9.9 |
| Portland, Ore. | 4.3 | 3.1 | 5.3 | 2.1 | .9 | 2.9 | 6.0 | 5.3 | 5.3 | 5.5 | 4.8 | 5.2 | 50.7 | + 9.1 |
| San Francisco | 1.4 | 2.7 | 3.6 | 1.0 | .7 | .7 | T | T | T | 2.1 | 1.4 | 1.8 | 15.4 | − 6.8 |
| Sault Ste. Marie | 1.8 | 1.7 | 1.3 | 3.2 | 4.4 | 2.6 | 2.0 | .5 | 3.4 | .3 | 2.7 | 1.6 | 25.5 | − 4.4 |
| Washington, D.C. | 3.7 | 1.7 | 1.2 | 3.4 | 4.1 | 5.8 | 5.4 | 3.7 | 3.7 | 1.3 | 5.1 | 1.5 | 40.6 | − 1.5 |

T denotes a trace of precipitation, that is, less than 0.01 inch.

Table III.—*Duration of Sunshine, in Hours, 1947, in U.S. Cities*

| Cities | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Year | Annual dep.† |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Albuquerque | 235 | 215 | 266 | 273 | 328 | 388 | 370 | 297 | 332 | 287 | 201 | 188 | 3,380 | − 30 |
| Bismarck | 152 | 137 | 202 | 163 | 278 | 218 | 417 | 354 | 221 | 192 | 79 | 97 | 2,510 | −170 |
| Charleston | 118 | 216 | 197 | 215 | 269 | 202 | 250 | 248 | 233 | 188 | 118 | 181 | 2,435 | −410 |
| Chicago | 134 | 149 | 193 | 155 | 228 | 278 | 358 | 339 | 255 | 236 | 122 | 107 | 2,554 | − 86 |
| Denver | 232 | 195 | 218 | 244 | 262 | 309 | 328 | 301 | 273 | 250 | 180 | 150 | 2,942 | − 24 |
| Helena | 149 | 175 | 196 | 239 | 334 | 294 | 387 | 356 | 239 | 197 | 90 | 126 | 2,782 | +119 |
| Houston | 95 | 174 | 194 | 179 | 194 | 249 | 302 | 246 | 256 | 236 | 144 | 115 | 2,384 | −386 |
| Knoxville | 92 | 180 | 187 | 218 | 282 | 237 | 230 | 104 | 179 | 163 | 95 | 128 | 2,095 | −585 |
| Los Angeles | 250 | 185 | 245 | 300 | 235 | 260 | 400 | 350 | 285 | 235 | 245 | 235 | 3,225 | +265 |
| Memphis | 80 | 220 | 208 | 225 | 339 | 378 | 395 | 355 | 321 | 268 | 146 | 171 | 3,106 | +296 |
| Miami | 230 | 220 | 268 | 276 | 283 | 203 | 186 | 249 | 191 | 216 | 232 | 225 | 2,779 | −157 |
| Mobile | 133 | 231 | 233 | 246 | 276 | 295 | 334 | 289 | 300 | 241 | 139 | 130 | 2,847 | +180 |
| New York | 147 | 198 | 249 | 241 | 256 | 307 | 319 | 263 | 244 | 228 | 144 | 183 | 2,779 | + 96 |
| Norfolk | 149 | 218 | 209 | 235 | 298 | 255 | 265 | 260 | 209 | 180 | 127 | 192 | 2,597 | − 80 |
| North Platte | 207 | 181 | 241 | 233 | 278 | 304 | 331 | 345 | 262 | 204 | 114 | 165 | 2,865 | + 55 |
| Oklahoma City | 171 | 198 | 199 | 192 | 271 | 302 | 379 | 336 | 320 | 287 | 146 | 171 | 2,972 | + 35 |
| Phoenix | 250 | 240 | 310 | 350 | 380 | 420 | 350 | 310 | 340 | 310 | 230 | 210 | 3,700 | − 52 |
| Portland, Me. | 151 | 186 | 223 | 206 | 224 | 261 | 278 | 292 | 248 | 257 | 178 | 184 | 2,688 | +280 |
| Portland, Ore. | 71 | 136 | 161 | 213 | 297 | 211 | 275 | 249 | 218 | 56 | 61 | 42 | 1,990 | −165 |
| San Francisco | 197 | 116 | 174 | 200 | 317 | 326 | 360 | 284 | 281 | 207 | 205 | 125 | 2,792 | −145 |
| Washington, D.C. | 161 | 221 | 280 | 276 | 331 | 312 | 327 | 265 | 255 | 228 | 145 | 189 | 2,990 | +422 |

*Tables I, II and III are illustrative of variations in temperature, rainfall and sunshine in the United States during 1947 and are not the absolute extremes. Other places not listed in the tables may have had larger variations in these weather elements.

†Column headed "Annual dep." shows the departure from normal in the yearly figure. The normal is the average value over a long period of years. In the table of temperatures (Table I) the second line under each city shows the monthly normals for convenient comparison with the 1947 averages.

Table IV.—*Monthly Rainfall, in Inches, in Cities of the World, 1947*

| Cities | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| London | 1.35 | 1.19 | 4.66 | 1.68 | 1.35 | 3.17 | 1.41 | 0.40 | 1.17 | 0.15 | 1.07 | 2.14 |
| Edinburgh | 2.22 | 1.44 | 3.75 | 2.92 | 2.93 | 2.97 | 1.92 | 0.19 | 1.27 | 1.22 | 2.90 | 2.19 |
| Hamburg | 1.18 | 0.51 | 3.57 | 2.48 | 1.93 | 1.56 | 3.06 | 0.63 | 2.75 | 1.00 | 6.50 | 3.20 |
| Stockholm | 0.91 | 0.08 | 2.56 | 1.24 | 0.24 | 2.08 | 0.87 | 2.17 | 0.63 | 0.22 | 1.95 | 1.67 |
| Brussels | 0.92 | 0.72 | 4.04 | 2.60 | 1.36 | 1.74 | 3.81 | 0.72 | 1.50 | 0.87 | 3.21 | 3.69 |
| Lisbon | 4.54 | 11.39 | 4.98 | 1.16 | 2.15 | 0.26 | 0.00 | 0.22 | 0.70 | 2.57 | 3.59 | |
| Luga (Malta) | 3.06 | 0.33 | 0.04 | 0.14 | 0.02 | 0.00 | 0.23 | 0.28 | 0.24 | 1.28 | 0.24 | 3.13 |
| Cairo (Helwan) | 0.07 | 0.01 | 0.07 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | | |
| Baghdad (Habbaniya) | 0.39 | 0.70 | 0.53 | 0.02 | 0.12 | 0.00 | 0.00 | 0.00 | T | T | 0.94 | 0.34 |
| Aden (Sheikh Othman) | 0.70 | 0.11 | T | 0.00 | 0.02 | 0.00 | T | 0.64 | T | 0.06 | | |
| Salisbury (Rhodesia) | | | | | | | | | | | | |
| Capetown | 0.52 | 0.07 | 2.53 | 1.16 | 3.47 | 1.76 | 7.71 | 2.51 | 1.35 | 0.79 | 0.22 | 0.51 |
| Colombo (Ceylon) | 3.13 | 1.66 | 6.45 | 4.83 | 18.02 | 10.55 | 7.06 | 9.23 | 7.31 | 11.41 | 5.72 | 5.31 |
| Toronto | 1.57 | 1.00 | 2.52 | 2.33 | 3.37 | 4.53 | 5.64 | 2.36 | 1.79 | 1.12 | 1.29 | 1.03 |
| Winnipeg | 1.46 | 1.24 | 0.72 | 1.35 | 0.85 | 3.68 | 2.94 | 4.53 | 0.85 | 1.58 | 0.91 | |
| Victoria, B.C. (Patricia Bay) | 7.12 | 4.56 | 2.24 | 2.62 | 0.45 | 1.41 | 0.91 | 0.27 | 1.15 | 6.03 | 2.45 | |
| Hobart | 0.79 | 1.24 | 3.21 | 0.88 | 3.44 | 7.50 | 2.80 | 3.24 | 1.63 | 7.60 | | |
| Wellington, N.Z. | 1.93 | 5.75 | 1.99 | 5.05 | 2.36 | 11.02 | 2.94 | 4.89 | 5.49 | 7.61 | 1.05 | |

T denotes trace of precipitation, less than 0.01 inch.

Table V.—*Monthly Mean Temperature in °F. in Cities of the World, 1947*

| Cities | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| London | 35.8 | 30.0 | 40.9 | 49.0 | 57.3 | 62.1 | 65.6 | 68.1 | 60.7 | 51.5 | 45.7 | 42.1 |
| Edinburgh | 36.1 | 29.1 | 34.2 | 44.9 | 50.5 | 55.3 | 58.7 | 61.2 | 55.3 | 51.1 | 42.9 | 40.5 |
| Hamburg | 24.4 | 19.6 | 34.0 | 48.4 | 60.6 | 65.7 | 66.2 | 67.6 | 62.2 | 47.3 | 42.6 | 37.2 |
| Stockholm | 25.3 | 13.8 | 24.1 | 41.5 | 55.2 | 62.8 | 66.4 | 64.4 | 58.6 | 44.6 | 32.7 | 29.1 |
| Brussels | 31.5 | 26.1 | 41.5 | 52.0 | 60.6 | 66.0 | 67.6 | 70.0 | 64.6 | 51.6 | 45.0 | 39.0 |
| Lisbon | 51.6 | 53.7 | 57.7 | 62.6 | 60.9 | 66.5 | 69.9 | 72.5 | 70.3 | 67.6 | 63.1 | |
| Luga (Malta) | 53.5 | 57.3 | 60.1 | 61.7 | 66.2 | 74.9 | 79.7 | 82.1 | 76.7 | 70.3 | 64.8 | 56.1 |
| Cairo (Helwan) | 55.8 | 61.0 | 67.5 | 70.0 | 79.2 | 81.1 | 84.4 | 83.5 | | | | |
| Baghdad (Habbaniya) | 54.7 | 54.7 | 66.9 | 74.9 | 85.3 | 92.2 | 96.3 | 92.9 | 85.9 | 78.5 | 65.7 | 53.9 |
| Aden (Sheikh Othman) | 76.5 | 77.8 | 79.4 | 82.1 | 86.7 | 90.1 | 92.7 | 88.5 | 89.6 | 81.3 | | |
| Salisbury (Rhodesia) | | | | | | | | | | | | |
| Capetown | 69.9 | 73.1 | 70.4 | 63.1 | 59.1 | 54.4 | 54.3 | 55.9 | 59.8 | 62.3 | 67.1 | 69.2 |
| Colombo (Ceylon) | 79.1 | 79.7 | 81.5 | 82.5 | 82.5 | 83.1 | 81.6 | 80.5 | 80.1 | 79.4 | 79.5 | 78.3 |
| Toronto | 27.1 | 22.6 | 30.9 | 42.2 | 52.2 | 64.5 | 69.7 | 73.3 | 63.3 | 57.5 | 38.1 | 26.9 |
| Winnipeg | 6.9 | —0.3 | 16.3 | 35.3 | 46.2 | 60.3 | 69.9 | 68.1 | 53.1 | 50.0 | 19.9 | |
| Victoria, B.C. (Patricia Bay) | 33.9 | 41.6 | 44.7 | 49.4 | 55.5 | 58.3 | 61.6 | 59.7 | 57.3 | 50.1 | 42.1 | |
| Hobart | 61.3 | 64.3 | 61.2 | 56.1 | 54.8 | 47.5 | 46.3 | 47.4 | 51.1 | 52.9 | | |
| Wellington, N.Z. | 59.5 | 60.5 | 59.1 | 55.6 | 52.3 | 48.0 | 47.3 | 48.5 | 50.7 | 53.3 | 56.5 | |

elopment board guided the arch program.

mong other research proj- worthy of note were the nderstorm studies near Wil- gton, O., the cloud physics lies relating to artificial hods for causing rain, inves- tion of microseisms as an cation of distant typhoons hurricanes, radar studies early detection of severe lo- storms, and meteorological k relating to atomic energy duction. Co-operating in one more of these projects were air forces, the navy, the al corps, the National Ad- ory Committee for Aeronau- and the weather bureau.

**he Weather in 1947.**—er most of the U.S. and thern Canada east of the ky mountains the tempera- es during Jan. 1947 averaged ch higher than usual. High- abnormalities were in Manitoba and North Dakota where artures of +14° F. raised the mean temperatures to 15° 20° F. Texas was exceptional. There the monthly tempera- e averages were between normal and 4° below normal. In the cky mountain and Pacific coast states averages were mostly to 4° below normal. However, the weekly averages during uary ranged from 18° or 20° below normal in Texas to 24° ve normal in South Dakota. Actual extremes ranged from 5° F. in Minnesota and −30° F. in Kansas early in the nth to + 52° F. in Minnesota and +63° F. in Kansas on the h. Total precipitation for the month was heavy east of the ssissippi, twice normal in parts of Alabama, Mississippi and nnessee and below normal in the western two-thirds of the S. and Canada except in Iowa. Lowest amounts were in Cali- nia and parts of Utah, Nevada and Arizona where only 25% less of normal precipitation fell. A severe storm late in Janu- brought extremes of weather to the central states. It caused ezing rain, sleet, snow and thunderstorms with sharp light- g. Deep snowdrifts halted traffic in Milwaukee and other rth central cities.

In the British Isles and western Europe mild weather in mid- uary gave no hint of the rigours of winter which were to fol- ; Jan. 20, 1947, brought the heaviest snowfall over south- st England since 1891. Although the average depth was gen- lly less than 12 in., traffic was stopped and villages isolated h 12-ft. drifts in some places. Temperatures were zero or er. Severe cold weather continued almost without interrup- n through February and the first half of March. Frequent ws added to the hardships. Then came spring thaws and ods that caused damage in England estimated at £12,000,000. eather records indicated that for England as a whole February s the most severe winter month since Jan. 1814, and the three nter months ranked tenth in lowest mean temperatures for preceding 200 years.

On Jan. 29 the lowest temperature at Greenwich was just der 10° F., the lowest since 1895. The mean at Oxford for oruary was 27° F., the coldest month there since records were gun in 1815. There was drifting ice in the North sea off the tish coast, an extremely rare occurrence. For three weeks dur- February the sky over London was continuously obscured by clouds. Precipitation during March was three times the normal amount in many parts of England and Wales and the heaviest during that month for a century.

In the U.S. during February temperatures averaged as much as 10° F. below normal east of the Rocky mountains, and from 2° to 8° above normal over and west of the mountains. In northern Florida minima as low as 18° F. occurred and frost caused damage to citrus crops estimated at $50,000,000. Feb. 1947, however, was a typical winter month with the usual fluctuations in temperature and with occasional storms that brought snow, freezing rain and gale winds to many parts of the north central states. Precipitation was generally a little below normal.

In temperature distribution during its first half, March was similar to February, warmer than usual west of the Rockies and colder eastward except in New England where it was about 2° above normal. Exceptional rainfall occurred at Baton Rouge, La., where on March 13, 7 in. fell in about 6½ hr., causing flood damage. In other parts of southeastern states precipitation exceeded twice the normal amounts, but in the far southwest and in central parts of the Ohio and Mississippi basins rain and snow were less than half the normals.

April weather was not unusual for the U.S. Average temperatures ranged within 4° of normal. In the southeastern states and west of the continental divide averages were slightly above normal; in the plains, Great Lakes and New England states, slightly below normal. Except in a few localities precipitation was close to normal. Heaviest anomalies were in Nebraska and Michigan where amounts were two-and-one-half times normal. Tornadoes and spring floods made their usual appearance. The tornadoes came with a low pressure centre that developed over southern California and moved east-northeastward across Kansas followed by a sharp cold front. In Texas and Oklahoma tornadoes on April 9 and 10 were the worst in 10 years; they caused 150 deaths, 1,000 injuries and $12,000,000 property damage. The worst floods were in lower Michigan, North Dakota and in coastal streams of the Gulf states.

May and June were unseasonably cool and wet in most of the central states, and spring planting was seriously delayed. During the second week of May unseasonably heavy frosts damaged crops and fruit in the Ohio valley, Maryland and Virginia.

Freezing weather extended as far south as North Carolina. Persistent rains in Arkansas, Kansas, Oklahoma and Texas caused floods in many of the streams, and snow in the northern plain states during the last week in May added to agricultural problems. In central Wisconsin the snowfall reached 9 in. in depth, and in northern Iowa 5 in.

Abnormal weather—cool and wet east of the Rockies, and warm and dry in the west—continued through most of June except in the Gulf states. The retarded season became so critical in the corn belt, especially in view of the world food shortage, that farmers laboured day and night, some by artificial light, to complete planting when the weather turned favourable. It was estimated that each day gained in this crucial stage added $10,000,000 to $20,000,000 to the total value of the corn crop in Iowa alone.

In June heavy flooding in the lower Missouri and central Mississippi valleys broke all-time records at many points. A crest of 40.3 ft. was reached later at St. Louis on July 2. Total precipitation from May 27 through June 30 was 15 in. in northern Arkansas and Iowa, and 8 in. or more over most of the Dakotas, Kansas, Nebraska and Illinois. Florida and the coasts of Georgia and the Carolinas recorded 8 to 12 in. The heavy rains caused damaging flash floods in parts of Kansas, Nebraska, Iowa and Missouri. Tornadoes were typical of May and June in number and distribution.

In July the weather turned generally hot and dry except in the Ohio valley and the Carolinas where it was cooler than usual, and in New England where it continued wet. By the last of August central and eastern U.S. and Canada, especially in southern Ontario, were suffering from heat and drought in contrast to the cold and rain of May and June. In Toronto the all-time records for sustained heat were exceeded during August and new records were established also in parts of the middle west. Exceptional was a very local flash flood in Erie, Pa., on July 22. In 24 hours 10.4 in. of rain fell, most of it between 9 A.M. and 6 P.M. During July temperatures averaged 2° to 4° above normal west of the Mississippi and in New England and Ontario, but in states along the Ohio river and in the southeast they were 2° to 4° below normal.

In August the weather was warmer than usual almost everywhere in the U.S. except in California, Oregon and Florida. Largest excess in temperature was in Iowa where the departure from normal was +10° F. This gave average temperatures between 80° and 85° for the entire month. Precipitation during August was only about half the normal in the plains, southern Rocky mountains and New England states, and except for local anomalies of 50% to 100% above normal in southern Ohio, northern Montana and coastal zones of Oregon, Texas and North Carolina, rainfall was elsewhere close to normal. For the summer as a whole (June, July and August) average temperatures were about 2° above normal except in the Ohio valley and the southeastern and plateau states where it was approximately average. Rainfall during the summer was about 50% normal in much of the south central and southwestern states.

The hot, dry summer weather continued through two-thirds of September, then gave way in the east to an unusually long period of fine weather, but in the west the brief periods of cooler weather were quickly followed by return to temperatures which averaged as much as 12° above normal in Kansas and Wyoming during the last week of September. Averages for the month were 6° above normal for Kansas and northern Texas. September was very dry in the far western and southwestern states with only 25% to 50% normal rainfall. At the end of the month the warm weather was quickly followed by killing frosts in the northern states. The short growing season was at an end and agricultural production for the world food program suffered.

Although several tropical cyclones were reported in the bean and Gulf of Mexico during August, September and ber, only two caused major and widespread damage. Th appeared about 750 mi. east of Martinique, W.I., on Se By the 17th it reached Florida. Winds of 140 m.p.h. or were reported from the storm area, in paths extending width of 120 mi. at times. In its passage near Miami, Fla New Orleans, La., the storm cut off communications from cities and isolated the principal hurricane warning headqu of the U.S. weather bureau in those two cities.

A smaller hurricane brought heavy rain but did relative tle damage except for flooding in southern Florida on Se and 24. Still another caused squalls and heavy rain on th coast of Florida and Georgia on Oct. 6. The second majo ricane appeared near Swan Island on Oct. 9, crossed sou Florida during the 10th and 11th and brought winds o m.p.h. and further heavy rains. This tropical cyclone was worthy because it apparently turned westward into Georgia having left the Florida coast and moved northeastward considerable distance into the Atlantic.

In the British Isles the unusual cold of February and M gave way to weather nearer normal in April with its usual variations in rainfall and condition of sky. In the south of land there was somewhat more sunshine than usual; and i north more rain, a record fall of 10 in. occurring at Esk muir. Although weather in May was alternately warm and it was not very unusual except for the maximum tempera on May 31. In London the highest was 90° F. In some p this heat wave gave the highest temperatures in May fo years. Continuation of the heat into June with little relief at night brought such abnormal temperatures that the m came to be known by some as "flaming June." Temperatur 90° F. and above were the more remarkable because of the trast with minima below zero only 10 or 12 weeks before Kew observatory near London 91° F. broke all previous records. The remainder of June was sunnier than usual in so east England, and warmer. Elsewhere it was typically unset

Rather warm weather even for the season continued du July. Thunderstorms were more frequent than usual. During last few days of the month many places in France reported m mum temperatures at record highs above 100° F. Au brought an unusually long period of fine weather. Mean perature at Kew was 68° F. Rainfall was negligible in m places and generally less than 25% of the average for Augus

Weather continued generally fair through September, the successive month with mean temperatures above averag most parts of the isles. In October it turned very dry ag and for much of England was the driest October on rec During November and December also the meteorological co tions throughout Europe were not unseasonable in general, in Switzerland shortage of rain threatened to cause shutdo in major hydroelectric plants and stop rail traffic.

In North America the last three months of 1947 were n worthy for several weeks of warm, dry weather, especially New England where many destructive forest fires occur Practically everywhere in the U.S. mean temperatures for O ber were above normal. The greatest excesses were in Iowa states bordering Lake Michigan where temperature means w in the 60s F. Not until the last of October was the period pleasant weather interrupted by wintry cold which brought sn to Montana, Wyoming and North Dakota. But it turned wa again the first of November and portions of North Dakota av aged 12° F. above normal for the week ending Nov. 4. A pressure centre which developed over Colorado and mo northeastward into Canada the second week of November ag reversed the temperature trend. The cold front carried tempe

es to freezing or lower almost everywhere east of the Rockies
ept in the coastal and southeastern states. In the northern
n and plateau states temperatures went below zero; killing
sts were extended to northern Texas, Arkansas and almost to
Ohio valley. Temperatures remained below normal in most
ons and the November averages were generally low, the low-
monthly departures being in Wyoming and Nebraska, 6° be-
normal. However, for the three autumn months as a whole
rage temperatures in the U.S. were above normal, about 2°
ve in most regions, but 4° above normal in the central plain
es. Precipitation was fairly close to normal in most states
ing November, and the totals for the three autumn months
e mostly representative of the season. In early December
w covered the ground throughout interior New England and
n Michigan to the western slopes of the Pacific coastal
ges and southward to Colorado and Utah. Depths were 12
or more in Minnesota, the Dakotas and the Rocky moun-
states. Exceptional were two snowstorms in the Boston,
ss., and New York city areas near the close of the year. The
t struck Boston Dec. 23 and 24 in time to give much of New
gland a white Christmas; the second buried New York city
northern New Jersey on Dec. 26 and practically stalled the
's business for two days. It marooned suburban trains and
upted street traffic and communications. Within about 20
25.8 in. of snow fell in the city. This was almost 5 in. more
n the amount that fell in the famous blizzard of March 1888
was the greatest depth of snow from a single storm in the
orded history of New York city. (*See* also DISASTERS;
ODS AND FLOOD CONTROL.) (F. W. RR.; X.)

## ethodist Church.

There were four church-wide Methodist gatherings in the United States
ring 1947. (1) A congress of 200 leaders met in Chicago, Ill.,
led by the board of temperance. Prohibition was scarcely
ntioned, the emphasis being on measures to protect dry terri-
y from invasion of the liquor traffic by means of newspaper
magazine advertising. Feb. 15, 1948, was named as Com-
ment day, the focus of a pledge-signing campaign. (2) More
n 200 rural pastors met in Lincoln, Neb., in July to consider
ns for strengthening this field, which is the chief recruiting
und for the ministry and which is too often left to men
o have seen their best days. (3) The 7th Ecumenical
thodist conference met in Springfield, Mass., in September
a nine-day session. This world congress has no authority
t affords a forum for the discussion of matters common to
thodism everywhere. It set up a new ad interim agency,
Ecumenical Methodist council, composed of 200 members
m 24 groups, the largest of which, the Methodist Church,
S.A., had 50 members. Bishop Ivan Lee Holt of St. Louis,
., and Dr. Wilbert F. Howard of Birmingham, Eng., were
chairmen; Prof. Victor Murray of Cambridge university
Bishop Paul N. Garber of Geneva, Switz., vice-chair-
n, and Harold Roberts of England and Oscar T. Olson
Cleveland, O., secretaries. (4) The National Methodist
uth conference, made up of 10,000 representatives of the
00,000 members of the Methodist Youth Fellowship, met in
eveland, O., Dec. 30. This unique assembly, sponsored by
board of education, gives youth its first opportunity to ex-
ess its mind on current problems in the church, the nation
the world. Its motto is "Christ Above All."

Officers of the Council of Bishops in 1947 were: Bishop Paul
rn of Nashville, Tenn., president; Bishop James C. Baker
Los Angeles, Calif., vice-president; Bishop G. Bromley
nam of New York city, secretary.

The year's obituary list is headed by five bishops of whom
o were "effective" and three "retired." Schuyler H. Garth (48) of Madison, Wis., perished with his wife in the crash of a U.S. army plane in China, Jan. 15; F. H. Otto Melle (72), broken by his wartime labours and cares, died in Berlin, Ger., March 26; at Naini Tal in his beloved India, where he had been a missionary 40 years, John W. Robinson (81) died on May 5; Bruce Baxter (54) of Portland, Ore., died there on June 20 in the midst of an active career; and Ernest G. Richardson (73), who had been recalled to active service in the Wisconsin area, died in Philadelphia, Pa., on Sept. 3.

The general conference, the supreme legislative body of the Methodist Church, was to convene in Boston, Mass., on April 28, 1948, and the six jurisdictional conferences in the United States were to follow within 60 days after its adjournment. Their chief function is the election of bishops. Among the numerous proposals for legislation were several dealing with the race question. Some proposed the abolition of the central jurisdiction, which segregates the Negro membership. Others advocated the complete removal of the jurisdictional feature of the unified church as being essentially divisive and a needless piece of machinery. Still others would restore episcopal elections to the general conference, where they were until 1940 when the three churches came together.[1]

The Methodist publishing house reported unprecedented sales volume in 1947, the total rising to $9,910,309, though mounting costs of paper and labour reduced profits. The appropriation of $400,000 for ministerial pensions was equal to that of 1946. *The Christian Advocate* (Chicago, weekly) had a circulation of 345,363.

The latest available statistics placed the membership, active and inactive, at 8,567,772; amount paid for ministerial support, $49,395,157; for world service, $10,555,589; for current expenses (except pastoral support) and on local church debts, $83,667,251; for other benevolences, $20,520,466; total paid for all purposes, $164,138,463.

Bishop Herbert Welch, chairman, reported for the committee on relief receipts for the year ending May 31, 1947, as $1,677,186, bringing the total for this purpose after 1940 to more than $6,000,000. The funds had been distributed to needy war-sufferers in 30 European and Asiatic countries and the Philippines. About one-half of the total was distributed through interdenominational agencies. A notable item in the relief program was the response to *The Christian Advocate's* appeal for gifts of $100 each for the families of German Methodist ministers. Within a few weeks the receipts exceeded $50,000.

Appropriations for missions for 1948, home and foreign, were $10,177,738, an increase of $796,239. Of this total, $3,857,539 was designated for overseas work, $2,048,535 for the home field, and $4,271,664 for the Women's Division of Christian Service, which supports activities for and by Methodist women at home and abroad. The Board of Missions approved the project for a Christian university in Japan, which was characterized as a "voluntary gift as a gesture of goodwill from the Christian people of America to the people of Japan."

The plan for extending aid to Methodist youth of foreign lands in the form of scholarships in schools and colleges in the U.S. and other countries was in full operation. In 1947, 195 young men and women were helped in the U.S., besides others in their own lands. (*See* also CHURCH MEMBERSHIP.)

(J. R. J.)

**Metropolitan Museum of Art:** *see* MUSEUMS.

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[1] This article summarizes the activities of the new church which was formed in 1939 by the union of three Methodist sects—the Methodist Episcopal Church, the Methodist Episcopal Church, South, and the Methodist Protestant Church. It does not cover the activities of the numerous smaller bodies of Methodists, viz.—African Methodist Episcopal Church, African Methodist Episcopal Zion church, Coloured Methodist Episcopal Church, Wesleyan Methodist Church, Free Methodist Church, Primitive Methodist Church, etc.

**Mexico.** A federal republic of North America lying between the United States and Central America. Area, 767,168 sq.mi.; pop. (est. 1946) 22,752,738 (19,473,741, census 1940). Approximately 55% of the population was mestizo, 29% Indian, 15% white, with foreigners and others making up less than 1%. The language is Spanish, but an estimated 14% speak only Indian tongues. There is no official state religion, but the people are overwhelmingly Roman Catholic. The capital is Mexico City (pop. 1,965,997). Other principal cities are: Guadalajara, 228,049; Monterrey, 180,942; Puebla, 137,324; Mérida, 98,334; León, 86,089; Tampico, 81,334; Aguascalientes, 81,124; San Luis Potosí, 78,042; Torreón, 76,613; Veracruz, 70,958; Chihuahua, 57,456; Pachuca, 52,387. President in 1947 was Miguel Alemán (took office Dec. 1946).

**History.**—President Miguel Alemán began his term of office in the closing weeks of 1946. His plans were keynoted in his first major declaration of 1947 when he issued what purported to be his fourteen points. In summary his points were to: (1) expand production of foodstuffs so that Mexican people would have sufficient quantities at reasonable prices; (2) encourage adequate exports so as to assist in feeding other peoples in fulfilment of international obligations; (3) mechanize agriculture, improve co-ordination and extend ample credit to increase farm production; (4) modernize industry; (5) conserve industry established during the emergency which would be needed in the national economy; (6) foster development of new industries which would better the country; (7) defend the principle of fairness in regard to factors of production; (8) develop training, techniques and sciences; (9) foster harmonious development of potentialities of each region; (10) invest more than $300,000,000 in irrigation and electrical power plants, sufficient to water 3,400,000 ac. of land; (11) group industry adequately according to zone; (12) accentuate interest of the state in public health and adequate housing; (13) develop social security; and (14) raise the general standard of living. It should be noted that the program, ambitious though it may be, was relatively conservative. No mention was made of sweeping reforms or righting of injustices. Neither did the program discuss international relations or attitudes. Full attention was given to law, order and internal development.

The year began, however, with a major agricultural calamity, which grew as the year progressed. This was a serious outbreak of hoof-and-mouth disease which was estimated eventually to have affected almost one-third of the nation's cattle. The outbreak was traced to the importation of some blooded bullocks from Brazil. Interestingly enough, negotiations had originally been for United States stock, but the price was then felt to have been too high. As soon as the epidemic became known, certain of the border states of the United States began agitation for the closing of the Mexican border. This could have been very serious to Mexico, since beef export was an item of major importance and since Mexico needed exports to support its currency. A joint United States-Mexican commission was formed, which recommended the extreme measure of destroying all exposed and infected cattle. The Mexican government promised to reimburse the farmers at the rate of one peso (20.64 cents U.S.) per pound and to supply tractors and mules to substitute for draught animals. By December, almost 500,000 cattle had been sacrificed in the mass slaughter, but still the disease continued. Resistance to the government measures in rural areas ran very high. Farmers tried to hide cattle, smuggled cattle out of infected areas, and even offered armed resistance. In Ciudad Hidalgo, state of Michoacan, for example, a squad of six soldiers and a veterinarian were stabbed to death while making an inspection. As a result of the farmers' opposition, the government removed the soldiers and substituted civilians for sacrificing the animals to avoid repercussions against the army. ment was finally reached with the commission to temp policy by switching from eradication by destruction to sive use of vaccines and destruction of infected animals However, the year ended with the disease still largel checked.

One result of the attention given to the grazing industr the decision to improve the meat packing and processing ties of Mexico so as to make that country more self-suff Plans were laid for the establishment of three meat pa plants in Sonora, two in Chihuahua and in Coahuila, an each in Michoacan, Jalisco, Veracruz, and Tamaulipas. frozen and canned meats would be processed.

A much more pleasant note was sounded in the visit c president of the United States to Mexico and the return vi Pres. Alemán to the United States. The announcement made in January that arrangements were being made for a of President Harry S. Truman in March. Inasmuch as marked the centennial of the battle for Mexico City in th between United States and Mexico there was some co over the project. However, comment was generally very fa able, and when Pres. Truman arrived in his special plane "Sacred Cow," on March 3, he was given a very warm friendly reception, including a 21-gun salute. Pres. Truman his party were taken on a tour which included visits to pyramids and Mexico's newly formed volcano, San Paric Almost upon arrival, the United States president made th precedented and apparently unscheduled request of being mitted to lay a wreath upon the monument to the Mexican tary cadets, who had sacrificed themselves a century befo attempting to hold Chapultepec against the invading U States troops. This tribute to the Mexican national h brought immediate acclaim in Mexico and increased still ther the enthusiasm of the president's reception. Pres. Ale then accepted an invitation to visit the United States.

On April 29 the "Sacred Cow" arrived in Mexico City took aboard Pres. Alemán and his party, including Jaimé T Bodet, secretary of foreign relations, Ramón Beteta, secr of the treasury, and the United States ambassador, W Thurston. An ovation was given to Pres. Alemán at Wash ton, where he was met by Pres. Truman and a 21-gun sa After a tour of the Capitol, Pres. Alemán was invited to add the United States congress. He then travelled to New where he was given an ovation and Mayor William O'D proclaimed the day of his visit as Mexico day.

During Alemán's visit to the United States a $100,000 loan was arranged. By the agreement, $50,000,000 was loa to Mexico by the Import-Export bank, and the United St treasury agreed to purchase $50,000,000 worth of Mex pesos over the next five years to help support the Mex currency.

In November, Mexico played host to the second confere of U.N.E.S.C.O., the educational and scientific organization the United Nations. The conference was opened by Presid Alemán in the Mexico City opera house, Bellas Artes, on Nov Later sessions were held in the auditorium of the Normal sch where special attention was given to such subjects as exp tions, libraries, museums, primary education and educatio reconstruction. Mexico offered to set aside a school in the st of Nayarit to serve as a pilot establishment for testing precepts developed by U.N.E.S.C.O.

Except for a few local instances in some of the provin capitals, Mexico was relatively quiet in 1947. The leftist position was still headed by Vicente Lombardo Toledano, labour leader. Lombardo Toledano made several minor re ganizations in his party and keynoted his nationalist position

TA DANCES at the National stadium in Mexico City staged in honour of
Harry S. Truman during his visit to Mexico in March 1947

statement: "We do not serve Moscow, or Washington, only
xico." However, the A.F. of L. removed three of the Lom-
lo Toledano men from its leadership, showing further rift in
quarter. Conservative opposition in Mexico was more and
e being paced by the pro-clerical Sinarquista group. The
rquistas crusaded loudly against "communism" and at one
e publicly offered to raise 1,000,000 men to assist the United
tes in a war with Russia, which, needless to say, was given
fficial notice.

conomically, there were several significant developments in
xico. In the first place, final agreements were reached for the
lement of the British and Dutch oil expropriation claims.
se claims of $250,000,000 were scaled to $21,250,000. Also,
nal payment of $4,085,327 was made to United States firms,
ging the total U.S. payment to $29,137,700.

here was a general business lull in Mexico during 1947. Cost
living remained little changed (index in terms of pre-World
r II: 297.1, 1946; 284.8, 1947), and unemployment in-
ased to an estimated 5%. Also, the building boom in the
ital eased considerably, although there was still a housing
rtage. Steps were taken through subsidies to increase the
ing industry. Plans were made to grant approximately ten
ts per pound for all fish caught. It was hoped thus to in-
ase the interest of Mexicans in building a fishing fleet to
npete with the United States fishermen who were fishing in
near Mexican waters. With the depletion of the United
tes sardine supply and the migration southward of the giant
a, this could prove to be a very important move. Most dis-
ing, perhaps, was the drop in the price of silver which also
ected adversely upon the trade balance. Motion picture pro-
tion, from which so much had been expected, slumped from
to 60 pictures. The explanation was that costs had risen
e than 300% and, more important, that banking regulations
badly frozen credit. Mexican films were produced largely
short-term loans, since no important financial interests had
et been developed. As a result, much of the export market
atin America was being regained by United States and other
foreign producers. Another element of concern was the continued falling off of remittances from Mexican labour in the United States. In 1945 remittances were $40,000,000, in 1946, $10,000,000, and in 1947 they had dwindled even more.

On the brighter side of the economic picture, both manufacturing and agricultural production continued to rise. Increased irrigation and the governmental policy of granting five years of tax-free operations to newly licensed enterprises contributed to this effect. President Alemán specifically made a bid for the investment of foreign capital—but, of course, under the Mexican laws requiring a predominance of Mexican management and labour. There was some indication that the president's policy was meeting with at least limited success in this regard.

**Education.**—Education is free, compulsory and divorced from religion. Private schools are allowed, however, to teach religion. There were approximately 25,000 primary schools, with 2,765,568 enrolment (the federal government had, in 1946, 32,778 teachers and 1,837,400 students). Secondary schools had about 80,000 enrolment (47,332 enrolment in 522 government schools in 1946 including technical and agriculture). Also, the 10 universities had about 30,000 enrolment, of which 22,230 (1945) attended the autonomous University of Mexico, Mexico City. Six normal schools had 3,800 students in 1946. Illiteracy was about 35%; however, this number decreased about one-fifth under the impact of the new program of "each person teach one person to read," and as a result of special instruction given to all personnel in the army who were illiterate. An estimated 41.8% of illiterates were reached by the end of 1946.

**Finance.**—The monetary unit is the peso (value in Dec. 1947, 20.64 cents, U.S.). By July 1947 money circulation, including bank deposits, totalled $835,283,920 ($852,947,800 in 1946) of which $344,956,320 was in bank bills and $384,795,280 was in deposits. There were 362 banks with total assets of $517,981,440 and outstanding loans of $197,315,200.

The national income was $2,677,108,000 in 1946 ($2,474,323,200 in 1945, and still rising in 1947). Earnings in 1946 were: agriculture $279,672,000; grazing $134,160,000; fishing $17,544,000; forestry $33,024,000; mining $196,180,000; oil $28,896,000; manufacturing $695,568,000; commerce and finance $639,840,000; rentals $160,992,000; transportation $127,968,000; government service and public works $158,928,000; domestic service $86,688,000; entertainment, professional service, and other $94,944,000.

For 1947 the national budget totalled $247,974,514.74. Some of the larger items were $37,585,440 for army national defense; $8,297,280, navy; $42,910,560, education; $39,009,600, irrigation; $11,904,532, public aid; and $31,401,489 to be applied on the public debt.

**Trade and Communication.**—The balance of trade during 1946 was unfavourable for the second successive year for Mexico although the total volume of trade was higher than in previous years. During the first half of 1947 the unfavourable balance continued and volume continued to increase, running one-third to one-quarter greater than in 1946. In order to ease the unfavourable balance and to support the currency, severe restrictions were imposed upon certain classes of imports commonly known as luxuries. The effects of this move had not been fully tabulated by the end of 1947. Exports in 1946 equalled $404,750,400 ($275,234,400 in 1945). Gold, silver, copper, lead, zinc, oil and other mining products comprised the largest group of exports. Beef, henequen, tomatoes, chicle, bananas, coffee, guayule rubber, cotton, tuna fish, vanilla, vegetable wax and fodder stood high on the export list. Values according to certain general classes during 1946 were: animal products $26,439,840; vegetable products $82,931,520; mineral products $166,864,160; other $118,556,160.

Imports in 1946 were $544,276,800 ($330,941,760 in 1945). Manufactures, including machinery and processed items, comprised the largest portion of the imports; wheat, wool and rice figured heavily. Values according to certain general classes in 1946 were: food products $73,602,240; durable goods $110,506,560; investment goods $200,228,640; industrial products $95,728,320; and other products $59,567,040.

Communications were by sea, especially through Veracruz; by three main railways to the United States and one to Guatemala; by air to all parts of the hemisphere; and by a growing network of motor roads.

Merchant fleet gross tonnage in 1947 was 118,703 for freight and passenger service, and 3,095 for fishing. There were 236 craft of Mexican registry of which 23 were tankers (68,698 gross tonnage). In 1946 there were 1,036 locomotives, 17,491 freight cars and 560 passenger cars belonging to the national railroads of Mexico. These carried 26,124,510 tons of freight in 1945 and 39,000,000 passengers. Railroad milage was about 15,000. There were also more than 36,000 mi. of improved roads of which 5,000 were paved and 7,000 were traversable in all types of weather.

**Agriculture.**—Mexico had an estimated 37,050,000 ac. of tillable land, of which 13,410,556 ac. were under cultivation according to the 1940 census. More than 17,000,000 ac. were under cultivation in 1945. Forest land comprised 25,893,993 ac. (latest estimate by bureau of forestry 70,322,182 ac., of which 64,458,768 ac. had standing timber); grazing land 69,713,715 ac.; 2,471,000 ac. were estimated to be under irrigation by the end of 1945 (more than 2,000,000 ac. of this was under cultivation). Latest estimates on the amount of land which could be irrigated if all potential waters were employed totalled about 12,000,000 ac.

Agricultural production was (in tons): maize 2,843,160 (1946); wheat 380,100 (1946); rice 145,464 (1945); sugar 413,300 (1946); beans 201,666 (1945); large kidney beans 18,594 (1943); chick peas 109,688 (1945); bananas 5,169,000 stems (1945); pineapple 11,247 (exported 1945); coffee 58,406 (1945); henequen 167,000 (1945); chicle 11,590 (1945–46); oranges 254,200 (1945); green peppers 41,000 (1945); dry peppers 13,300 (1945); potatoes 140,000 (1945); cotton 443,000 bales (1946); sesame 72,500 (1944); tobacco 25,300 (1944); avocados 68,400 (1945); vanilla 164 (1943) and copra 48,520 (1944).

Animal census (1940) by head was: cattle 11,621,879; horses 2,511,175; mules 932,522; donkeys 2,341,539; sheep 4,401,014; goats 6,849,709 and hogs 5,067,642. An estimated 164,000,000 ac. were devoted to range.

Timber produced in 1946 was 330,564,000 bd.ft. of sawed lumber (mostly pine, mahogany, red cedar, white cedar and primavera). Other timber amounted to 303,017,000 bd.ft. and firewood, 278,860,400 bd.ft. Dyes and turpentine yielded 47,400 tons; charcoal, 177,000 tons; resins, 24,300 tons; vegetable wax 5,200 tons, other products, 41,200 tons.

**Manufacturing.**—Expansion of Mexican industry continued during 1947, but at a much decelerated rate. During the first six months of 1947, 26 new industries were registered in Mexico. This compared with 46 during the previous half year and 230 for the period Jan.–June 1946. They included semicellulose, maguey fibres, steel, vitamized milk, leather tanning, linen thread, Portland cement, metal containers, carbon steel, electric switches, table salt, viscose rayon, cement and appliances. Other important manufactures were cigarettes, textiles (cotton cloth totalled more than 600,000,000 yd. in 1946 and woollen cloth about 150,000,000 yd.), glass, sugar, shoes (3,523,700 pairs in 1946), chemical works, breweries, flour, paper, electricity (3,068,451,000 kw. hr. in 1945), ceramics, and woodworking.

Tourists entered Mexico in 1946 to the amount of 272,121.

Comparative average weekly wages for 1946 were: railroad $13.54; cotton spinners and weavers $9.87; silk spinners and weavers $13.14; mining $10.11; and oil $23.59.

**Mineral Production.**—Although mineral production was no longer the greatest single factor in Mexico economy, it still ranked very high in importance and was fourth in importance as regards national income. Surveys of strategic metals during World War II showed a vast potential awaiting development. During 1945 mining, except for coal and iron, fell off slightly, silver being worse hit. However, the first figures received for the period January–April 1947 indicated an improvement. Production of the various metals in 1946 was: gold 420,506 oz. troy; silver 43,263,800 oz. troy; copper 67,765 tons; lead 154,438 tons; zinc 153,768 tons; antimony 7,241 tons; arsenic 10,632 tons; bismuth 84 tons; cadmium 790 tons; coal 1,077,017 tons; chrome 115 lb.; tin 294 tons; graphite 24,189 tons; iron 311,032 tons; manganese 13,600 tons; mercury 443 tons; molybdenum 1,449 tons; tungsten 52 tons; and silicon 200 tons (1945).

Petroleum production continued to increase during 1946 and 1947, and was the highest after 1928. Crude produced in 1946 equalled 49,235,421 bbl. (8,675,551 bbl. heavy crude and 40,559,870 bbl. light crude). During the first six months of 1947, 27,676,163 bbl. of crude were produced and 33,201,229 bbl. of derivatives. Refinery products in 1946 comprised: fuel oil 25,763,702 bbl.; Diesel oil 5,033,044 bbl.; gasoline, crude, 11,538,282 bbl.; gasoline, refined, 6,491,311 bbl.; kerosene, crude, 3,126,344 bbl.; kerosene, refined, 1,641,281 bbl.; lubricants 330,250 bbl.; paraffin, crude, 103,156 bbl.; paraffin, refined, 106,855 bbl.; asphalts 2,216,181 bbl.; and other 396,861 bbl. Local consumption accounted for 40,670,757 bbl. of petroleum and petroleum products.

Well drilling continued at an improved rate. During 1946, 52 wells were drilled (31 producing, 11 dry and 10 salt water). Twenty-two wells had been drilled during the first six months of 1947.

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(C.

**Mica.** The major world producers of mica are India, and the U.S., with smaller but significant out Brazil, Argentina, Madagascar, Norway, Rumania, Spa Sweden. From the standpoint of total tonnage, the States is the largest producer, but the bulk of the ou scrap mica, while it is sheet mica that is of chief importa

**United States.**—The significant data of the mica indu the United States are presented in the following table.

*Data of Mica Industry in the U.S., 1941–46*

(In short tons)

| | 1941 | 1942 | 1943 | 1944 | 1945 |
|---|---|---|---|---|---|
| Amount sold or used | | | | | |
| Sheet and punch . . | 1,333.2 | 1,380.9 | 1,724.1 | 761.7 | 649.3 |
| Scrap . . . . . . . | 32,500 | 43,262 | 46,138 | 51,727 | 41,060 |
| Total. . . . . . . | 33,833 | 44,643 | 47,862 | 52,489 | 41,709 |
| Imports. . . . . . . . | 8,300 | 11,294 | 13,759 | 7,242 | 9,405 |
| Sheet and punch . . | 1,008.4 | 1,622.4 | 2,750.9 | 2,516.5 | 2,124.4 |
| Scrap . . . . . . . | 1,251 | 2,179 | 2,048 | 2,412 | 3,567 |
| Splittings* . . . . . | 6,041 | 7,493 | 8,960 | 2,314 | 3,695 |
| Splittings, consumption. | 3,648.8 | 3,318.3 | 4,206.7 | 4,408.5 | 3,948.7 |
| Stocks, Dec. 31 . . | 4,775.8 | 4,380.7 | 2,258.6 | 1,997.5 | 1,532.3 |

*Includes other manufactured forms.

While the production of scrap mica rose to a record fig 1946, sheet mica continued to decline.

**Canada.**—Mica production in Canada dropped from short tons in 1945 to 2,261 tons in 1946, but there were n on the proportion of sheet mica included in the total.

(G. A.

**Michael (Mihai) I** (1921– ), former king of Ru was born on Oct. 25 at Sinaia, s Crown Prince Carol and Princess Helen, daughter of Co tine, king of the Hellenes. On the death of his grandf King Ferdinand, he was proclaimed king on July 20, under a regency, by virtue of his father's renunciation succession. He ceased to be king on his father's accessi June 8, 1930, when he received the title of Great Voev Alba Iulia. He was proclaimed king again on King Caro abdication on Sept. 6, 1940. King Michael took a leading in overthrowing, on Aug. 23, 1944, the authoritarian and German regime of Marshal Ion Antonescu. For his initiati this coup d'état and the participation of the Rumanian ar the final stages of World War II on the Allied side, Michael was awarded, in June 1945, the Order of Victory highest soviet military decoration. On Nov. 20, 1947, he to London to attend the wedding of Princess Elizabeth. Dec. 15 it was announced in Lausanne that King Michael engaged to Princess Anne of Bourbon-Parma. On Dec. shortly after his return to Bucharest, he abdicated and Rum was proclaimed a "people's republic."

**Michigan.** One of the north central group of states of U.S., Michigan was the 26th state admitte the union; it is popularly known as the "Wolverine Sta Land area 58,216 sq.mi. (excluding 39,960 sq.mi. of Great L water surface); pop. (1940) 5,256,106; (estimate, Jan. 1, 1 6,300,000. Of the state's population in 1940, 3,454,867 urban, 1,801,239 rural. Whites composed 95.9% of the pop tion, nonwhites 4.1% (215,934). Capital, Lansing (78,7 Larger cities were Detroit (1,623,452), Grand Rapids (164,2 Flint (151,543), Saginaw (82,794).

**History.**—The Michigan legislature convened for its reg biennial session on Jan. 1, 1947, to remain for 157 days, d longest session since 1865. All but 9 of the 132 seats were d by Republicans. A most difficult problem confronting the slature was the loss of one-third of the state's sales tax me through its diversion to local governmental units in ac- lance with the constitutional amendment adopted by popu- vote in Nov. 1946. The first seven months' operation of the ndment diverted $31,000,000 to schools, counties, cities, vil- s and townships. An attempt to retain a part for the state reating a single school district to care for state educational enses such as appropriations for the state university, colleges, schools, and the teachers' retirement fund, was found un- stitutional. The legislature provided by joint resolution for resubmission of the tax-diversion question to the electorate Nov. 1948. A tax of three cents a package on cigarettes, ected to yield about $18,000,000 in revenue, was levied, but ill to increase the gasoline tax from three cents to four s a gallon was vetoed by Gov. Kim Sigler.

n spite of its failure to solve the problem of revenue, to itself of undue lobbying activity, to break the state liquor nopoly, or to enact much of Gov. Sigler's "clean govern- it" program, the legislature could claim many major accom- nments. Among the 371 bills enacted into law (10 others e vetoed) were many important measures. A community perty law opened the way to savings in federal income taxes many Michigan residents; provision was made for the pay- t of $270,000,000 voted in 1946 to Michigan veterans of rld War II; the child labour laws were revised and codified; pulsory arbitration of labour disputes in public utilities and pitals was provided for; the state planning commission was lished and a department of economic planning created; the kmen's compensation system was reorganized; old-age pen- s were increased from $40 to $45 a month; $6,400,000 was ropriated to the University of Michigan and to Michigan e college for new buildings; the juvenile institute commis- was abolished and its duties transferred to the department ocial welfare; and provision was made for submitting to the tors the question of calling a convention to revise the state stitution.

n the biennial spring elections the Republican-endorsed can- ates Henry M. Butzel, Leland W. Carr and John R. Dethmers by substantial majorities in the nominally nonpartisan con- for three seats on the supreme court. Republicans also won places on the board of regents of the state university, two the state board of education and two on the board of agri- ture. In the election of state superintendent of public in- uction, Eugene B. Elliott, Republican incumbent, received ,377 votes to 203,116 for George F. Montgomery, Demo- tic candidate. A constitutional amendment relative to can- ing noncontest judicial primaries carried 273,308 to 203,075, le a proposal relating to the length of time corporations may d real estate lost 209,159 to 247,948.

n a program to strengthen the executive branch of the gov- ment, Gov. Sigler made a number of changes in personnel organization. A special session of the legislature in Novem- empowered him to abolish the existing state prison and ole system and to centralize control in executive hands. He ointed Joseph W. Sanford, warden of the federal penitentiary Atlanta, as the new corrections commissioner, made Garrett yns, former corrections director, head of the new division of sons and industries, and appointed Ralph Hall Ferris, former istant director in charge of probation, as director of the new ision of pardons, paroles and probation. As head of the de- tment of social welfare, newly organized and expanded, he ned W. J. Maxey.

The death of Henry Ford in June not only recalled his long eer in Michigan industry, but also focused attention upon the policies of his grandson and successor, Henry Ford II. Other Michigan citizens much in the news were Walter Reuther, newly elected head of the United Automobile Workers of America, whose principal problems at the close of the year were the maintenance of peace within the organization and the continued rise in cost of living; federal district Judge Frank A. Picard, who ruled against union claims to portal-to-portal pay in a decision resulting from his earlier ruling in the Mount Clemens Pottery company case; and Joe Louis, whose victory over Joe Wolcott aroused discussion in sports circles only overshadowed by the University of Michigan football team's winning the western conference championship and its consequent selection to play in the Rose Bowl contest on Jan. 1, 1948.

**Education.**—There were 5,282 school districts in the state public school system in 1947 with an average membership of 607,189 pupils and 19,823 teachers in the elementary grades and 351,602 pupils and 12,594 teachers in the secondary grades. The fall enrolment in Michigan's 68 universities, colleges and normal schools reached a peak of 100,571 full-time students, of whom 52,433 were veterans.

**Social Insurance and Assistance, Public Welfare and Related Programs.**—The various state institutions of correction and their populations as of Dec. 1, 1947, were as follows: State Prison of Southern Michigan 5,704; Michigan reformatory 1,316; Marquette Branch prison 806; Detroit House of Correction 318; Cassidy Lake Technical school 80. There were 24 wayward minor boys and 42 wayward minor girls in custody. Expenditures of the state department of correction for the fiscal year 1946–47 were $6,137,444.

The activities of the social welfare department were considerably expanded when the legislature abolished the juvenile institute commission and placed the Boys' Vocational school in Lansing, the Girls' Training school in Adrian and the Michigan Children's institute in Ann Arbor under the jurisdiction of the department. More than $60,000,000 joint federal-state aid was granted to the aged, the blind and dependent children; more than $12,000,000 financed by state and local governments was spent for direct relief by the county welfare departments. The number of Michigan residents dependent to some extent upon these programs had risen from a wartime figure of 150,000 to 210,000, of which 92,000 represented old-age assistance. Numbers on direct relief declined from 93,000 in March 1946 to 57,000 in Dec. 1947.

Figures for the first ten months of 1947 indicated a death rate of 9.3 per 1,000, the lowest on record, and that births would probably exceed 150,000, breaking the 1946 record of 138,572. Figures for the same period indicated a divorce total of 24,500, 16% below the 1946 number, 29,158.

**Communications.**—The Michigan state highway department in 1946 started an $81,000,000 three-year construction program to be completed by 1950 with approximately half the cost to be borne by the federal government under the provisions of the Highway Act of 1944. At the end of 1947, of the projects under contract, representing a cost of $36,300,000, 114 had been finished and paid for, 54 were under construction and 17 had been put under contract. When all were finished they would provide 199 mi. of pavement; 151 mi. of gravel surface; 79 mi. of grading for future paving; 96 bridges, including several grade separations; and 218 mi. of bituminous concrete pavement resurfacing. The three-year program for county roads involved an expenditure of $17,762,020, one-half to be paid by the federal government. Contracts had been let for $7,134,798, involving 89 projects, which when completed would provide 306 mi. of new surfaces and 47 new structures.

**Banking and Finance.**—The 346 state banks in Michigan on Oct. 6 had total assets of $2,541,190.24; assets of 3 industrial banks were $7,962,396; those of 8 trust companies $45,873,524.37. Deposits had reached a total of $1,317,368,835.03, an increase of more than $440,000,000 from June 1941. Total assets of 78 national banks were $2,643,179,137.06 on Dec. 31, 1947. Total revenue from taxes, federal agencies, state enterprises, etc., for the fiscal year ending June 30, 1947, was $382,257,140.69; total operating expenditures, $369,480,278.42.

**Agriculture.**—In spite of lower yields caused by unfavourable weather conditions in 1947, the aggregate value of field and fruit crops was $418,000,000, an increase of 7% over 1946 and more than double the ten-year average (1936–45). Wheat and hay were above the previous year; corn, oats, potatoes, sugar beets, beans, apples and peaches, below.

Table I.—*Leading Agricultural Products of Michigan, 1947 and 1946*

| Crop | 1947 (est.) | 1946 |
|---|---|---|
| Corn, bu. | 44,165,000 | 50,512,000 |
| Winter wheat, bu. | 29,800,000 | 22,896,000 |
| Oats, bu. | 38,150,000 | 71,890,000 |
| Potatoes, bu. | 12,390,000 | 18,327,000 |
| Apples, bu. | 6,600,000 | 7,560,000 |
| Peaches, bu. | 4,526,000 | 5,100,000 |
| Field beans, 100-lb. bags | 3,129,000 | 3,841,000 |
| Barley, bu. | 3,450,000 | 5,037,000 |
| All tame hay, tons | 3,730,000 | 3,464,000 |

Because of the poor field crops, pig production for 1947 was the lowest since 1938. Cherries were down about 10%, popcorn 80%, alfalfa, alsike, red and sweet clover about 50%, while the maple syrup yield increased more than 125%.

**Manufacturing.**—Manufacturing in Michigan continued at about the pace set in the latter half of 1946. Unemployment stood at only 90,000 as compared with 110,000 at the end of 1946. Weekly man-hours were up 1.6 and weekly pay rolls 1.4. Average weekly hours were 40.4 in durable goods industries and 42.8 in nondurable goods. Average weekly earnings were $55.26.

The consumers' price index for moderate income families (Sept. 1941 = 100%) stood at 148.1 for all items in September (for food 181.5); although the increase in cost of living continued, the pace had slackened by the end of the year.

**Mineral Products.**—Michigan ranked first in the U.S. in salt and gypsum and led the midwest in the production of chemicals. Production of oil and gas, with 3,600 oil and 800 gas wells in operation, remained at a fairly constant level, with new discoveries and extensions of old fields balancing depletions from other areas. In 1947 for the first time an aeroplane was used to record magnetic attraction of iron deposits. As a result, known iron reserves were increased by about 10,000,000 tons.

Table II.—*Mineral Production of Michigan, 1945 and 1944*

| | 1945 | | 1944 | |
|---|---|---|---|---|
| | Quantity | Value | Quantity | Value |
| Iron ore, tons . . . . . | 11,834,652 | | 13,693,377 | $38,537,000 |
| Copper, lb. . . . . . . . | 60,801,716 | | 84,842,000 | 11,453,670 |
| Salt, tons . . . . . . . . | 4,285,493 | $14,942,443 | 4,287,758 | 14,921,719 |
| Petroleum, bbl. . . . . . | 17,267,493 | 24,262,364 | 18,490,000 | 26,600,000 |
| Cement, bbl. . . . . . . | 6,243,322 | 9,937,834 | 5,177,176 | 7,733,185 |
| Natural gas, M. cu. ft.. . | 23,298,548 | 3,159,839 | 21,253,903 | 12,900,278 |
| Sand-gravel, tons . . . | 12,199,977 | 6,107,890 | 12,184,583 | 6,103,136 |

BIBLIOGRAPHY.—*Michigan, A Guide to the Wolverine State* (American Guide Series, 1941); *The Michigan History Magazine*, quarterly; press releases and printed reports of the various governmental offices; *Michigan Official Directory and Legislative Manual*, published by the secretary of state biennially. (L. G. V. V.)

## Michigan, University of.

Enrolment levels established in the fall of 1946 were maintained and somewhat increased in 1947. For the first semester of 1946–47 the net total of resident students was 19,176, for the second semester 19,232 and for the entire year, which includes the 1946 summer session, 24,858. Nearly 5,500 others were enrolled in extension credit courses and short postgraduate professional courses, and 10,359 in noncredit extension courses. For the fall semester of 1947–48, 20,637 resident students registered. In view of increased costs occasioned by these larger numbers the state legislature of 1947 appropriated $8,570,000 for the university's operating expenses and $3,200,000 toward completion of the educational buildings already begun. The additions to the chemical laboratory and the engineering building, the food service building and a portion of the residence hall for men were occupied in the fall of 1947, and work continued on the other projects. On Jan. 24, 1947, the regents accepted from the war assets administrator the deed to the airport at Willow Run, including two large hangars, a number of smaller structures and more than 1,900 ac. of land. Reserving an adequate amount of space for purposes of research and instruction in aeronautical engineering and related sciences, the university leased the landing field and hangar facilities to a group of air lines which operated the airport as a terminal. Thus, one of the largest and most modern airports in the country was preserved for public use and at the same time invaluable laboratory facilities were acquired by the university. The deanship of the graduate school was filled by the appointment of Prof. Ralph A. Sawyer of the department of physics, who had served in the navy during World War II and had acted as technical director of the Bikini atom-bomb test. Other important events were the organization of a centre for Japanese studies and a survey research centre. (For statistics of endowment, enrolment, faculty, library volumes, etc., *see* UNIVERSITIES AND COLLEGES.) (F. E. R.)

**Microphotography:** *see* PHOTOGRAPHY.

## Mikolajczyk, Stanislaw

(1901– ), Polish politician, was born in Gelsenkirchen, Germany, the son of a farm labourer who emigrated from western Poland to work in the Westphalian mines. The family later returned to western Poland. He was wounded during the Russo-Polish War in 1920. After the war, he entered politics and at the age of 29 was elected to the sejm, serving from 1930 to 1935. He was made president of the Polish Peasant party in 1937. When the nazis invaded Poland in Sept. 1939, Mikolajczyk saw military action in the unsuccessful defense of Warsa
fled to Hungary and later escaped to France. He became
dent Paderewski's deputy in the Polish parliament in exi
succeeded to the presidency on Paderewski's death. Miko
became prime minister in 1943. He sought a settlemen
the Soviet Union on the Polish boundary dispute, but his
were hamstrung by anti-soviet elements within his cabin
he resigned Nov. 24, 1944. Mikolajczyk endorsed (Ap
1945) the Big Three decision on Poland which was reac
Yalta, and joined the new Warsaw government as deput
mier, June 23, 1945.

Throughout 1946, Mikolajczyk protested frequently th
Polish elections were not free and that the governmen
terrorist methods to intimidate his followers. In early 19
complained of the lack of "free and unfettered" electi
memoranda sent to the U.S., British and Soviet ambassac
Warsaw. Becoming increasingly unpopular with the Polis
ernment, Mikolajczyk fled Poland on Oct. 20 and made hi
to London and thence to the United States.

## Military Academy, U.S.

A government-maintaine
lege at West Point, N.Y
the training of young men for leadership in the profes
military service.

The new four-year curriculum went into full effect in th
of 1947. The nine additional professors authorized in 1946
selected and assigned to their respective departments. D
the previous summer the new four-year course in tactical
ing also began. Physical aptitude examinations for candi
were applied for the first time as a part of the regular ent
examinations in March. The exchange of visits between
shipmen of the U.S. Naval academy and the cadets
continued, as were the joint amphibious manoeuvres in
summer.

The course in military psychology and leadership wa
panded to a full year. A subdepartment was set up to han
under the department of tactics, consisting of a directo
associate director, who is a professional psychologist, an
tude officer and four instructors. In addition to its instruct
functions, the subdepartment is charged with the responsib
of implementing the policy on determining cadet aptitude
the military service.

(For statistics of enrolment, faculty, library volumes,
*see* UNIVERSITIES AND COLLEGES.)

BIBLIOGRAPHY.—*The Catalogue of Information of U.S. Military A
emy, West Point, N.Y.*, obtainable from the Adjutant General, De
ment of the Army, Washington, D.C., gives complete data on ent
requirements, examinations, courses, etc. (M. D. T

**Military Government, Allied:** *see* OCCUPIED AREAS,
MINISTRATION OF.

## Milk.

Production of milk in the United States in 1947
estimated by the U.S. department of agriculture at 1
276,000,000 lb., which was slightly above the total of 119,3
000,000 lb. for 1946 and somewhat short of the record proc
tion of 1945. The 1947 output was about 16% above the
war 1935–39 output. Total milk production was estima
at 834 lb. per capita, compared with 839 lb. in 1946 and 86
in 1945. Consumption of fluid milk and cream was estima
at about 403 lb. per capita, compared with 425 lb. in 1946
the high record of 433 lb. in 1945. More milk and cream w
used in butter and cheese than a year earlier. Exports of da
products declined in the first half of 1947, amounting to o
about 3% of the total production, compared with more than
exported in 1944.

The high production of milk in 1947 was remarkable beca he reduction in number of cows milked; the output per cow estimated at 4,900 lb., about the same as in 1946. In tember the production per cow was the highest in the 18 rs that records had been kept. This record was all the more arkable because of the high cost of feed. Dairymen main-ed a high rate of feeding in spite of the high prices. tures were good in the early summer, and the drought in summer was not severe enough to affect production to any iceable extent.

utter production in 1947 increased over the low record of 6 because of the larger milk supply; less milk was taken by whole-milk market. Butter prices were high, stocks low and supply much below the prewar level. The 1947 output was ut 12 lb. per capita, compared with nearly 18 lb. 1925–34. ese production increased at a rate somewhat below that of termaking, and ice cream production declined. The drop in ort demand early in the year reduced the output of dried condensed milk, but slightly more evaporated milk was de.

he price of milk to producers was at a high peak of $5.13 cwt. in Nov. 1946. The average in Jan. 1947 was $4.96 per ., followed by a steady decline to $3.64 per cwt. in June, n by a recovery to $4.35 in September and $5.02 in Decem-. The price of butterfat followed the same trend but did decline so much. During 1946 the price of butterfat had nped from 52 cents per pound in June to 90 cents per nd in October when controls were removed. The price in . 1947 was 74.5 cents per pound, 63 cents in June and 87.7 ts in December. The retail price of milk was raised in many as from about 16 cents per quart to 18 cents and in large es to 20 and 23 cents. While consumers resisted the price advances, the reduction of consumption was not large because of the advancing prices of other foods. (*See* also BUTTER; CHEESE; DAIRYING.)

(J. C. Ms.)

**Millstones:** *see* ABRASIVES.

## Mineral and Metal Production and Prices.

As will be seen from an examination of the world production tables shown in articles on the various minerals and metals scattered throughout this volume, most of the gaps in the data for the war years have been filled in. There are still some data missing, and it is quite likely that the war record will never be made complete, but at least it was in 1947 sufficiently complete for most of the important commodities to enable one to form a fairly accurate picture of the war production record.

Supplementing the world production data presented in connection with the various commodities, Table II gives the available data on mineral production in 1946 for the more important producing countries and their leading commodities. While space is lacking to make a table of this kind complete, enough data can be shown on one page to give the reader an idea as to the general distribution of production and the relative importance of the different producers.

Table I abstracts the opening and closing prices for the leading metals and their ores, as quoted on the New York and London markets during 1947. With only a few exceptions, it will be noted that prices advanced sharply after the relaxation or abandonment of wartime price control measures. In the New York market much of the advance had been accomplished by the end of 1946, but in the London market matters moved more

Table I.—*Mineral and Metal Prices in 1947*

| New York market as reported by *E&MJ Metal and Mineral Markets* | | | | | London market as reported by the *Metal Bulletin* | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Open | Close | Grade | Units | | Grade | Units | Open | | | Close (*d*) | | |
| | | | | | | | £ | s. | d. | £ | s. | d. |
| 15.00 ¢ | 15.00 ¢ | 99% ingot | Pound | Aluminum | 98–99% | Long ton | 72 | 15 | .. | 80 | .. | .. |
| 3.85 | $ 4.425 | 50–55% Sb | S.T. unit | Antimony, Ore | 50–55% Sb | Unit | .. | 19 | .. | .. | 22 | 6 |
| 29.625 ¢ | 36.03 ¢ | Domestic, cased | Pound | Antimony | Domestic, 99% | Long ton | 150 | .. | .. | 180 | .. | .. |
| nom. ¢ | nom. ¢ | Chinese | " | " | Chinese | " | .. | (e) | .. | .. | (e) | .. |
| 6.00 ¢ | 6.00 ¢ | White oxide | " | Arsenic | Foreign, 99% | " | 40 | 7 | 6 | 43 | 5 | .. |
| 4.75 | $ 20.50 | 4% Be (a) | " | Beryllium-copper alloy | Strip (a) | Pound | .. | 13 | 3 | .. | 14 | 7½ |
| 1.80 | $ 2.00 | Ton lots | " | Bismuth | | " | .. | 10 | .. | .. | 11 | .. |
| 1.50 | $ 1.75 | Commercial sticks | " | Cadmium | | " | .. | 10 | .. | .. | 12 | 6 |
| 38.50 | $ 39.00 | 48% $Cr_2O_3$, 3 Cr:1 Fe | Long ton | Chromium, Ore | Rhodesian, 1st grade | Long ton | 10 | .. | .. | 9 | 17 | .. |
| 39 ¢ | 92 ¢ | 98%, spot | Pound | Metal | 98–99% | Pound | .. | 4 | 5 | .. | 5 | .. |
| 17.10 ¢ | 16.10 ¢ | 4–6%, C, 66–70 Cr (a) | " | Ferroalloy | 4–8% C. | Long ton | .. | (e) | .. | .. | (e) | .. |
| 19.50 ¢ | 19.50 ¢ | 2% C, 67–72% Cr (a) | " | Ferroalloy | 2% C. (a) | Pound | .. | (e) | .. | .. | (e) | .. |
| 1.50 | $ 1.65 | 97–99% Co | " | Cobalt | | " | .. | 9 | .. | .. | 10 | .. |
| 19.275 ¢ | 21.20 ¢ | Domestic | " | Copper | Fire ref., high gr. | Long ton | 116 | 10 | .. | 131 | 10 | .. |
| 19.625 ¢ | 21.425 ¢ | Export | " | " | Electrolytic | " | 117 | .. | .. | 132 | .. | .. |
| 35.00 | $ 35.00 | | Ounce | Gold | Official | Ounce | .. | 172 | 3 | .. | 172 | 3 |
| 10.00 | $ 82.50 | Sponge, powder | " | Iridium | | " | 32 | 10 | .. | 19 | 10 | .. |
| 5.05 | $ 5.55 | Mesabi, nonbessemer | Long ton | Iron, Ore | 50% N. African | Long ton | .. | (e) | .. | .. | (e) | .. |
| 60.50 | $195.65 | 80%, Joplin, Mo. | Short ton | Lead, Ore | 80% R/C | " | .. | (e) | .. | .. | (e) | .. |
| 12.55 ¢ | 15.00 ¢ | New York | Pound | Metal | Foreign, soft | " | 70 | .. | .. | 90 | .. | .. |
| 20.50 ¢ | 20.50 ¢ | 99.8% car lots | " | Magnesium, Ingots | | Pound | .. | 1 | 6 | .. | 1 | 2 |
| 27.50 ¢ | 27.50 ¢ | | " | Sticks | | " | .. | 1 | 10 | .. | 1 | 6 |
| 70.50 ¢ | 66.00 ¢ | 48% Atlantic ports | L.T. unit | Manganese, Ore | 50–52% Mn | Unit | .. | 1 | 4½ | .. | 1 | 7 |
| 35.00 | $145.00 | 78–82% | Long ton | Ferroalloy | | Long ton | .. | (e) | .. | .. | (e) | .. |
| 40.00 | $ 47.00 | 19–21% Mn | " | Spiegel | 18–22% Mn | " | .. | (e) | .. | .. | (e) | .. |
| 90.00 | $ 80.00 | (76 lb.) | Flask | Mercury | (76 lb.) | Flask | 22 | 15 | .. | 16 | .. | .. |
| 45 ¢ | 45 ¢ | 90% $MoS_2$ (b) | Pound | Molybdenum, Ore | 85% $MoS_2$ | Unit | .. | 46 | 3 | .. | 50 | 9 |
| 95 ¢ | 95 ¢ | 55–65% Mo (a) | " | Ferroalloy | 70–75% Mo, C free (a) | Pound | .. | (e) | .. | .. | (e) | .. |
| 35 ¢ | 33.75 ¢ | Cathodes | " | Nickel | Refined | Long ton | 192 | 10 | .. | 190 | .. | .. |
| 24.00 | $ 24.00 | | Ounce | Palladium | | Ounce | 5 | 17 | 6 | 5 | 17 | 6 |
| 75.00 | $ 75.00 | 24% P | Long ton | Phosphorus, Ferro- | 20–25% P. | Long ton | .. | (e) | .. | .. | (e) | .. |
| 63.00 | $ 66.00 | Wholesale | Ounce | Platinum | | Ounce | 14 | .. | .. | 16 | 2 | 6 |
| 25.00- | $125.00 | | " | Rhodium | | " | 31 | 5 | .. | 27 | 10 | .. |
| 1.75 | $ 2.00 | 99.5% | Pound | Selenium | | Pound | .. | 8 | 6 | .. | 10 | .. |
| 14.75 ¢ | 16.75 ¢ | 97+% Si, spot | " | Silicon | 97% Si | Long ton | 97 | .. | .. | 108 | 7 | 6 |
| 17.45 ¢ | 8.80 ¢ | 50% Si (a) | " | Ferroalloy | 45% Si | " | .. | (e) | .. | .. | (e) | .. |
| 9.25 ¢ | 11.20 ¢ | 75% Si (a) | " | " | 75% Si | " | .. | (e) | .. | .. | (e) | .. |
| 33.75 ¢ | 74.625 ¢ | Foreign, New York | Ounce | Silver | Official, spot | Ounce | .. | .. | 55½ | .. | .. | 45 |
| 1.75 | $ 1.75 | | Pound | Tellurium | | Pound | .. | 7 | .. | .. | 8 | 9 |
| 70.00 ¢ | 94.00 ¢ | Straits | " | Tin | 99%+ | Long ton | 380 | 10 | .. | 437 | .. | .. |
| 42.50 | $ 1.35(a) | 20–25% Ti | Short ton | Titanium, Ferrocarbon- | 15–18% Ti | Pound | .. | (e) | .. | .. | (e) | .. |
| 24.00 | $ 30.00 | Domestic | S.T. unit | Tungsten, Ore | 65% | Unit | .. | 71 | 3 | .. | 136 | 3 |
| 24.00 | $ 30.00 | Chinese | " | " | | | | | | | | |
| 1.90 | $ 2.30 | 75–80% W (a) | Pound | Ferroalloy | 80–85% W (a) | Pound | .. | (e) | .. | .. | (e) | .. |
| 2.625 | $ 3.10 | 99% W | " | Powder | 98–99% W | " | .. | 6 | 4 | .. | 10 | 10 |
| 27.50 ¢ | 27.50 ¢ | (c) | " | Vanadium, Ore | 18–20% $V_2O_5$ | Unit | .. | 40 | .. | .. | 70 | .. |
| 2.80 | $ 3.00 | (a) | " | Ferroalloy | 35–60% V. (a) | Pound | .. | (e) | .. | .. | (e) | .. |
| 64.00 | $ 70.35 | 60%, Joplin, Mo. | Short ton | Zinc, Ore | 52% R/C | Long ton | .. | (e) | .. | .. | (e) | .. |
| 10.50 ¢ | 10.50 ¢ | St. Louis | Pound | Metal | G.O.B., foreign | " | 70 | .. | .. | 70 | .. | .. |

) Per pound of base metal contained. (b) Per pound of $MoS_2$ contained. (c) Per pound of $V_2O_5$ contained. (d) Dec. 15. (e) Not quoted in *Metal Bulletin*.

## Table II.—*World Mineral and Metal Production in 1946*

(Metric tons unless otherwise specified: Th. indicates thousands and Mi. millions of units.)

| Country | Aluminum (Th.) | Antimony | Asbestos (Th.) | Bauxite (Th.) | Cadmium (Th. Lb.) | Chromite (Th.) | Coal (Mi.) | Coke (Mi.) | Copper in Ore (Th.) | Copper (Smelter) (Th.) | Diamonds (Th. carats) | Gold (Th. Oz.) | Gypsum (Th.) | Ilmenite (Th.) | Iron Ore (Mi.) | Pig Iron (Mi.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Algeria | — | — | — | — | — | — | 0.2 | — | — | — | — | — | 18 | — | 1.67 | — |
| Angola | — | — | — | — | — | — | — | — | — | — | 808 | — | — | — | — | — |
| Australia | — | 172$^{5}$ | 1.8$^{5}$ | 3.5$^{5}$ | 494.1 | 1.4$^{4}$ | 19.6 | 1.08$^{5}$ | P | 19.1 | — | 824 | 109 | 7.3$^{4}$ | 1.59$^{5}$ | 0.89 |
| Belgian Congo | — | — | — | — | 36.5 | — | p | — | P | 143.9 | 6,033 | 331 | — | — | — | p |
| Belgium | — | — | — | — | 196.0 | — | 22.8 | 3.86 | — | — | — | — | — | — | p | 2.17 |
| Bolivia | — | 6,407 | p | — | — | — | — | — | 6.1 | — | — | 3 | — | — | — | — |
| Brazil | 0.3 | — | p | 1 2 | — | — | 1.3 | p | — | — | 325 | 200 | P | 5.0$^{5}$ | 1.0 | 0.37 |
| Burma | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Canada | 175.4 | 286 | 496 8 | — | 761.4 | 2.8 | 16.1 | 2.59 | 168.3 | 151.5 | — | 2,808 | 1,664 | 1.2 | 1.43 | 1.38 |
| Chile | — | — | — | — | — | — | 1.7 | — | — | 358.6 | — | 231 | 34$^{4}$ | — | 1.35 | 0.17$^{5}$ |
| China | p | P | P | — | — | — | P | 0.10 | 0.9 | 0.9 | — | P | P | — | 1.44$^{5}$ | p |
| Colombia | — | — | — | — | — | — | p | — | — | — | — | 437 | — | — | — | — |
| Czechoslovakia | — | P | — | — | — | — | 33.5 | 4.53$^{4}$ | — | — | — | — | — | — | 0.48$^{4}$ | 0.96 |
| France | 47.6 | 14.3$^{5}$ | 0.6 | 478.2 | 103.6 | — | 49.5 | 4.96 | p | 9.7 | — | 34 | 449 | — | 16.21 | 3.50 |
| Germany | — | — | — | p | P | — | 114.1 | 53.40 | 15.0 | 19.1 | — | P | P | — | 13.22$^{2}$ | 2.32 |
| Gold Coast | — | — | — | 116.8 | — | — | — | — | — | — | 830 | 587 | — | — | — | — |
| Greece | — | p | p | p | — | 8.5 | p | — | — | — | — | — | P | — | — | — |
| Guiana, Brit. | — | — | — | 1,138.1 | — | — | — | — | — | — | — | 20 | — | — | — | — |
| Guiana, Neth. | — | — | — | 570.6 | — | — | — | — | — | — | — | 5 | — | — | — | — |
| Hungary | P | P | — | 100.8 | — | — | 6.3 | — | — | — | — | — | — | — | 0.13 | 0.16 |
| India | p | — | 0.6$^{4}$ | 14.1$^{5}$ | — | 31.1$^{5}$ | 29.7 | 1.41$^{4}$ | 11.0$^{5}$ | 6.4 | — | 132 | 92$^{5}$ | 102.4$^{4}$ | 2.30$^{5}$ | 1.35 |
| Indo-China | — | 25$^{4}$ | — | p | — | — | 0.6$^{4}$ | p | — | — | — | p | p | — | p | — |
| Italy | 10.6 | 270$^{5}$ | 4.8$^{5}$ | 65 4 | 55 1 | — | 2.6 | 2.0$^{3}$ | — | — | — | 1.6$^{5}$ | 328$^{1}$ | — | 0.13 | 0 17 |
| Japan | - | 49 | 1.7 | — | 2.0 | 7.1 | 24.8 | 3.76$^{4}$ | 17.2 | 26.9$^{5}$ | — | 36 | 83$^{4}$ | — | 0.54 | 0 19 |
| Luxembourg | — | — | — | — | — | — | — | — | — | — | — | — | P | — | 2.25 | 1.36 |
| Malaya | — | — | — | P | — | — | — | — | — | — | — | p | — | P | p | — |
| Manchuria | — | — | — | — | — | — | P | — | — | — | — | — | — | — | — | — |
| Mexico | — | — | — | — | 1,530.7 |  | 0 9$^{5}$ | — | 61.1 | 52.4 | — | 421 | P | — | 0.28 | 0.28 |
| Morocco, Fr. | — | 260 | 0.5$^{4}$ | — | — | — | 0 2 | — | — | — | — | P | p | — | 0.13 | — |
| Neth. Indies | — | — | — | P | — | — | 2.0$^{0}$ | — | — | — | — | P | — | — | — | — |
| New Caledonia | — | — | — | — | — | 24.9 | — | 0.84$^{2}$ | — | — | — | — | 7 | — | — | — |
| Norway | 16 6 | — | — | — | 61 7 | — | — | — | P | 7.5 | — | — | — | 64.0$^{4}$ | 0.09 | 0.12$^{4}$ |
| Peru | — | 969 | — | — | 3 0 | — | 0 2 | — | 24.6 | 19.7 | — | 158 | 50 | — | — | — |
| Philippines | — | — | — | — | — | 58 | p | — | — | — | — | P | — | — | — | — |
| Poland | — | — | — | — | 255.7 | — | 48.1 | 2 15 | — | — | — | — | P | — | 0.39 | 0.74 |
| Portugal | — | 5 | — | — | — | 1.7$^{5}$ | 0.5 | — | — | — | — | — | p | 0.3$^{5}$ | 0.13 | — |
| Rhodesia, No. | — | — | — | — | — | — | — | — | — | 185.5 | — | 7 | — | — | — | — |
| Rhodesia, So. | — | 16 | 50.7 | — | — | 151 4 | 1 6 | 0.09$^{5}$ | — | — | — | 545 | — | — | — | — |
| Sierra Leone | — | — | — | — | — | p | — | — | — | — | 559 | P | — | — | 0.64 | — |
| South Africa | — | 2,330 | 17 | — | — | 188.9 | 23.6 | 0.18$^{4}$ | 27.0 | 26.7 | 1,282 | 11,918 | 62.5 | — | 0.87$^{5}$ | 0.56 |
| So. West Africa | — | — | — | — | — | — | — | — | — | — | 164 | p | — | — | — | — |
| Spain | 0.6$^{5}$ | 108$^{5}$ | p | 4 9 | — | — | 12 1 | 0 76 | 8.6 | 8.1 | — | 3$^{5}$ | 41$^{5}$ | 0.2$^{5}$ | 2.38 | 0.47 |
| Sweden | 3.2$^{5}$ | — | - | — | — | — | 0 6$^{5}$ | 0.08$^{3}$ | 16.3 | 16.4 | — | 86$^{5}$ | p | — | 3.93$^{5}$ | 0.70 |
| Thailand (Siam) | — | — | - | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Tunisia | — | — | — | — | — | — | p | — | — | — | — | — | P | — | 0.18 | — |
| Turkey | — | 57 | p | — | — | 109.3 | 4.3 | 0.04 | P | 10.1 | — | — | — | — | 0.12 | 0.08 |
| United Kingdom | 32.1 | — | — | 37.0$^{5}$ | P | p | 131.2 | 14.21 | — | — | — | — | 1,715 | — | 12.40 | 7.89 |
| United States | 371.6 | — | 12 8 | 1,090 0 | 8,384 | 3 7 | 543 1 | 53 07 | 552.2 | 592.2 | — | 1,462 | 5,107 | 256.2 | 71.98 | 42.02 |
| U.S.S.R. | 86.3$^{5}$ | 2,091 | — | 400$^{5}$ | P | 325$^{4}$ | 160 | 13 0$^{5}$ | — | 160$^{5}$ | — | 6,000? | P | — | 18.0$^{5}$ | 9.0$^{5}$ |
| Venezuela | — | — | p | — | — | - | p | — | — | — | 21 | 37 | — | — | — | — |
| Yugoslavia | p | P | — | P | — | 65$^{3}$ | 7.3$^{1}$ | — | P | 22.3$^{4}$ | — | — | P | — | P | p |
| World Total | 750 | 24,900 | ? | 4,000 | ? | 1,100 | ? | 117.44 | 1,860 | 1,835 | 10,313 | 27,800 | 10,300 | 461$^{4}$ | 160 | 80 |

| Country | Lead (Smelter) (Th.) | Magnesite, (Th.)* | Manganese Ore (Th.) | Mercury (Th. Lb.) | Nickel (Th.) | Petroleum (Mi. Bbl.) | Phosphate Rock (Th.) | Platinum (Th. Oz.) | Potash (Th.)† | Pyrite (Th.) | Salt (Mi.) | Silver (Mi. Oz.) | Talc (Th.) | Tin, in Ore (Th.) | Tin (Th.) | Tungsten Conc.‡ (Th.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Algeria | — | — | — | 25 8 | — | — | 584 8 | — | — | 40.4 | 0 05$^{5}$ | p | — | — | — | — |
| Angola | — | — | - | — | — | - | — | — | — | — | — | — | — | — | — | — |
| Australia | 153.6 | 25.5 | 2 2$^{4}$ |  |  | - | 93$^{5}$ | 0.1 | p | 130 | 0 16 | 9.07 | 6.1$^{4}$ | 2.2 | 2.0 | 1.0 |
| Belgian Congo | — | — | p | — | — | — | — | p | — | — | — | 5.05 | — | 14.3 | 2.4 | 0.4 |
| Belgium | 23.8 | — | — | — | — | — | 18.0$^{5}$ | — | — | — | — | — | — | — | — | — |
| Bolivia | — | — | — | — | — | 0.36 | — | — | — | — | — | 6.11 | — | 38.2 | — | 2.1 |
| Brazil | — | — | 149 1 | — | p | p | 5.2$^{4}$ | — | — | — | 0 45$^{4}$ | 0.03 | — | p | — | 1.6 |
| Burma | — | — | — | — | p | 0.7 | — | — | — | - | 0 06 | P | — | P | — | P |
| Canada | 150.4 | — |  |  | 86.0 | 7.67 | p | 244.6 | — | P | 0 48 | 12.68 | 29.2 | — | — | — |
| Chile | — | — | 15.7 | 65.5$^{5}$ | — | — | 13.2$^{5}$ | — | p | — | 0.05$^{5}$ | 0.53 | 0.5$^{5}$ | — | — | p |
| China | p | — | 9.6 | 130.0 | — | 0 51 | — | — | — | — | 2.27 | P | 80$^{2}$ | 3.5$^{5}$ | 2.0 | 2.7 |
| Colombia | — | — | — | — | — | 22.12 | — | 43.8 | — | — | 0.12 | — | — | — | — | — |
| Czechoslovakia | — | P | - | 196.2$^{0}$ | — | 0.16 | — | — | — | — | p | P | — | — | — | — |
| France | 34 7 | — | — | — | — | 0.37 | 88.9 | — | 510 | 187.2 | 1.6 | 0 30 | 66.5 | — | — | p |
| Germany | 140$^{4}$ | 25.4$^{2}$ | p | 37.5$^{2}$ | p | 4.5 | p | — | 1,925.5$^{4}$ | P | 4.0$^{4}$ | P | 13.5$^{2}$ | — | — | — |
| Gold Coast | — | — | 721 4 | — | — | — | — | — | — | — | — | 0 05 | — | — | — | — |
| Greece | 0.6 | 4.5 | p | — | p | — |  | — |  | 80.1 | 0 11 | - | — | — | — | — |
| Guiana, Brit. | — | — | — | — | — | — |  | — |  | — | — | — | — | — | — | — |
| Guiana, Neth. | — | — | — | — | — | — |  | — |  | — | — | — | - | — | — | — |
| Hungary | — | — | 16.9 | — | — | 5.15 | — | — | — | — | 0.34$^{3}$ | — | — | — | — | — |
| India | — | 42.6$^{4}$ | 213 6$^{5}$ | — | — | 2.19 | 0 5$^{5}$ | — | — | — | 2.23$^{5}$ | p | 22.7$^{5}$ | — | — | p |
| Indo-China | p | — |  | — | — | — | 7.1$^{4}$ | — | p | — | 0.19$^{1}$ | p | 0.5$^{5}$ | p | — | p |
| Italy | 14.0 | 13.7$^{2}$ | 15.4$^{5}$ | 3,747.9 | p | 0.07 | p | p | — | 397 3 | 1.48$^{1}$ | p | 46.3$^{5}$ | 0.1 | — | p |
| Japan | 12.6$^{5}$ | — | 29.4 | 108.0 | 0.7$^{5}$ | 1.34 | 2.0$^{5}$ | p | — | 474.8 | 0 19$^{5}$ | 1.07 | 0.2 | 1.8 | p | 0.1 |
| Luxembourg | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Malaya | — | — | p | — | — | — | — | — | — | — | — | — | — | 7.4 | 7.6 | p |
| Manchuria | — | - | - | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mexico | 137.7 | — | 25.0 | 886.2 | — | 49.24 | — | — | — | — | - | 43 26 | — | 0.3 | — | 0.1 |
| Morocco, Fr. | — | — | 45.3$^{5}$ | — | — | — | 2,783.6 | — | — | — | 0 01 | p | — | — | — | p |
| Neth. Indies | — | — | p | — | P | 2.1 | 24$^{4}$ | p | — | — | 0.39$^{0}$ | — | — | 8.9 | 0.5 | p |
| New Caledonia | — | — | — | — | 2.8 | — | — | — | — | — | — | — | — | — | — | — |
| Norway | p | p | — | — | p | — | — | — | — | 537.9 | — | 0.13$^{5}$ | 30.5$^{3}$ | — | - | p |
| Peru | 36.5 | — |  | p | — | 12 46 | — | — | — | — | 0.5 | 12.33 | — | p | — | 0.5 |
| Philippines | — | — | P | — | — | — | - | — | — | — | p | p | — | — | — | — |
| Poland | 9.0 | — | — | — | — | 0.86 | — | — | — | P | P | — | — | — | — | — |
| Portugal | — | — | 5 9 | — | — | — | — | — | — | 315 0 | — | — | — | 0.5 | 0.1 | 0.6 |
| Rhodesia, No. | 8.[illegible] | — | 1 4 | — | — | — | — | — | — | — | — | p | — | p | — | — |
| Rhodesia, So. | — | — | — | p | p | — | — | — | — | 25 4 | — | 0.10 | — | 0.1 | — | 0.1 |
| Sierra Leone | — | — | — | — | — | — | — | p | — | — | — | — | — | — | — | — |
| South Africa | p | 7.1$^{5}$ | 206.3 | 68 | 0.5 | — | 21.1$^{4}$ | 75.1 | — | 38.0 | P | 1.20 | 2.6 | 0.5 | 0.9 | 0.7 |
| So. West Africa | p | — | — | — | — | — | 1.7 | — | — | — | 0 01 | — | — | 0.2 | — | — |
| Spain | 32.3 | 6.7$^{5}$ | 24 9$^{5}$ | 3 116 | — | — | 18 6 | — | 100.3 | 792.6 | 0.77 | 0.70 | 19.3$^{5}$ | 1.4 | — | 0.4 |
| Sweden | 8.6 | — | 18.0 | — | 0 4$^{5}$ | — | 160.8$^{4}$ | — | — | 262.0$^{5}$ | — | 1.14$^{5}$ | 7.8$^{5}$ | — | — | 0.4$^{5}$ |
| Thailand (Siam) | — | — | — | — | — | — | — | — | — | — | 0 11$^{0}$ | — | — | — | — | P |
| Tunisia | 7.5 | — | p | p | — | — | 1,399.9 | — | — | 2.3 | 0.06$^{5}$ | p | — | — | — | — |
| Turkey | — | 0.8$^{4}$ | 1.8 | — | — | — | — | — | — | 0.3 | 0.23 | — | — | — | — | — |
| United Kingdom | 2.7 | — | 11.5$^{5}$ | — | — | 0.41 | — | — | — | 10 9 | 3 29$^{5}$ | p | 2.8$^{4}$ | 0.8 | 29.0 | 0.1$^{5}$ |
| United States | 306.7 | 294.5 | 130.3 | 1,926.4 | 0.3 | 1,733.42 | 6,970.8 | 26.5 | 845.3 | 826.4 | 13.73 | 21.10 | 414.6 | — | 44.2 | 4.7 |
| U.S.S.R. | 110$^{4}$ | P | 2,251.$^{5}$ | p | 13.4$^{5}$ | 164 | 2,000$^{1}$ | P | — | P | — | — | — | — | — | — |
| Venezuela | — |  | — | — |  | 388.49 | — | — | — | — | 0 09 | — | — | — | — | — |
| Yugoslavia | P | P | p | — | — | — | — | — | — | P | p | — | — | — | — | — |
| World Total | 1,166 | ? . | 3,861.$^{5}$ | 10,564. | 127. | 2,750 | 11,885 | 576. | 2,240 | 7,000 | 35 5 | 129 | 770 | 90. | 93.5 | 19 |

Notes Each item of data previous to 1946 is followed by a reference superscript indicating the year to which the figure belongs – $^{5}$ for 1945. $^{4}$ for 1944, and so on for the earlier years. A figure with less decimals than o in the column is an estimate. The letter "p" indicates a small production unknown in amount or less than the minimum base of the table; "P" indicates a larger but unknown production.

*Crude magnesite. †$K_2O$ equivalent of salts produced. ‡60% $WO_3$ basis.

Table III.—*Value of Mineral Products of the United States*

(Millions of dollars)

| Year | Metallics | Fuels | Nonmetallics | Total |
|---|---|---|---|---|
| 3 | 892.6 | 2,820.3 | 650.3 | 4,363.2 |
| 9 | 1,291.7 | 2,834.3 | 788.2 | 4,914.2 |
| 0 | 1,678.6 | 3,116.5 | 812.8 | 5,613.9 |
| 1 | 2,132.0 | 3,708.1 | 1,037.9 | 6,878.0 |
| 2 | 2,363.9 | 4,103.4 | 1,109.0 | 7,576.3 |
| 3 | 2,488.0 | 4,608.3 | 974.7 | 8,071.0 |
| 4 | 2,340.0 | 5,178.0 | 901.0 | 8,419.0 |
| 5 | 1,974.0 | 5,212.0 | 954.0 | 8,140.0 |
| 5 | 1,823.0 | 5,725.0 | 1,311.0 | .8,859.0 |
| 7 (est.) | 3,000.0 | 7,800.0 | 1,600.0 | 12,400.0 |

wly, as price controls were relaxed more gradually.

he *E. & M. J. Metal and Mineral Markets* weighted index nonferrous metal prices, which had previously stood at 96.42, nped to 117.11 in July 1946 with the expiration of the price trol bill, but was forced back to 114.25 in October by temary renewal of control measures. With the final scrapping of ce control in November it rose to 131.23 in November and .19 in December. After declining to 140.42 in Feb. 1947 aner advance followed, to 154.03 in May. After another dee to 148.73 in July, a fourth advance brought the year-end ex to approximately 152—a total increase of more than onef since midyear of 1946, 80% of which was crowded into the half of 1946, against 20% in 1947.

Table III shows the trend of the total dollar value of mineral duction in the United States, as reported by the U.S. bureau mines. Largely because of strikes, the 1946 value of metallics lined, but not enough to offset the increase in nonmetallics, alone the even greater increase in fuels. All told, the value mineral production increased to a new record high, 9% above 1945 level, and 5% above the former 1944 record, though metallics value was the lowest since 1940. The preliminary imate for 1947, which was due partly to increased outputs d partly to the inflated postwar prices, shows advances which surpassed anything in the previous production record of the S. Nonmetallics rose 22% over 1946 and 44% over the 1942 h; fuels were 36% ahead of 1946, which was also the previs record high; metallics soared to 64% above 1946 and 20% ove the 1943 record; while the total value advanced 40% er 1946 (the previous record year) and 47% over the war ak of 1944. (*See* also Strategic Mineral Supplies and the views of the various metals and minerals.) (G. A. Ro.)

**ineralogy.** New minerals described during 1947 included nigerite, a brown and weakly magnetic mineral ntaining tin and aluminum as the essential constituents, disvered in the tin-bearing pegmatites of Kabba province in cenl Nigeria (R. Jacobson and J. S. Webb, *Mineralogical Magae*, vol. XXVIII, pp. 118–128, and F. A. Bannister, M. H. ey, H. P. Stadler, *Ibid.*, pp. 129–136); and (2) groutite, a jet ck manganese mineral with the chemical composition $HMnO_2$, curring in the Cuyuna range in Minnesota and associated with n minerals (J. W. Gruner, *American Mineralogist*, vol. 32, 654–659).

In her article "Single Crystal Diamonds Are of Two Types" *ems and Gemology*, vol. V, pp. 455–461), Kathleen Lonsdale London showed that by X-ray diffraction patterns, diamond stals may be classified as (1) perfect and (2) mosaic single stals. Perfect single crystals possess a definite and continuous angement and spacing of the atoms which make up the crys, while mosaic crystals consist of many extremely small pert crystals. Studies on the fluorescence and phosphorescence the diamond on exposure to ultra-violet radiation were made George Switzer in "Fluorescent Diamonds" (*Ibid.*, vol. V, 392, 393, 398); by R. M. Shipley in "Notes on the Abunnce and Colour of Fluorescent Diamonds" (*Ibid.*, vol. V, pp. 5–398); and by G. O. Wild and H. Biegel in "The Fluorescence of Diamonds" (*Gemologist*, London, vol. XVI, pp. 228–229). Shipley estimated that approximately 65% of gem quality diamonds fluoresce strongly enough to be noticeable to the naked eye when exposed to an arc light and viewed with a Woods filter.

The great increase in the use of the diamond for industrial purposes led to the establishment of the Diamond Research laboratory of Industrial Distributors, Inc., at Johannesburg, South Africa. The laboratory was well staffed in 1947 to conduct extensive studies on the various properties of the diamond which should be of inestimable value to the industry.

On Sept. 23, 1947, the Linde Air Products company announced the first successful production of synthetic star rubies and star sapphires of good gem quality. The chief characteristics of these new synthetic gems were described by R. J. Holmes in *Gems and Gemology*, vol. V, pp. 452–454, 478. Limited numbers of these synthetic star gems were to be marketed.

Identification of natural and culture pearls by X-ray diffraction methods was discussed in an extensive article by W. H. Barnes (*Gems and Gemology*, vol. V, pp. 387–391, 428, 429, 440–444, and 471–474) and by A. E. Alexander in "Pearls Are Not What They Seem" (*Journal of Gemology*, vol. 1, pp. 2–5). In "The Present Status of the Japanese Pearl Culture Industry" (*Gems and Gemology*, vol. V, pp. 417–420) W. F. Foshag reviewed methods of culture, harvesting, production, and marketing of culture pearls. The industry was almost completely suspended during World War II, but was operating at about 30% capacity in 1947.

During the year, the fourth edition of B. W. Anderson's *Gem Testing* (London) and the fifth enlarged edition of E. H. Kraus and C. B. Slawson's *Gems and Gem Materials* (New York) were issued. The very useful and well-illustrated *Handbook of Gem Identification*, by R. T. Liddicoat of the Gemological Institute of America (Los Angeles) was also published.

At the meeting of the Mineralogical Society of America held in Ottawa, Canada, Dec. 30, 1947, the Washington A. Roebling medal was awarded to Professor Paul Niggli of Zürich, Switzerland, in recognition of his many significant contributions to mineralogy and petrography. (*See* also Mineral and Metal Production and Prices.) (E. H. Kr.)

**Mining:** *see* Mineral and Metal Production and Prices. *See* also under separate minerals.

**Minnesota.** A north central state of the United States, popularly known as the "Gopher state." Area, 84,068 sq.mi., of which 4,059 are water. Pop. (1940), 2,792,300. The urban population was 49.8% of the total. Capital, St. Paul (287,736). Other principal cities, Minneapolis (492,370); Duluth (101,065). The native-born white inhabitants in 1940 numbered 2,474,078, foreign-born 294,904 and Negro 9,928. The bureau of the census estimated the civilian population of the state at 2,597,580 on July 1, 1944; 2,617,538 on July 1, 1945; and 2,817,972 on July 1, 1946.

**History.**—Principal elective officials of the state in 1947 were: governor, Luther W. Youngdahl; secretary of state, Mike Holm; treasurer, Julius A. Schmahl; auditor, Stafford King; attorney general, J. A. A. Burnquist.

The 55th session of the legislature met in regular biennial session on Jan. 7, 1947, and adjourned on April 24, 1947. The 1947 legislature, by resolution, created a constitution commission of Minnesota, effective July 1, 1947, with an appropriation of $12,000, to study and consider Minnesota's constitution and report to the legislature, the governor and the supreme court by Oct. 1, 1948. The legislature established by law a Minnesota legislative research committee, with an appropriation of $25,000 for the biennium. It also created three new divisions of state government: youth conservation commission; division of housing and rent control; and department of business research and development.

**Education.**—The contribution of the state to local schools, including income from trust funds and fixed income tax allotments, was expected to amount to $66,705,660 for the biennium that began July 1, 1947. Total public school expenditures for the 1946–47 school year were $79,358,035, compared with $67,433,573 for the 1945–46 school year. In 1946–47, Minnesota had 8,124 elementary schools, 645 secondary schools, 6 public state teachers colleges and 11 junior colleges. Enrolment was 328,508, with 11,865 teachers in elementary grades; 164,605, with 7,994 teachers, in the secondary grades; 3,755, with 180 teachers, in junior colleges; 12,665, with 155 teachers, in adult education classes; and 306, with 25 teachers, in teacher training departments. Dean M. Schweickhard was commissioner of education.

**Social Insurance and Assistance, Public Welfare and Related Programs.**—The aid to dependent children average grant per case rose 24.3% from Nov. 1946 to Nov. 1947, while old-age assistance and aid to the blind average grants per recipient rose 20.2% and 16.7%, respectively, during the same period. During the year ending June 30, 1947, $2,559,292 was spent on general relief, with the number of cases averaging 5,832; on old-age assistance, $23,128,837, with the number of recipients averaging 54,082. A total of $3,643,749 was spent on aid to dependent children, with the number of families aided averaging 5,492 and number of children helped averaging 14,043. An average of 952 persons shared in the total allowance of $485,490 in aid to the blind. The state prison, two state reformatories and two training schools for delinquents had 2,101 inmates on June 30, 1947.

**Communications.**—Minnesota had, at the end of 1946, 11,237 mi. of state trunk highways and 102,004 mi. of other highways, excluding city streets. Expenditures of the state highway department for construction, maintenance and administration during the year ended June 30, 1947, were $25,123,768, as compared with $14,794,000 for the year ended June 30, 1946. The state highway building program, with federal aid, was expected to make possible about $75,000,000 in construction in the first four postwar years. Railway mileage at the end of 1946 was 9,080 mi. There were 60 licensed municipal airports, 16 seaplane bases, 44 privately owned public airports and 119 privately owned landing strips for private use.

**Banking and Finance.**—Resources of Minnesota banks, on July 1, 1947, were approximately 6% lower than on July 1, 1946. The 495 state banks, 1 mutual savings bank and 4 trust companies had deposits of $887,298,000 and resources of $942,106,000, compared with deposits of $846,012,000 and resources of $898,844,000 on July 1, 1946. The 180 national banks had deposits of $1,844,515,000 and resources of $1,856,354,000 on July 1, 1947, compared with deposits of $1,960,700,000 and resources of $2,083,326,000 on July 1, 1946. The state had 41 state building and loan associations on July 1, 1947, with resources of $69,445,000, as compared with resources of $62,014,000 on July 1, 1946. The 30 federal savings and loan associations had resources of $175,943,000 on July 1, 1947, compared with resources of $152,767,000 on July 1, 1946. Total operating disbursements of the state government (excluding public debt redemption, stores for resale, annuities and pensions, land and interest in land) amounted to $140,738,007 for the year ended June 30, 1947, as compared with $116,901,122 for the year ended June 30, 1946. Outstanding state bonds and certificates of indebtedness were reduced $5,880,500 during 1947, to a net of $58,057,443, making a $71,730,217 reduction in nine years. Four principal trust funds of the state, income of which is devoted largely to schools, reached $160,561,621 on Dec. 31, 1947.

**Agriculture.**—Based on volume of production in 1947, Minnesota ranked first among the states in flaxseed; second in oats, alsike clover seed, and sweet clover seed; fourth in corn, spring wheat, barley, rye, all hay, and timothy seed; fifth in soybeans for beans; seventh in red clover seed; eighth in potatoes; and ninth in alfalfa seed. Butter production in 1946 was 175,891,000 lb. For the calendar year 1946, cash receipts from farm marketings totalled $1,054,876,000 with $811,281,000 from livestock and livestock products and $243,595,000 from crops.

*Leading Agricultural Products of Minnesota, 1947 and 1946*

| Crop | 1947 | 1946 |
|---|---|---|
| Corn, all, bu. | 191,041,000 | 239,888,000 |
| Oats, bu. | 163,332,000 | 197,506,000 |
| Barley, bu. | 25,838,000 | 21,257,000 |
| Wheat, all, bu. | 20,633,000 | 27,080,000 |
| Potatoes, bu. | 14,520,000 | 17,365,000 |
| Flaxseed, bu. | 15,103,000 | 9,303,000 |
| Hay, all, tons | 5,687,000 | 5,897,000 |

**Manufacturing.**—The 1939 census of manufacturers listed 4,008 manufacturing establishments employing 92,084 persons. The department of business research and development estimated there were 5,900 manufacturing establishments in 1947. The number of employees in manufacturing industries in Nov. 1947 was estimated at 199,858, 0.2% lower than in Nov. 1946.

**Mineral Production.**—An estimated 63,250,000 gross tons of iron ore were shipped from Minnesota mines in 1947, as compared with 50,010,067 gross tons in 1946. Tonnage shipped in 1947 was the largest for any peacetime year.

(R. B. J.)

## Minnesota, University of.

An institution of higher education at Minneapolis, Minn. At the outset of the fall quarter of 1947, enrolment of regular
collegiate students showed a tendency to level off. Vetera
rolled for the term numbered 16,736. The Duluth branc
of the state teachers' colleges, became a part of the univ
on July 1, 1947. The percentage of women continued to
reaching a new low of 24.9. A new school of veterinary
cine, operating within the College of Agriculture, Forestr
Home Economics (one of the four major units in the d
ment of agriculture) opened in the fall of 1947 with Dr. W
L. Boyd as director. During the year all of the work o
Minneapolis campus in fine arts, including the university g
but excluding art education in the College of Education
consolidated into a new department of fine arts. Dr. S. C.
dean of the Institute of Technology, retired on June 30,
During the year the head of the summer session was m
dean. After the fall of 1946, students in the state teachers
leges, the junior colleges and the liberal arts colleges of M
sota were permitted, if they met admission requirement
register jointly at the university. (For statistics of endow
enrolment, faculty, library volumes, etc., *see* UNIVERSITIES
COLLEGES.)

(J. L. M

**Minor League Baseball:** *see* BASEBALL.
**Mint, United States:** *see* COINAGE.
**Miquelon:** *see* FRENCH OVERSEAS TERRITORIES.

## Missions, Foreign.

For foreign missions the year
was in general one of advance.
toration of staffs depleted by World War II continued. I
missionaries, both Catholic and Protestant, re-entered J
and the regions from which they had been expelled by
Japanese invasion—Korea, east China, the Philippines,
and Burma. Indonesia was still disturbed politically, but
churches had strong Indonesian leadership, much of it yo
In the Netherlands many missionary candidates were prepa
chiefly for Indonesia. Germany had more aspirants for mis
ary service than could be sent. Many lands under governm
with which Germany had been at war were still closed to
sionaries of German citizenship. For both Catholic and Pro
tant missions the United States was increasingly the main re
voir for funds. From it came also more and more of
personnel.

In Protestant circles the most outstanding event of the
was the meeting in July of the International Missionary cou
at Whitby, Ont. The International Missionary council was
agency through which the majority of Protestant missions
operated for world-wide planning and action. In the Wh
meeting, the unity of spirit of older and younger churches (th
of the occident and the nonoccident) was marked. A w
Christian community which knew no distinctions of race
obviously emerging. At Whitby stress was laid upon evangel
—the presentation of the Christian faith to all men.

Some political and social movements were working advers
to Christianity. The intensification of Arab self-consciousn
brought difficulty to Christian missions, for Islam was identi
with Arab culture. Anti-Christian nationalist attitudes w
especially acute in Egypt. In Ceylon the growth of national
was accompanied by emphasis upon Buddhism as the co
munity faith and by restrictions on the churches and missio
Madagascar saw a wave of antiforeignism which at one st
wished to kill or expel all white men and which was, accordin
in part antimissionary. The civil war and mounting inflation
China were serious problems, and in the spreading commun
areas missions found operations impeded or impossible.
India, however, the emergence of the two dominions of In
and Pakistan and the communal disturbances between Hin
and Moslems and Moslems and Sikhs seemed for the moment

k in favour of Christian missions. There must be noted, too, consummation of the Church of South India, a union of licans, Methodists, Presbyterians and Congregationalists.

(K. S. L.)

**ssissippi.** A southern state of the U.S., admitted to the union in 1817, popularly known as the "Mag- a state"; area, 47,716 sq.mi. (47,420 sq.mi. land and 296 ni. water); pop. (1940), 2,183,796; capital, Jackson (62,- ). Other cities: Biloxi (17,475); Greenville (20,892); Gulf- t (15,195); Hattiesburg (21,026); Laurel (20,598); Merid- (35,481); Natchez (15,296); Vicksburg (24,460). Of the e's population in 1940, 432,882, or 19.8%, were urban. In o there were 1,106,327 whites; 1,074,578 Negroes; 2,177,324 ive-born; 6,472 foreign-born. On July 1, 1944, the bureau he census estimated the civilian population of the state at 75,877.

**History.**—For 1948–52 the elected officers of the state, sen in the Democratic primaries in Aug. 1947 and in the eral election of that year, were: governor, Fielding L. ight; lieutenant governor, Sam Lumpkin; secretary of state, er A. Ladner; attorney general, Greek L. Rice; state tax ector, Mrs. Thomas L. Bailey; state treasurer, Robert W. y; state auditor, Carl N. Craig; state superintendent of pub- education, J. M. Tubb; state commissioner of agriculture, E. Corley; state land commissioner, Walter L. McGahey; e commissioner of insurance, Jesse L. White; clerk of reme court, Tom Q. Ellis.

**ducation.**—In 1946–47 there were 1,313 white elementary schools in sissippi and 3,345 Negro elementary schools, a total of 4,658. The olment in elementary schools was 470,012, of whom 217,056 were tes and 252,956 Negroes. The state had 556 white high schools and Negro approved high schools, with a total enrolment of 76,840 in 6–47. There were 9,128 white elementary and high school teachers luding superintendents and principals) and 6,426 Negro elementary high school teachers (including superintendents and principals), a l of 15,554 teachers. The total enrolment in white elementary and schools was 277,447; in Negro elementary and high schools, 269,405.

**ocial Insurance and Assistance, Public Welfare and Related Programs.**—m July 1, 1946, to June 30, 1947, the state department of public fare paid $7,123,884 to 43,938 recipients of old-age assistance; $527,- to 2,213 recipients of aid to the blind; and $1,401,921 for aid to 6 families for 16,895 dependent children. The department continued regular program of child welfare services on all types of problems cting children, particularly those children in rural areas. Special child fare workers were assigned to 11 county departments of public wel- , to the State Industrial and Training school and to the Negro Juve- reformatory. A state-county program of foster boarding care for dren was inaugurated. The department of public welfare continued its vice to the Mississippi state parole board in making preparole investi- ions and in supervising parolees and persons out on suspended sentence. Through its division for the blind, the department maintained a state- nced program of sight conservation, restoration and services and con- ued its program of training adult blind persons to work on factory-type ing machines. This division continued to serve as the channel for fed- funds for vocational rehabilitation of blind civilians.

**Communications.**—In 1947 the state maintained 6,742.6 mi. of high- ys. In 1947 the counties maintained approximately 53,983 mi.

n 1947 state maintenance expenditures were estimated at $3,082,- .43; in 1946, $2,156,904.64. In 1946 county expenditures for main- ance costs amounted to $10,156,908.27.

The total mileage of railroads in the state on Dec. 31, 1947, was 24.02 mi.

**anking and Finance.**—On Oct. 6, 1947, there were 181 state banks in ssissippi, with 22 branch banks and 32 branch offices. There were 25 ional banks in Mississippi. The resources of the state banks were 73,351,099.77 and the total deposits were $538,066,451.16; the re- rces of the national banks were $224,783,638.24 and total deposits e $212,643,311.86.

The balance in the general fund account as of Jan. 1, 1946, was ,156,889.38; on Dec. 31, 1947, it was $27,199,678.84. The special d account as of Jan. 1, 1946, was $8,131,891.17; on Dec. 31, 1947, was $21,097,415.07.

On Dec. 31, 1947, the full faith and credit debt of the state of Missis- i was $15,326,000; outstanding highway bonds amounted to (payable n the gasoline tax) $56,478,000, making a total state debt of $71,- ,000.

**griculture.**—The 1945 census reported 265,528 farms, with 19,616,533 in farms. In 1946, cropland harvested was 6,022,000 ac. The 1946 eipts from marketings were $303,576,000, of which $207,934,000 were n crops and $95,642,000 from livestock and livestock products; the ue of farm products consumed in farm households was $109,018,000.

**Manufacturing.**—The value of all manufactured products in Mississippi the year 1945 was $439,000,000.

Table I.—*Leading Agricultural Products of Mississippi, 1946 and 1945*

| Crop | 1946 | 1945 |
|---|---|---|
| Cotton (500-lb. bales) | 1,040,000 | 1,560,000 |
| Cottonseed, tons | 432,000 | 640,000 |
| Corn, bu. | 36,465,000 | 48,580,000 |
| Oats, bu. | 11,160,000 | 14,880,000 |
| Hay, tons | 1,182,000 | 1,139,000 |
| Sweet potatoes, bu. | 5,152,000 | 5,916,000 |
| Sugar-cane syrup, gal. | 3,500,000 | 3,520,000 |
| Sorghum syrup, gal. | 1,400,000 | 1,680,000 |
| Peanuts, lb. | 7,700,000 | 9,100,000 |
| Pecans, lb. | 4,050,000 | 6,500,000 |

The amount of wages paid in 1945 to persons employed in all industries employing eight or more persons amounted to $237,000,000 as against the amount of $234,000,000 for 1944, and $94,000,000 in 1939.

**Mineral Production.**—The total value of mineral production in 1945, including natural gas, sand and gravel and other mineral products, was $20,982,489.30, and in 1946, $32,709,705.80.

Table II.—*Principal Mineral Products of Mississippi, 1946 and 1945*

| Mineral | Value, 1946 | Value, 1945 |
|---|---|---|
| Natural gas | $ 157,384 | $ 355,298 |
| Sand and gravel | 1,926,923 | 1,143,331 |
| Petroleum | 30,323,206 | 19,290,062 |
| Other mineral products | 302,191 | 193,797 |

On Dec. 31, 1947, there were approximately 1,073 producing oil wells in the state.

(A. B. Bu.)

**Missouri.** A west north central state of the U.S.A., admitted to the union in 1821; popularly known as the "Show Me" state. Area 69,674 sq.mi. of which 404 are water. Pop. (1940) 3,784,664 (51.8% urban, 48.2% rural); 3,425,062 (90.5%) native white, 114,125 (3%) foreign-born white and 244,386 (6.5%) Negro. The bureau of the census estimated that on July 1, 1946, the population of the state was 3,776,250. Capital, Jefferson City (1940 census) (24,268). Largest cities: St. Louis (816,048), Kansas City (399,178), St. Joseph (75,711), Springfield (61,238).

**History.**—The 64th general assembly (Jan. 8–May 23, 1947), with Republicans in control of both houses, passed important legislation. An act relating to labour disputes forbids any employee of the U.S. or of the state from calling, supporting, or participating in any strike against his employer. It bars any employee from engaging in or inducing any strike not authorized by a majority vote in a collective bargaining unit at an election supervised by the state. It prohibits jurisdictional and sympathy strikes, as well as secondary boycotts. It also provides that any collective bargaining agreement between an employer and a labour organization shall be enforceable in the courts. An act relating to labour disputes in public utilities authorizes the governor to take possession of any public utility in case a strike, work stoppage or lockout would result in the failure to continue the operation of the utility so as to interfere with the public interest, health and welfare. A law concerning schools provides that in all public and private schools (except privately operated trade schools), and in all state-supported colleges and universities, regular courses of instruction are to be given in the constitution of the United States and of the state of Missouri, and in U.S. history. It also provides that no student in such educational institutions be given a certificate of graduation unless he has passed a satisfactory examination in these subjects. A motor vehicle act provides for staggered registration of motor vehicles and permanent retention of licence plates by the owners. The assembly, by joint resolution, ratified the proposed amendment to the U.S. constitution limiting the president's tenure of office.

In 1947 investigations were made into vote frauds in the Aug. 6, 1946, Kansas City primary. A Jackson county grand jury indicted 71 persons on May 27. That night thieves stole ballots and other evidence the jury had impounded in a courthouse vault. Thereafter two federal grand juries, investigating the vote frauds and the theft of ballots, indicted 41 persons for vote frauds; and of the seven tried in 1947, three were convicted and one pleaded guilty. No one was indicted for the theft of ballots.

The major state officers (1947), all Democrats, were: Governor, Phil M. Donnelly; lieutenant governor, Walter N. Davis; secretaries of state, Wilson Bell (died May 20) and Edgar C. Nelson (appointed May 23); auditor, Forrest Smith; treasurer, Robert W. Winn; attorney general, James E. Taylor.

**Education.**—For the school year ending June 30, 1947, the public school system consisted of 7,631 elementary schools, with 316,877 pupils and 16,899 teachers; 852 secondary schools, with 152,294 pupils and 6,297 teachers; three state colleges and three state teachers' colleges, with 11,031 students and 469 teachers; Lincoln university (Negro), University of Missouri, (Rolla) School of Mines and Metallurgy, schools for the deaf and blind and a Negro vocational school. Hubert Wheeler was state commissioner of education.

Under the G.I. Bill of Rights and the Vocational Rehabilitation act for disabled veterans, 69,808 veterans of World War II were enrolled in schools and colleges and 21,855 were receiving job training in Missouri on Dec. 31, 1947.

**Social Insurance and Assistance, Public Welfare and Related Programs.**—For the year ending June 30, 1947, unemployment insurance totalled $18,320,205, and the government employment services made 107,063 placements. For the same period old-age assistance amounted to $43,931,653, aid to dependent children $7,262,505, general relief $3,672,440 and blind pensions $1,053,281; the monthly average number of persons receiving old-age assistance was 109,752, aid to dependent children 45,582, general relief 27,060, blind pensions 2,865. During the year ending June 30, 1946, the state penitentiary had an average of 2,540 inmates per day; the reformatory and industrial schools, 960. In the same period expenditures for the penal and correctional institutions amounted to $2,034,822.

**Communications.**—On Dec. 31, 1946, Missouri had 16,471 mi. of state highways and 100,504 mi. of rural roads. During 1946 the state highway department spent $29,504,187 (state and federal funds), of which $9,093,515 was for construction and $8,140,047 was for maintenance. On Dec. 31, 1944, railroad mileage totalled 6,882 mi. There were 965,547 telephones in use on Dec. 1, 1947.

**Banking and Finance.**—On June 30, 1947, Missouri had 484 state banks, with deposits of $1,988,613,000 and resources (loans and investments) of $1,857,100,000; 80 national banks, with deposits of $1,141,562,000 and resources (loans and investments) of $1,140,969,000; 163 building and loan associations, with resources of $217,085,648.

During the fiscal year ending June 30, 1947, the receipts of the state treasury totalled $173,238,984; disbursements $157,870,646. The state debt on July 1, 1946, was $59,000,000 and on June 30, 1947, $53,000,000.

**Agriculture.**—During 1946 cash income from crops and livestock was $867,163,000, and cash income from government payments was $26,083,000. The value of Missouri's 1946 crops was $526,094,000, and the value of the 1947 crops, harvested from 12,534,300 ac., was estimated at $526,302,000. The 1947 production of corn, oats, soybeans and potatoes was from one-third to one-half less than in 1946, principally because of a wet spring, floods in the late spring and early summer (inundating 1,409,000 ac.), and summer drought.

Table I.—*Leading Agricultural Products of Missouri, 1947 and 1946*

| Crop | 1947 (est.) | 1946 | Value, 1947 |
|---|---|---|---|
| Corn, bu | 98,441,000 | 163,355,000 | $241,180,000 |
| All hay, tons | 4,392,000 | 4,214,000 | 70,272,000 |
| Winter wheat, bu | 24,438,000 | 18,195,000 | 57,429,000 |
| Cotton, bales | 320,000 | 307,000 | 49,600,000 |
| Oats, bu | 30,107,000 | 57,133,000 | 30,107,000 |

**Manufacturing.**—The number of persons employed in the manufacturing industries in Sept. 1947 was 356,800, an increase of 7½% over Aug. 1946, but 17% less than the wartime peak of 430,500 in July 1943. In 1939 Missouri's industries manufactured products valued at $1,388,056,267, employed 178,538 wage earners and 24,275 salaried persons and paid $190,735,851 in wages and $58,937,137 in salaries.

Table II.—*Principal Mineral Products of Missouri, 1946 and 1945*

| Mineral | Value, 1946 | Value, 1945 |
|---|---|---|
| Lead | $30,326,416 | $30,370,900 |
| Cement | 12,142,018 | 6,134,452 |
| Bituminous coal | 9,137,000 | 10,322,177 |
| Stone (exclusive of sandstone) | 8,996,440 | 6,055,747 |
| Clay (raw and products) | 7,221,000 | 3,774,478 |
| Lime | 5,931,485 | 5,031,222 |
| Zinc | 5,425,096 | 5,100,250 |

**Mineral Production.**—In 1946 the value of Missouri's mineral production was $87,100,000, an increase of 18% over 1945. (R. P. Br.)

**Mohammedanism:** *see* ISLAM.

**Molotov, Vyacheslav Mikhailovich** (1890– ), soviet statesman, was educated at St. Petersburg Polytechnical institute and during his youth organized bolshevist student groups. He was appointed president of the soviet of people's commissars in 1930, was named foreign commissar on May 3, 1939, and sign nazi-soviet nonaggression pact in Aug. 1939.

On May 6, 1941, Joseph Stalin took over the premie Molotov retained the foreign ministry portfolio and was vice-premier. During and after World War II, he act Stalin's right hand in diplomatic dealings with the Allies a headed the soviet delegation at the U.N. conference i Francisco in Aug. 1945.

After World War II, Molotov was the Soviet Union's pal delegate at most of the major international parleys. erally unbending and uncompromising, he engaged in fre verbal clashes with western bloc delegates.

In 1947, he protested formally against U.S. Undersecreta State Dean Acheson's statement that soviet policy was "a sive and expanding," and found Secretary of State Geor Marshall's explanation unconvincing. In turn, Molotov rej a U.S. protest against a Moscow journal's slurring referen Pres. Harry S. Truman as a contender "for the laurels o little corporal from Munich."

The soviet foreign minister did not conceal his hos toward the Truman "doctrine" of U.S. aid to Greece and key; subsequent enunciation of the Marshall plan, in whic U.S. would underwrite a program for the economic recove Europe, left him at first suspicious and later openly antagon and on July 2 at a conference in Paris he turned dow Anglo-French proposals for the European recovery program

Following the Paris parley, Molotov proceeded briskl knit eastern European nations into a strong politico-econ bloc. This policy, aided by speedy soviet negotiation of treaties with nations in its orbit, was loosely called the "Mol plan."

The failure of the London conference of foreign ministe the close of 1947, was blamed on the U.S.S.R. by Mars Molotov, however, said the responsibility must be place the "U.S. ruling classes," contending that only soviet R wanted the parley to end in a peace treaty.

**Molybdenum.** The molybdenum production of the U States, as reported in the following t accounted for 80%–90% of the world output.

*Metal Content of Molybdenum Concentrates, 1939–46*

(In millions of pounds)

| | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 |
|---|---|---|---|---|---|---|---|
| Production | 30.32 | 34.31 | 40.36 | 56.94 | 61.67 | 38.68 | 30.80 |
| Shipments* | 32.42 | 25.33 | 38.38 | 66.44 | 53.96 | 39.42 | 32.52 |
| Consumption | ? | ? | 16.9† | 56.39 | 49.89 | 31.52 | 32.70 |
| Stocks | ? | ? | ? | ? | 20.16 | 23.31 | 21.65 |
| Industrial | ? | ? | 21.22 | 12.54 | 17.99 | 19.34 | 16.90 |
| Metals reserve | — | — | ? | ? | 2.17 | 3.97 | 4.75 |

*Including exports. †Second half only.

Demand declined sharply after the close of World War and the 1946 output was the lowest after 1936. Even so, duction was kept in advance of consumption, and heavy a tions were made to stocks, which at the end of 1947 stood considerably more than a year's supply at the existing rate consumption.

The operating rate was stepped up in 1947, giving 20,820, lb. of metal content of concentrates turned out in the first th quarters. Shipments also improved, to 14,857,100 lb. of c tained molybdenum, but consumption in the second and th quarters was at a rate of 22,500,000 lb. a year. (G. A. Ro.

**Monaco.** A principality on the Mediterranean co bounded on the land side by French territo Area: 375 ac. (0.59 sq.mi.); pop. (1946 census) 19,242. Ch towns: Monaco (1,854), La Condamine (9,421), Monte Ca (7,967). Language: French. Ruler: Prince Louis II.

**History.**—In June, celebrations of the 25th anniversary

nce Louis II's reign took place. The state of war with Ger-
ny was ended by decree on Sept. 1. (J. Ra.)

**ducation.**—(1947) Primary schools 9, scholars 1,960; secondary schools
scholars 559.

**inance.**—Revenue (1946) frs. 262,000,000; expenditure (1946) frs.
,000,000. Currency French francs, 1 franc=0.841 cents U.S. (July
7).

**ourist Industry.**—(Aug. 1945–July 1946) Visitors to hotels and
rding houses 39,779. The chief manufactures are perfume and
tery.

**onazite.** The supply of monazite in the United States, obtained from imports from India and Brazil, in-
ased from 384 short tons in 1944 to 549 tons in 1945; since
nazite is one of the source materials for atomic energy,
vernment regulations prevented the publication of the 1946
ports. (G. A. Ro.)

**onetary Units:** *see* Exchange Control and Exchange
tes.

**ongolia** (Outer and Inner). A vast, arid, sparsely settled tableland in northeastern Asia, bounded north
Siberia, east by Manchuria, west by Sinkiang, south by the
inese provinces of Kansu, Shensi, Shansi and Hopei. The
tion next to the Great Wall of China and south of the Gobi
ert is known as Inner Mongolia; it is a part of China. Outer
ongolia, north and west of Inner Mongolia, is an independent
ion. Area (Outer and Inner Mongolia): 956,844 sq.mi. Pop.
t.): between 6,000,000 and 8,000,000. Lack of water, type
soil and the short growing season make agriculture impossi-
in the greater part of the area. The chief industry is grazing
the Mongols live a nomadic life, moving wherever water
pasture are available. Religion: Lamaism, a variety of
ddhism. Of the male population 30% live in lamaseries.

**Outer Mongolia.**—Pop. (est. 1941) 900,000; area 580,158
mi. Capital, Ulan Bator (formerly Urga) (100,000). In the
aty of Aug. 1945 with the U.S.S.R., China agreed to recog-
e the independence of Outer Mongolia if this met with the
hes of the people of the area. China officially recognized the
lependence of the Mongolian People's Republic on Jan. 5,
46, after a plebiscite had been held. In Feb. 1946 treaties
re concluded with China and the U.S.S.R. In June and July
1947 there were border skirmishes between Chinese and
ongolian forces in the Peitashan region of Sinkiang.

The application of the Mongolian People's Republic in June
46 for membership in the United Nations was rejected by the
curity council in 1946 and again in 1947 after the general
embly had recommended reconsideration. The U.S.S.R.
ongly supported the application. China opposed it, charging
Mongolian People's Republic with invasion of the Chinese
ovince of Sinkiang, while the United Kingdom and the
ited States voted against it on the ground that no information
garding the country was available and that its independence
d not been proven.

*Economic and Social Developments.*—All processing of agri-
ltural products, power plants, mining and even such minor
dustries as automobile repair and printing are in the hands of
te combines. Land and all natural resources are nationalized.
ate co-operatives produced goods valued at 64,000,000 tugriks
1941, and in 1940 handicraft co-operative organizations
rned out goods valued at 19,000,000 tugriks (1 tugrik=
146 U.S.). Soviet sources reported 163,000 ac. under cul-
ation. In 1941 there was a total of 27,000,000 head of cattle.
1944 there were 285 primary schools, 36 secondary schools,
echnical schools and 190 nomad schools. In 1947 there were
hospitals, 52 dispensaries and 234 medical centres.

*Government.*—The constitution drafted in 1940 established
government strikingly similar to the soviet system of the U.S.S.R. The supreme organ of the state is the Great Hural which is elected by the hurals of the provinces and the hural of Ulan Bator. The constitution specifies that it must meet at least once in three years. A second body, known as the Little Hural, is elected by the Great Hural and serves as the supreme organ of government when the former is not in session. The Little Hural chooses a presidium of seven members which functions in its place when it is not in session. The administrative functions are carried on by a council of ministers whose membership consists of the heads of the ten departments of government. Local government is based on a system of hurals of the various geographical subdivisions. All men and women 18 years of age or over have the right to vote.

**Inner Mongolia.**—Inner Mongolia is a part of China and includes the provinces of Jehol, Chahar, Suiyuan and Ningsia. Chinese reside in the cities and on the farms while the Mongols predominate in the grazing areas.

The area was occupied by the Japanese in 1937 and organized into a new state, Menchiang. On the surrender of the Japanese forces in Aug. 1945, most of Chahar and Jehol were taken over by the Chinese communists. On Oct. 11, 1946, Chinese nationalists captured Kalgan, capital of Chahar. There were no major changes in the military front in Inner Mongolia in 1947. In July the nationalist armies were forced to evacuate Peipiao, Jehol rail and coal centre. The success of the nationalists in holding most of the territory they had captured was attributed to Gen. Fu Tso-Yi who was able to mobilize the people in the district into well-trained militia. At the close of 1947 the communists controlled the northern section of Chahar and most of Jehol. The nationalists controlled Suiyuan, Ningsia and the southern half of Chahar.

According to Chinese estimates, the population of Inner Mongolia was more than 7,000,000. Principal products of the area are wool, furs, coal, iron, opium, cereals and linseed.

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**Montana.** A northwestern state of the United States, popularly known as the "Treasure state." Land area 146,316 sq.mi.; water area 822 sq.mi.; pop. (1940): 559,456 (1947 est., 582,300); principal cities (1947 pop. est.): Helena, the capital (18,000); Butte (39,000); Great Falls (38,000); Billings (32,000); Missoula (22,000); Anaconda (13,600); Bozeman (12,500); Kalispell (14,000). Of the total population in 1940, there were 540,468 whites, of whom 484,826 were native born and 55,642 were foreign born. The urban population was 211,535 or 37.8%. The Indian population numbered 16,841.

**History.**—Incumbents in the principal state offices in 1947 were: Sam C. Ford (Rep.), governor; Ernest T. Eaton (Rep.), lieutenant governor; Sam W. Mitchell (Dem.), secretary of state; R. V. Bottomly (Dem.), attorney general; George P. Porter (Rep.), treasurer; John J. Holmes (Dem.), auditor; Elizabeth Ireland (Rep.), superintendent of public instruction. In the 1946 elections the veteran statesman Burton K. Wheeler, seeking a fifth term in the United States senate, was defeated in the primary by former Associate Justice Leif Erickson who in turn lost in the general election to Zales Ecton (Rep.). Mike Mansfield (Dem.) and Wesley D'Ewart (Rep.), were re-elected representatives to congress. Paul T. Smith (Dem.), was elected railroad and public service commissioner, and Frank Murray (Dem.), clerk of the supreme court. Hugh Adair and Lee Metcalf were elected to the supreme court on a nonpartisan ticket. Elections for the state legislature returned strong Republican majorities in both houses.

**Education.**—There were 1,467 elementary schools in Montana in 1947, with an enrolment of 68,278 and a teaching staff of 3,382. There were 179 high schools with 27,650 students and 1,333 teachers. The net amount spent on the operation of these schools was $17,095,758. After a careful state-wide study of public elementary and secondary schools, made by a special commission of nine members, a bill was introduced into the legislative session in 1947 providing for sweeping changes in school district organization and financial methods, but was rejected.

**Social Insurance and Assistance, Public Welfare and Related Programs.**—Approximately 19,500 persons received public assistance in 1947. Grants totalling $7,347,141 were distributed as follows (figures in parentheses indicate the average number of recipients per month): old-age assistance (10,696) $4,892,190; aid to dependent children (4,413) $1,344,405; aid to needy blind (396) $191,909; subsistence (1,242) $404,170; medical care (375) $64,331; hospitalization (428) $409,552; burials (39) $40,584. Unemployment benefits of $919,106 were paid to 7,934 persons, an average of $14.39 per week for 8.05 weeks, or $115.84 per claimant. Correctional institutions with their average populations and total expenditures in 1947 were: Montana state prison, 364 inmates, $263,372; state industrial school, 76 inmates, $93,095; vocational school for girls, 36 inmates, $53,248.

**Communications.**—In 1947, the state highway commission maintained 8,756 mi. of highways, of which 1,222 mi. were unsurfaced. State highway expenditures in 1947 were $10,164,425, including federal aid. There were 95 designated airports, of which 26 were suitable for large commercial or military aircraft.

The railway mileage was 5,235 mi. The number of telephones was 93,700.

**Banking and Finance.**—There were 110 banks in the state in 1947. The 39 national banks had total deposits of $279,768,000, and their total assets were $292,618,000. State banks had total deposits of $242,052,393, and their total assets were $253,229,473. There were 16 building and loan associations with assets of $18,572,851. For the fiscal year 1946–June 30, 1947, the net state income, all sources, was $45,585,968.56 and the expenditures were $40,007,481.34, plus bonds redeemed of $3,368,000. The gross debt of the state on July 1, 1947, was $4,992,000 and the net debt, $4,454,776.

**Agriculture.**—Unusually high prices and increased production of many principal crops boosted the total value of agricultural products harvested in Montana during 1947 to the all-time peak of approximately $288,000,000, which was $66,500,000 more than in 1946 and nearly 3 times the average value for the preceding decade. All wheat, with a value of $166,000,000, accounted for three-fourths of the gain over 1946 in the total crop value. Other grains and flaxseed were responsible for 21% of the increased value. More new land was brought under cultivation in 1947 and the acreage of crops harvested was about 380,000 more than the acreage in 1946.

Table I.—*Leading Agricultural Products of Montana, 1947 and 1946*

| Crop | 1947 | 1946 |
|---|---|---|
| Wheat, bu. | 64,325,000 | 62,888,000 |
| Hay, tons | 2,773,000 | 2,569,000 |
| Barley, bu. | 17,940,000 | 17,550,000 |
| Oats, bu. | 10,478,000 | 10,912,000 |
| Sugar beets, tons. | 893,000 | 891,000 |
| Corn, bu. | 2,988,000 | 2,520,000 |
| Flaxseed, bu. | 1,008,000 | 518,000 |
| Potatoes, bu. | 1,820,000 | 2,210,000 |
| Dry beans, 100-lb. bags | 364,000 | 280,000 |
| Alfalfa seed, bu. | 112,000 | 120,000 |
| Mustard seed, lb. | 17,360,000 | 38,250,000 |
| Seed peas, 100-lb. bags | 244,000 | 348,000 |

**Manufactures.**—The total value of manufactures (1939 census) was $151,885,026. Total employment in 1939 was 10,898, and wages and salaries paid, $15,832,241. There were no official figures on the value of manufactures in Montana after 1939, but reports of the state unemployment compensation commission show that an average of 17,000 persons (wage and salary earners) were employed in manufacturing in Montana in 1947 with total wages of about $40,000,000. For the year 1947 electrical power to a total of 2,779,116,000 kw.hr. was generated in the state.

Table II.—*Industrial Products in Montana, 1946 and 1945*

| Products | 1946 | 1945 |
|---|---|---|
| Cheese, lb. | 3,470,000 | 4,172,438 |
| Butter, lb. | 9,453,000 | 9,899,081 |
| Ice cream, gal. | 2,797,000 | 1,588,491 |
| Beet sugar, tons. | 117,000 | 128,000 |
| Flour, sacks | 4,121,000 | 3,426,383 |
| Mill feed, lb. | 142,760,000 | 132,996,509 |
| Beer, bbl. | 271,469 | 265,000 |
| Gasoline, gal. | 177,463,481 | 159,491,392 |
| Electric power generated, kw.hr. | 2,315,056,000 | 2,318,036,000 |

**Mineral Production.**—Increased production in most metals, coupled with increases in the prices of silver, copper and lead, brought about a marked improvement in most phases of Montana's metal-mining industry in 1947 and reversed a four-year downward trend with a 57% over-all gain in the total value of the five metals. Zinc production increased 155%, lead 87%, silver 82% and gold 23%. Copper production showed a decrease of 1%.

Table III.—*Principal Mineral Products of Montana, 1947 and 1946*

| Mineral | Value, 1947 | Value, 1946 |
|---|---|---|
| Copper | $24,087,250 | $18,947,844 |
| Zinc | 10,009,350 | 4,091,880 |
| Silver | 5,386,560 | 2,644,697 |
| Lead | 4,526,000 | 1,805,040 |
| Gold | 3,024,000 | 2,467,745 |
| Total value | $47,033,160 | $29,957,206 |

Crude oil production in Montana in 1947 totalled 8,705,607 bl compared with 8,801,000 bbl. in 1946. The coal tonnage produced 3,131,625 in 1947 and 3,800,000 in 1946. Natural gas deliveries to lines at wells in Montana fields were approximately 32,000,000,000 each year. (E. E.

**Montenegro:** *see* YUGOSLAVIA.

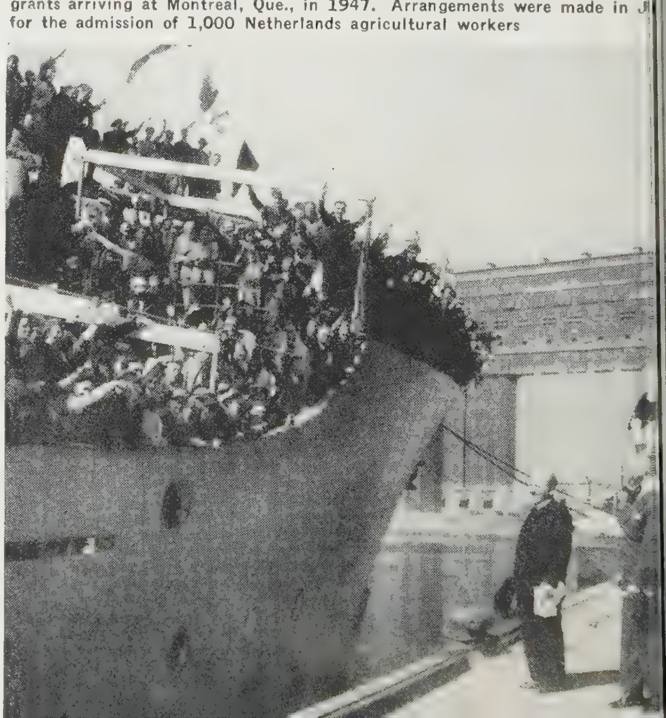
# Montgomery of Alamein, Bernard Law Montgomery,

1st Viscount, of Hindhead (1887– British army officer, was born in Londor Nov. 17, and was educated at St. Paul's school. He serve France in World War I, and in World War II led the 8th a from Egypt to Tunis and in the landings in Sicily and Italy. was later in command of the 21st army group in the operat in northwest Europe. In 1946 he succeeded Field Marshal count Alanbrooke as chief of the imperial general staff. main duties were to adapt imperial defense to the condition reduced British forces.

At the invitation of Marshal of the Soviet Union Alexar Vasilevsky he visited the U.S.S.R. in Jan. 1947 where he methods of Russian military training, and was received Stalin, who gave a dinner in his honour. In May, on the an versary of their liberation, he visited the islands of Jersey Guernsey. In the summer he visited British troops in Palest India, Ceylon and Singapore, and as the guest of the N Zealand and Australian governments visited the two domini Continuing his tours of foreign countries, in the autumn he w to Rhodesia and the Union of South Africa. In the late su mer, on his return from the far east, he was concerned w problems of reducing the size of the armed forces. His c account of the conduct of the campaign in northwest Eur was published under the title *Normandy to the Baltic.*

# Montreal.

A city in the province of Quebec, Canada, f called Ville Marie, founded in 1642 on the site the Indian village of Hochelaga, Montreal is on an island at confluence of the Ottawa and St. Lawrence rivers, approximat 1,000 mi. from the Atlantic ocean and 2,760 mi. from Liverp It is at the head of ocean navigation and is the terminus vessels from the Great Lakes. It is served by three canal s tems—the St. Lawrence canals (1,230 mi. to the Great Lak



DR. J. D. VAN ROYEN, Netherlands ambassador to Canada, waving to im grants arriving at Montreal, Que., in 1947. Arrangements were made in J for the admission of 1,000 Netherlands agricultural workers e eastern United States canals, via the Richelieu river and ake Champlain (length 127 mi.) and the Ottawa river canals ength 119 mi.).

The population of the city proper, as estimated by *Lovell's irectory* (1947), was 1,376,462, and of greater Montreal ,594,712.

The city is governed by a mayor and a council of 99 members, of whom one-third are appointed by public bodies, one-third elected by the property owners and one-third by the citizens generally. The mayor is elected by the citizens. The council appoints from among its members six councillors to act as n executive committee.

Greater Montreal is supervised by the Metropolitan commission, on which the city and suburban municipalities are represented.

The port of Montreal is the largest in Canada. Deep-sea-vessel arrivals in 1947 (commercial) numbered 898, with a net tonnage of 3,512,360. The number of coastal- or inland-vessel arrivals (commercial) in 1947 was 2,408, with a net tonnage of ,415,886. In addition there were noncommercial vessels (such s warships, pleasure boats, yachts, etc.) numbering 127, with a et tonnage of 20,285.

The assessed value of real estate, as of April 30, 1947, was 1,294,413,315, of which $944,646,993 was taxable and $349,66,322 was exempt from taxation. In 1947 building permits were issued for 2,909 new buildings having a value of $41,484,82, and for 2,662 repairs, having a value of $9,797,645.

Bank clearings for 1947 were $13,062,526,776. (J. A. Ma.)

**Montreal, University of.** The French University of Montreal provided physical facilities in its spacious buildings for many congresses and conferences held in the Canadian metropolis throughout 1947; chief among them were the pest control operators, the World Congress of the Young Christian Workers (J.O.C.) with delegates from the five continents taking part in the deliberations, the International Conference bureau, the Action Sociale Catholique (L.I.C.).

A subscription campaign was launched in October to provide the funds necessary to execute the plans drafted for the completion and development of the university, an objective of $11,000,000. The whole population of Montreal and neighbouring counties, without distinction of social rank or creed, immediately responded to the call for support.

The university was the recipient of several gifts apart from the subscription, chiefly a bequest of $100,000 willed by Angelina Ritchot.

The institute of experimental medicine and surgery was housed in its proper quarters in September.

Lectures were given by members of the *Académie Française:* Emile Henriot, Etienne Gilson, Dr. Pasteur Vallery-Radot. (O. M.)

**Montserrat:** *see* LEEWARD ISLANDS.

**Mormons.** The year 1947 was the centennial of the arrival of the Mormon pioneers in Utah under Brigham Young (July 24, 1847). Celebrations of this event were held throughout the state during 1947 under the direction of a commission appointed by the governor and presided over by President David O. McKay of the First Presidency.

During the year the church accelerated its efforts to amplify its welfare program. Besides the help it extended to the needy in the U.S. and Canada (99,602 lb. of clothing and 8,742,386 lb. of food), it sent to European war-stricken countries 2,200,544 lb. of food and clothing, mostly to Germany, but also to Austria, Belgium, England, Finland, France, the Netherlands and Norway. The bulk was produced under the welfare plan; a small percentage was purchased on the open market.

Building operations were intensified. In 1947, 70 meeting houses (chapels) were under construction, at costs running from $10,000 to $200,000 each. Commitments had been made for more than 500 other meeting houses at approximately the same costs.

Activity among the priesthood organizations of the church (all male members twelve years of age and over hold some grade of the priesthood) was intensified with a view to bringing about a feeling of stronger brotherhood among the members. (*See* also CHURCH MEMBERSHIP.) (J. R. Cl.)

**Morocco:** *see* FRENCH OVERSEAS TERRITORIES; SPANISH COLONAL EMPIRE.

**Mortgages, Farm:** *see* AGRICULTURE; FARM CREDIT ADMINISTRATION; FARMERS HOME ADMINISTRATION.

**Mortgages, Home:** *see* HOUSING.

**Moscow.** The year 1947 was likely to prove a decisive one in Moscow's history. On Sept. 7 the whole of the U.S.S.R. celebrated the 800th anniversary of the foundation of the city, which was marked by the bestowal of the Order of Lenin on its citizens and an order of the day from Joseph Stalin. The most significant feature of the whole affair was the stress laid on Moscow as the true and ancient capital, the mother of the centralized Russian state. For some time past there had been a steady movement toward the exaltation of Moscow above Leningrad, a movement reflected in attempts to curb the traditionally independent and experimental frame of mind of Peter's capital, and in the gradual transfer of talent to the old capital in the heart of the Russian plain—from the Academy of Sciences on the one hand to individual ballerinas of outstanding talent on the other. The 800th anniversary of the foundation of the seat of the old Muscovite princes and the first Russian tsars set the seal on this process, which underlined the affinity of the soviet regime with the isolationism and obscurantism of Russia before Peter the Great.

On the material side, the anniversary was made an occasion for announcing the resumption of the ten-year development plan for Moscow, begun in 1935 and interrupted by World War II. For the last six years, while steel skeletons of giant buildings rusted and half-completed blocks of flats steadily crumbled away, innumerable slum dwellings scheduled for demolition continued to house constantly increasing numbers. In 1947 the city council re-started work on the unfinished constructions and cleared the ground for others postponed for many years. Even the giant Palace of Soviets, planned as the tallest building in the world, was to be proceeded with, although every Muscovite had long taken it for granted that the war would provide an excuse for abandoning the project. In addition to this, other skyscrapers were planned, including a 20-story office and apartment block on the Smolenskaya; while the Academy of Sciences was to have a magnificent building on the river front and 1.2 mi. of office blocks and laboratories lining the Kaluga road. For the ordinary Muscovite, the star-shaped underground was to be provided with an outer circle which, by 1952, would bring half the population within easy walking distance of the system; three great arterial boulevards were planned to lead outward from Dzerzhinsky square; while housing space was to be increased by 1.2 sq.mi. of living space by 1950. Since Moscow had at least 2,000,000 more inhabitants than it had room for it would plainly be some time before the housing situation could prove equal to the city's new role as the so-called "cultural centre of the world." (W. E. Cw.)

**Motion Pictures.** U.S. box-office business held up fairly well in 1947. But box-office grosses were accounted for in part by increased admission prices, and there was growing complaint by exhibitors against the necessity of playing some outstanding attractions at advanced rates. Financial statements of the leading film companies generally continued to be healthy, though somewhat off from the high levels of 1946.

The long agitation over asserted communist influence in motion pictures at last reached its climax in the fall of 1947, with the hearings at Washington, D.C., by the house of representatives committee on un-American activities.

Among those who testified were Eric Johnston, president of the Motion Picture Association of America; producers Louis B. Mayer, of Metro-Goldwyn-Mayer, Jack L. Warner, of Warner Bros., Walt Disney, of Walt Disney Productions; director Sam Wood; among the actors were Adolphe Menjou, Gary Cooper, Robert Montgomery, Robert Taylor and Ronald Reagan.

Opinions on the extent of communist penetration differed sharply. Mayer insisted that the communists could not inject their propaganda into pictures because scripts were carefully edited to prevent this. On the other hand, Menjou charged that communists in Hollywood, though in a minority, were highly dangerous because of the sinister way in which they operated.

J. Parnell Thomas, chairman of the committee, asserted that communists had been able to insert propaganda insidiously into various pictures, but by the end of 1947, such instances had not been officially specified.

Ten Hollywood writers, directors and producers refused to state if they were communists and were cited by congress for contempt. Their cases were scheduled for court action in 1948. Those cited were Ring Lardner, Jr., Dalton Trumbo, Samuel Ornitz, John Howard Lawson, Alvah Bessie, Adrian Scott, Edward Dmytryk, Lester Cole, Herbert Biberman and Albert Maltz.

Shortly after adjournment of the committee hearings, leading film executives, meeting in New York, announced a policy of refusing to hire known communists. They discharged or suspended those of the ten witnesses cited for contempt who were in their employ. The industry feared that the communist investigation would give added strength to the movement for government censorship of films. Johnston declared on the stand:

> We insist on the right to decide what will or will not go into our pictures . . . I don't propose that government shall tell the motion picture industry, directly or by coercion, what kind of pictures it ought to make.

In the summer of 1947, the British government placed a tax of 75% on the earnings of foreign films. Repercussions in both Great Britain and the U.S. were sudden and sharp. The U.S. Motion Picture Export association voted to stop all shipments to England of American motion pictures made by its members. British exhibitors protested to their government that they could not keep their theatres open without the U.S. product because the British film makers did not turn out enough pictures to keep the theatres supplied.

Returns from Great Britain constituted the greater part of the foreign market revenue of the U.S. industry. It was estimated that approximately $68,000,000 came annually from the British market, which the new tax would reduce to about $17,000,000. In addition, the British action increasingly agitated the unsettled state of U.S. foreign markets already harassed by hindrances and restrictions. A number of countries, suffering like Great Britain from dollar shortage, considered imitative action.

J. Arthur Rank, whose productions were probably the finest to come out of England, announced a loss of $8,000,000 and a curtailment of production. This further aggravated the plight of the British theatres in the matter of obtaining suffici product to keep their doors open.

The British tax situation, still unameliorated at the end 1947, threatened revolutionary changes in the U.S. product structure. The loss of revenue called for stern retrenchme Economy waves swept U.S. studios, and thousands of employ were thrown out of work. Every effort was made to acqu greater efficiency in production. The choice lay among (a) creased efficiency, (b) increased admission prices, (c) decreas quality. In the main, industry leaders hoped that the lat two possibilities could be avoided. It was apparent that sup productions, costing $3,000,000 or more, would be rarities some time.

Tightening of revenues served to reverse the trend of seve years toward increased independent production. The period lush profits had made independent production so inviting th increasing concern had been felt by the major studios. Ho ever, during 1947, a number of independent companies ceas production. Two, Rainbow and Liberty, were absorbed by Pa mount. The long and complicated litigation between David Selznick and Mary Pickford, Charles Chaplin and United Artis was settled out of court with Selznick selling his stock back the company.

Late in 1947, Donald M. Nelson resigned as president of t Society of Independent Motion Picture Producers.

Protest against the 20% federal tax on theatre admissio was made by exhibitors at hearings of the house of represent tive ways and means committee. The American Theatres ass ciation submitted an estimate, based on theatre collections, an average weekly attendance at U.S. motion-picture houses 91,491,129 for the 12 month period ending April 30, 1947. T federal admission tax from film theatres for this period was est mated at $333,027,705.

Late in 1947, 20th Century-Fox's *Forever Amber* became t third of a trilogy of pictures around which violent censorsh battles had raged, its predecessors being Howard Hughes's *T Outlaw* and David O. Selznick's *Duel in the Sun*. *Foreve Amber*, based on the best-selling novel of that name, dealin with a lady of many lovers in the reign of Charles II of England, first was banned by the Legion of Decency and then give an "objectionable in part" rating after some changes had bee made. In Dec. 1947, the Motion Picture Association of Americ tightened its production code, with emphasis on film conten titles and advertising. Crime pictures were dealt with especially

Appeals were taken to the U.S. supreme court from the findings of the U.S. district court in New York, in 1946, in th government's antitrust action against eight motion-picture companies. The government sought to separate theatre ownershi from the film companies. The distributor defendants asked revision of methods prescribed for picture distribution. Arguments on the appeals were to be heard early in 1948.

In 1947, the Production Code administration approved 36 U.S. features and 37 foreign, a total of 402. In 1946, 397 U.S features and 28 foreign features went through the Johnston office, a total of 425, or 23 more than in 1947.

The studio strike, called by the Conference of Studio Unions in jurisdictional strife with the International Alliance of Theatrical Stage Employees, went into its second year. Peace efforts continued, and there were withdrawals and loosening of restrictions by a number of the striking organizations. But officially the strike continued in effect, although the studios showed little sign of practical harassment by the situation.

From the standpoint of type of product, the most significant development of 1947 was the filming of two pictures dealing with anti-Semitism: 20th Century-Fox's *Gentleman's Agreement* and RKO's *Crossfire*.

*Gentleman's Agreement* won the New York film critics award the best picture of the year; Elia Kazan, who directed it and *oomerang,* was voted the best director. Deborah Kerr was ven honours as the best actress, and William Powell, the best ctor. The Italian film *To Live in Peace* was judged the best reign language offering of the year.

Among the newcomers to attract the most attention in 1947 ere Alida Valli and Louis Jourdan in *The Paradine Case,* ichard Widmark in *Kiss of Death,* Barbara Bel Geddes in *The ong Night* and Wanda Hendrix in *Ride the Pink Horse.*

The outstanding U.S. films of 1947 included: *Gentleman's greement, Mourning Becomes Electra, A Double Life, Cary nd the Bishop's Wife, Black Gold, Lady in the Lake, The Farm- 's Daughter, Miracle on 34th Street, Life with Father, Mother ore Tights, Cass Timberlane, The Long Night, Road to Rio, ossessed, Boomerang, Unconquered, Welcome Stranger, Bach- lor and the Bobby Soxer, Perils of Pauline* and *Secret Life f Walter Mitty.*

The *Motion Picture Herald's* annual poll showed the following stars as the leading box-office attractions in 1947: Bing rosby, for the fourth year, headed the list as the top moneyaker. The other nine were Betty Grable, Ingrid Bergman, ary Cooper, Humphrey Bogart, Bob Hope, Clark Gable, regory Peck, Claudette Colbert and Alan Ladd.

Academy of Motion Picture Arts and Sciences awards for 946:

Best picture, *The Best Years of Our Lives,* Samuel Goldwyn, RKO; performances: actor, Fredric March in *The Best Years of Our Lives;* actress, livia de Havilland in *To Each His Own,* Paramount; supporting actor, arold Russell in *The Best Years of Our Lives;* supporting actress, Anne axter in *The Razor's Edge,* 20th Century-Fox; best direction, William Vyler for *The Best Years of Our Lives;* best written screen play, Robert . Sherwood, *The Best Years of Our Lives;* best original screen play, Muriel ox and Sydney Box for *The Seventh Veil,* J. Arthur Rank-Sydney Box-rtus, Universal; best original motion-picture story, Clemence Dane for *acation from Marriage,* London Films Prods., Ltd., Metro-Goldwyn-ayer; best art direction—black and white—Lyle Wheeler and William arling for *Anna and the King of Siam,* 20th Century-Fox; colour, Cedric ibbons and Paul Groesse for *The Yearling,* Metro-Goldwyn-Mayer; best inematography—black and white—Arthur Miller for *Anna and the King f Siam;* colour, Charles Rosher, Leonard Smith and Arthur Arling for *he Yearling;* best sound recording, John Livadary for *The Jolson Story,* olumbia; short subjects—cartoon, *The Cat Concerto,* Metro-Goldwyn-ayer (Frederick Quimby, producer); one-reeler, *Facing Your Danger,* Varner Bros. (Gordon Hollingshead, producer); two-reeler, *A Boy and His og,* Warner Bros. (Gordon Hollingshead, producer); best film editing, aniel Mandell for *The Best Years of Our Lives;* best scoring of a dramatic r comedy picture, Hugo Friedhofer for *The Best Years of Our Lives;* best ong, "On the Atchison, Topeka and Santa Fe" from *The Harvey Girls,* Metro-Goldwyn-Mayer (music by Harry Warren, lyrics by Johnny Mer-er); best special effects, Thomas Howard, visual, for *Blithe Spirit,* J. rthur Rank-Noel Coward-Cineguild, United Artists; best interior decora-ion—black and white—Thomas Little and Frank E. Hughes for *Anna and he King of Siam;* colour, Edwin B. Willis for *The Yearling;* special awards, ocumentary—short subject, *Seeds of Destiny,* U.S. war department; Irv-ng G. Thalberg memorial award, Samuel Goldwyn; other special awards, aurence Olivier for his outstanding achievement as actor, producer and irector in bringing *Henry V* to the screen; Harold Russell for bringing ope and courage to his fellow veterans through his appearance in *The Best ears of Our Lives;* Ernst Lubitsch for his distinguished contributions to he art of the motion picture; Claude Jarman, Jr., outstanding child actor f 1946. (L. O. P.)

**Educational Motion Pictures.**—The leading producing organization in the field, Encyclopædia Britannica Films Inc., reeased during 1947 a schedule of 48 new subjects and announced lans for the production in 1948 of 25 additional films, making total of more than 500 subjects available through E.B.F. Durng 1947, *Atomic Energy* was the largest-selling E.B.F. subject, ollowed by *Gray Squirrel, Adventures of Bunny Rabbit* and *eart and Circulation.* E.B.F. also reported that its all-time est-selling subject during the 18 years of its activity had been *ound Waves and Their Sources.* Other popular E.B.F. subects were *Body Defenses Against Disease, Digestion of Foods, lectrodynamics, Electrons, Molecular Theory of Matter* and *lant Growth.*

Coronet Instructional Films reported it had 120 subjects vailable for delivery as of Dec. 31, 1947, with 5 additional ubjects scheduled for January release. Of these, 90 subjects were available in colour as well as black-and-white. Coronet reported that 35% of all prints sold in 1947 were in colour. This amounts to nearly 50% in dollar value of Coronet sales and indicates a strong interest in colour films for educational purposes, although prints cost twice as much as black-and-white. Coronet announced a production schedule of 60 subjects for 1948, to be released at the rate of 5 a month. Coronet's most popular subjects in 1947 were those dealing with basic skills—*How to Study, Know Your Library, Maps Are Fun, Global Concepts in Maps, Spelling Is Easy, How to Read a Book* and *Improve Your Reading.* Among the new subjects made by Coronet were films on *Dancing, Secretarial Training, Powers of Congress* and *Political Parties.*

SCENE from *Shoe-Shine,* Italian film released in the U.S. during 1947

United World Films completed 19 subjects in 1947 and announced a release schedule of 67 new subjects for 1948. It was also expected that United World would soon distribute in America the first children's films being produced in England by Mary Field of the J. Arthur Rank organization, including 8 features, a 5-part serial and 18 issues of a children's film magazine, besides travelogues and nature subjects.

RKO-Radio Pictures published in Jan. 1948 a 40-page catalogue of 16-mm. versions of its most notable features, many of them recommended by the National Education Association Department of Secondary Teachers for school use, including Walt Disney features based on children's classics, as well as historical and biographical films.

Young America Films reported a total of 46 sound films and

53 slide films available at the end of 1947. Of these, 34 were exclusively Young America productions; 12 were productions of other companies, released through Young America Films. The company announced a production schedule of 15 films for 1948. Greatest in demand among Young America items was *The House I Live In,* a plea for racial tolerance, featuring Frank Sinatra and previously released to theatres by RKO. Most popular of Young America's own productions were *We the People, What Is Four?, What Makes Rain?* and *Safety to and from School.*

Teaching Films, Inc., completed, in less than a year, 9 sound films and 17 filmstrips. The company's best film was *Rhythm Is Everywhere.*

During 1947, British Information Services further developed its policy of granting on an exclusive basis the sales rights of many films to a number of dealers throughout the U.S., while retaining its own rental service for these films. One of its most successful films of the year, *Instruments of the Orchestra,* was handled in this manner. The Benjamin Britten *Variations and Fugue,* which forms the sound track, was recorded by Columbia Recording company under the title, *A Young Person's Guide to the Orchestra.* Another important British release was *Charter of the United Nations.* The sales rights are held by Films of the Nations, Inc., official distributor of United Nations Films. B.I.S. films were being increasingly used on television programs. The 15 film libraries maintained throughout the country by B.I.S. continued to distribute prints of more than 350 subjects to schools, clubs, industries, churches, adult groups and individuals.

The *Reader's Digest,* at the request of the Department of Secondary Teachers of the National Education association, released in Oct. 1947 an excellent kit of six filmstrips entitled *Our American Heritage,* for high school classes in English and the social studies, including visualizations of *The Vocabulary of Freedom* and *The Literature of Freedom,* as well as sections on the appreciation of American democracy. Within three months, the schools purchased 1,100 of these kits.

Religious films and filmstrips became increasingly available in Protestant churches. The Protestant Film commission released its first production, *Beyond Our Own,* which was well received. The Wartburg Press completed *The Way of Peace,* a colour film utilizing puppets. Hack Productions reported an increasing demand for *The Frontier Parson.* The number of productions offered by Cathedral Films, Inc., included 23 films and 23 filmstrips. Among the most notable filmstrips were those produced by The Pilgrim Press, Church Screen Productions, Church-Craft Pictures and the Department of Visual Aids of the Congregational churches. United World Films, joining the trend, announced the formation of a religious film division. *Audio-Visual Guide* published a list of 50 sources of religious films. Although William H. Mooring, motion-picture editor of *The Tidings,* official weekly of the archdiocese of Los Angeles, reported in Dec. 1947 that no worthwhile movies geared to the purposes of Catholic education had been produced, Loyola Films had launched a series of Catholic teaching films and announced the availability of 15 Biblical films for parish schools.

Most active of the organizations interested in visual education was the N.E.A. Department of Secondary Teachers. That organization launched the Audio-Visual Awards project and established the idea of an annual Audio-Visual Education week, Oct. 27–31, to measure progress of its ten-point program for improvement of audio-visual methodologies, publication of bibliographies of audio-visual materials, investigation of children's film standards, development of "pilot" schools, fostering of book-film relationships, co-operation of schools with churches and community organizations in developing children's film programs, improvement of instruction in critical appreciation photoplays, stimulating of school-made films, and co-ordinat of research studies. The program received the support of st and local authorities through proclamations of governors, m ors and boards of education. It received endorsements from National Association of Visual Education Dealers, the All Non-Theatrical Film association and the Film Council of Am ica. Manufacturers, producers, distributors and university tension authorities announced that they would present proj tors, screens, films, photographic accessories, pictured encyc paedias and other materials as practical awards to supplement t "glory" of committee citations for outstanding work, with view to setting up demonstration centres throughout the U A total of $20,000 worth of equipment had been officially pro ised by the end of 1947 for presentation on the anniversary National Audio-Visual Education week, the last week of O 1948. It was suggested that A-V week be made internation after 1948.

The Film Council of America was organized during Wor War II as the National 16-mm. Advisory committee to help t treasury department and the Office of War Information boo the civilian war effort. It became known as the Film Council America in 1946 and was made up of seven national organiz tions. They were: American Library association; Education Film Library association; The National University Extensi association; The National Education association; The Nation Association of Visual Education Dealers; The Allied No Theatrical Film association; Visual Equipment Manufacture council.

During 1947 a board of trustees of nationally noted leaders education and business was named. Nearly 100 community fil councils had been formed by early 1948, and the year's goal w 350 new councils. Each of these, made up of community lea ers, held regular meetings and interested other groups in usi informational films at club meetings for discussion and to fost better understanding and better education.

The council appointed Thurman White of the University Oklahoma its travelling executive director and adopted a plan establish these local councils under the leadership of C. Reagan of Texas, founder and first president of the council, an Stephen M. Corey of the University of Chicago, chairman the board of trustees. In two months of activity, the counc reported the enrolment of 45 local councils as of Dec. 31, 194

Among the most noteworthy projects of the Film council wa the Films of the World festival held in Chicago during Oct. an Nov. 1947, when for the first time in history the outstandin 16-mm. informational films produced all over the world we shown for eight consecutive Saturday afternoons. Several othe cities also started film festivals of informational motion picture before the year's end.

The 1947–48 *Anfa Year Book* listed 131 manufacturers o projectors in the audio-visual field, 178 producers, 260 sponso of 16-mm. films, 712 film libraries and 2,330 individuals in it audio-visual directory. The 1946 *Year Book* had listed onl half as many.

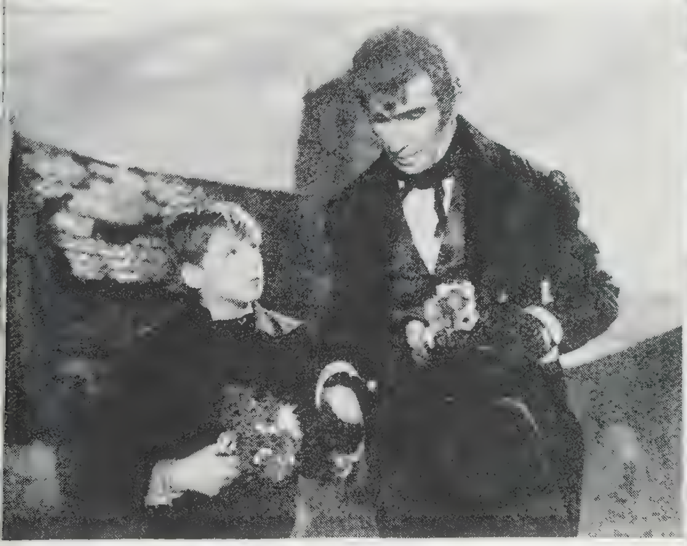
One of the leading 16-mm. distributing organizations, Film Incorporated, estimated in Dec. 1947 that there were 50,00 sound projectors in the schools. Its mailing lists included 35,00 schools so equipped. L. C. Larson, head of the Indiana University Film centre, predicted that the number of machines in th schools would be tripled by 1950. This would mean that th goal set by the American Council on Education—at least on projector for every 200 students—would be reached withi three years.

Publishers, after many years of hesitation, were joining th audio-visual trend in considerable numbers by the end of 1947

bove: **GREGORY PECK AND CELESTE HOLM** in a scene from *Gentle-ian's Agreement*, chosen by the Motion Picture Academy of Arts and ciences as the best picture of 1947. Miss Holm's performance as a supportng actress was voted the best of the year and Elia Kazan's direction won a hird award for the film

ight: **RONALD COLMAN** was chosen by the Motion Picture Academy of rts and Sciences as the best actor of 1947 for his role as the Shakespearian ctor in *A Double Life*. The musical score for the picture was voted the est of the year

elow: **ANTHONY WAGER** and Bernard Miles in a scene from *Great xpectations* which won the 1947 Motion Picture Academy of Arts and ciences awards for the best art direction and best set decoration in black nd white



Right: **LORETTA YOUNG** as the Swedish maid in *The Farmer's Daughter*, for which she won the 1947 Motion Picture Academy of Arts and Sciences award as the best actress of the year

Below, left: **SCENE** from *The Bachelor and the Bobby-Soxer*, written by Sidney Sheldon and voted the best original screen play of 1947 by the Motion Picture Academy of Arts and Sciences

Below, right: **EDMUND GWENN** playing Santa Claus in *Miracle on 34th Street*. He was selected by the Motion Picture Academy of Arts and Sciences as the best supporting actor of 1947 and the picture was chosen as the best written screen play and the best original motion picture story of the year

McGraw-Hill announced the completion of 24 films and 22 filmstrips. John Wiley and Sons announced the establishment of a text-film division. Popular Science Publishing company produced 65 filmstrips. Plans for filmstrips were also announced by Silver Burdett and by Macmillan. D. C. Heath and Co. and other firms announced correlations of projected pictures with textbooks. These publishers were wisely not expecting to derive direct profits from film production but were planning to charge their film expense to the promotion of their books and magazines.

Bibliography.—William S. Hockman, *Projected Visual Aids in the Church;* Henry Clay Gipson, *Films in Business and Industry;* Forsyth Hardy, ed., *Grierson on Documentary; Informational Film Year Book 1947* (Edinburgh); Alice P. Sterner, *Radio, Motion Picture, and Reading Interests;* Edgar Dale, *Audio Visual Methods in Teaching;* Charles F. Hoban, Jr., *Movies That Teach;* John R. Miles and Charles R. Spain, *Audio-Visual Aids in the Armed Services.* A pamphlet on *Foundations for Teacher Education in Audio-Visual Instruction,* No. 9 in Series II of the American council's notable *Studies on Motion Pictures in Education,* appeared in 1947. (X.)

**Technical Developments.**—For more than 12 years the Academy of Motion Picture Arts and Sciences in Hollywood has had a branch known as the Research council, whose function it was to handle co-operative efforts of the industry in standards, certain equipment developments, and to disseminate technical information. The activity of this Academy Research council was taken over by the Motion Picture Research Council, Inc. This is a nonprofit activity supported by producing companies in Hollywood. In 1947, it was in the process of expanding its staff and its activities to cover all technical phases of the industry. A small camera crane, the design of which was started by the Academy Research council, was completed by the new organization, and a Hollywood manufacturing concern was expected to start delivery of these cranes early in 1948. Set lighting was to be one of the important projects under active consideration by this new group.

*Standards.*—The American Standards association continued consideration of the special temporary standards adopted during World War II and revised previously existing standards for the motion-picture industry. As a result, 15 new standards were approved which, with those previously approved, brought the total to 40 for this industry. Approximately 20 additional items were proposed for standardization. The A.S.A. also initiated a project on sound recording standards to include magnetic recording techniques.

*Camera.*—In England, G. B. Kalee successfully introduced the Newall camera, said to be similar to the Mitchell NC. A new colour camera designed for three-colour separation negatives was also introduced in England under the name British Tri-Colour camera.

*Varifocal Lens.*—A new varifocal or "zoom" lens was announced at the 1946 spring conventions of the Society of Motion Picture Engineers under the trade name of Zoomar. This lens was placed in use during 1947 on television, 16-mm. and 35-mm. newsreel cameras. Some spectacular results were obtained but the quality was believed not to be satisfactory for 35-mm. entertainment films. The manufacturer was reported to be working on further developments. (*American Cinematographer,* March 1947; *S.M.P.E. Journal,* Dec. 1946.)

*Photography from a Helicopter.*—After experimental work on suitable camera mounts, RKO, Warner Bros. and Universal used a helicopter for production photography. Although results were not entirely satisfactory, further improvements were expected to be made. (*American Cinematographer,* Sept. 1947.)

*Photographic Effects.*—Paramount in Hollywood developed a complicated but highly precise servomechanism and electronic recorder and repeater to permit recording and repeating the exact pan and tilt movement of a camera. This permits camera motion in certain types of process photography where previously only a stationary camera could be used. (*American Cinematographer,* Dec. 1947.)

*Electronic Fire and Gas Light Effect.*—Warner Bros. developed an electronic device whereby an actual gas flame being photographed (either an old-fashioned gas light or a gas burning fire) can be used to control, through a photoelectric tube and a thyratron amplifier, incandescent electric lights to produce sufficient intensity for photography while accurately following variations in the gas flame. (*S.M.P.E. Journal,* April 1947.)

*Compact Source Lamp.*—Two English manufacturing firms, the General Electric company and the British Thompson-Houston company developed a new mercury-cadmium arc lamp called the "compact" source. Tests were successfully made in both black-and-white and colour photography. It was expected that during 1948 these lamps would be in use for production photography. In the U.S. both the General Electric company and Westinghouse Electric and Manufacturing company were actively engaged in the development of a similar light source. This development represented one of the most important in the lighting field in a quarter of a century and was being watched with interest by producing companies. The *Journal of British Kinematograph Society* for Oct. 1947 carried an article on this new light source.

*Flashtubes.*—The flashtube is basically a gas-filled glass or quartz tube with two electrodes operated by the discharge from a suitable electrical condenser. While it is not new, it was considerably improved during the previous six or seven years with the result that some interest was shown in the U.S. in the possibilities of using such lamps for motion-picture photography. Reasonably successful tests were made with these lamps flashing at the rate of 72 times per second, but further development work was required in the lamps and their associated power circuits. (*S.M.P.E. Journal,* May 1947.)

*Sound.*—New sound recording and reproducing equipment were introduced in various countries, including Visatone and Gaumont-Kalee in England, and Western Electric and RCA in the U.S. In general, this equipment represented refinements over prewar equipment with lower flutter and distortion.

*Magnetic Recording.*—Before and during World War II, Germany
important strides in improving magnetic recording and reproduction
paper or plastic tapes coated or impregnated with magnetic mate
This work was continued in several countries, and in the U.S. was co
ered for motion-picture as well as other activities. RCA had equip
designs available for application to its photographic recording and re
ducing equipment at the end of 1947. These designs permit modifica
of existing equipment for magnetic recording and reproduction when u
a plastic base coated with magnetic material and having dimensions
perforations like 35-mm. photographic film. No commercial use was n
of this equipment during the year. Incidental recordings were, howe
made on nonsynchronous magnetic recorders and used by various mot
picture producing companies.

*Colour.*—The Agfa colour process, as developed in Germany, was sai
be in use in the U.S.S.R. and Czechoslovakia, but no information on
use was available. It apparently was not used in any other countries.
the U.S. improvements in Ansco colour continued. The first 35-mm. th
rical release was a two-reel travelogue entitled *Climbing the Matterh*
filmed in Switzerland and released by Monogram. (*American Cinema*
*rapher,* Sept. 1947.) A feature picture entitled *Sixteen Fathoms Deep*
being produced in Hollywood by Arthur Lake Productions. The proces
use by Republic Productions, Inc., under the trade name Trucolor, was
proved and was reported by Eastman Kodak company to be an appl
tion of the Kodacolor principle with dye couplers in the emulsion. This
is processable by the user. Cinecolor, Inc., expanded its Hollywood p
to a capacity three times that available before the war. This company
using a two-colour process but was also working with a three-colour pro
which was being used for some cartoons and for 35-mm. enlargements m
from 16-mm. Kodachrome. Various other colour processes were repo
to be in the research laboratories but were not yet ready for commer
use.

*Fifty-Millimetre Film.*—It was reported that in 1946 20th Century-
Film corporation and several equipment and film manufacturing compa
were developing a new system of motion-picture entertainment involv
a film of 50-mm. width with stereophonic sound recorded and reprodu
from three program sound tracks and a control track. Some additio
work was done on this and several private demonstrations were made.
decision, however, was reached as to the commercial application of this fi

*Sixteen-Millimetre.*—The release of entertainment films in 16-mm.
sions continued to grow. The importance of this release caused car
consideration in Hollywood of all of the standard equipment and techniq
involved in producing 16-mm. releases from 35-mm. originals and in h
dling and exhibiting such prints. Among other problems being conside
were: making two composite prints on a 32-mm. film arranged so that s
ting down the middle produces two 16-mm. prints; also, print life a
function of projectors; film handling equipment and shipping practices.

*Television.*—The development of theatre television equipment was c
tinued. One or more theatre installations were believed to have been m
in England, but no such installations were made in the U.S. The po
bility of applying television equipment and techniques to the production
motion pictures was also under consideration in various countries. It
believed that preliminary tests had been made in both England and
U.S. The Eastman Kodak company announced a 16-mm. motion-pict
camera designed specifically to photograph a television receiving catho
ray tube. This camera, coupled with high-speed developing processes a
developed by the Eastman Kodak company, made possible a demonst
tion at the fall conventions of the Society of Motion Picture Engineers
the possibilities of photographing a television image on motion-picture fi
RCA and Paramount were also known to have developed equipment a
methods for such photography in 35-mm.

**Mexico.**—The industry in Mexico continued to develop w
the full facilities of the Churubusco studio, including its labo
atory, becoming available. The Tepeyac studios, built duri
1946, were found to have structural troubles in their stag
which necessitated a major rebuilding program which was co
pleted by the close of the year. This studio, with its laborato
was expected to be in full operation in 1948.

**South America.**—Argentina had not overcome the handica
of the war years, but with the new building program project
for 1948 was expected to produce 60 feature pictures that ye
as compared with 58 before World War II. A new branch of t
motion-picture industry was growing in Brazil. Activities alrea
under way and projected for the near future indicated the pos
bility that Brazil might well become an important producer
motion pictures. (W. V. W.)

**Canada.**—The National Film board was active througho
the year, producing not only commentaries on Canadian li
but also special films such as *File 136,* an account of royal Can
dian mounted police activities, *Red Runs the Fraser,* the salmo
run, and *The Feeling of Rejection,* a study in psychiatry com
mended by the American Medical association. Organized as t
responsibility of one of the cabinet ministers, steps were take
to establish the NFB as a crown company with a budget of i
own and make it responsible directly to a parliamentary com
mittee.

The only active large-scale private film producing compan
was Quebec Productions Corp., Montreal. It took over a mil

ary camp at St. Hyacinthe and converted barracks into studios nd sound stages. One 1947 production was experimentally lmed in two languages simultaneously. There were two sets of ctors, one doing a scene as soon as the other had finished. This as *La Forteresse* in French and *Whispering City* in English, thriller with a Quebec city setting.

In 1946, 227,538,798 Canadians spent nearly $60,000,000 on dmissions to 1,477 movie houses. British Columbia had a per apita expenditure of $8.10; Ontario came second with $7.56; nd Prince Edward Island was ninth with $3.17. (C. Cy.)

**Great Britain and Europe.**—There were widespread activiies in European film production during 1947, in spite of the conomic problems that affected most of the film industries. Most of the leading countries of Europe wished to consolidate heir film industries and expand their production. Their problem was the universal one, lack of sufficient raw materials and equipment necessary to the manufacture of high quality motion picures. The United Nations Educational, Scientific and Cultural rganization *Report on the Commission on Technical Needs,* ublished in Paris, Sept. 1947, examined these deficiencies in en European industries, especially in the case of France, the most severely pressed of the more important film-producing naions. Nevertheless, culturally and artistically speaking, the European industries were progressing. A number of international ilm festivals were held during 1947 at Cannes, Prague, Vienna, Locarno, London and Edinburgh, and most notably at Brussels, where many countries received awards for various aspects of heir filmcraft at a festival sponsored by the Belgian government. Among the year's international film conferences should e included that at Brussels for film critics, that at Paris for ilm scriptwriters and that at Prague for film technicians.

The major problem for Britain during 1947 arose when the British government, for long under fire for spending too many of its scarce dollars on film importation from the United States (some $70,000,000 a year as against some $30,000,000 prewar), imposed in August a 75% tax on the potential takings of imported films intended for normal exhibition throughout the country. (The immediate result of this decision in both the U.S. and Great Britain is described in the U.S. section, above.) British producers, also, were faced with a possible falling-off in their overseas market, particularly in the distribution of British films in the United States; there was a general feeling that with rising production costs the less ambitious type of feature film would take the floor in 1948 and that higher-budget pictures would be virtually eliminated once existing commitments were cleared. Documentary film sponsorship (still largely, though not entirely, a governmental affair) was going through a new stage of enquiry to save waste and delays. Nevertheless, some 200 reels of finished documentary subjects were completed for the central office of information.

In spite of these problems of finance and administration, some important productions appeared during 1947. They include: *Great Expectations* (director, David Lean), *Odd Man Out* (Carol Reed), *School for Danger* (Wing-Commander E. Baird), *Hue and Cry* (Charles Crichton), *Black Narcissus* (Michael Powell and Emeric Pressburger), *Take My Life* (Ronald Neame), *They Made Me a Fugitive* (Alberto Cavalcanti), *Frieda* (Basil Dearden), *Holiday Camp* (Kenneth Annakin), *The October Man* (Roy Baker), *Fame Is the Spur* (Roy Boulting), *Captain Boycott* (Frank Launder) and *The End of the River* (directed by Derek Twist, mostly in Brazil). Among production experiments were two feature-length films for children, *The Little Ballerina* (Lewis Gilbert) and *Bush Christmas* (made by Ralph Smart entirely in Australia). British production units worked in several European countries for films to be released in 1948, and some important productions were completed, including among others: *Hamlet, Oliver Twist, Anna Karenina, Brighton Rock, Red Shoes, Scott of the Antarctic* and *Vice Versa.* Documentaries included *The World Is Rich* and *A City Speaks* (Paul Rotha), *A String of Beads* (Ralph Keene), *The Cumberland Story* (Humphrey Jennings) and the excellent series *This Modern Age,* sponsored by the Rank organization.

In France the economic crisis increased the over-all production cost of feature films by 10.7 times, but the average rise in theatre admission prices was only 3.9 times. Attendance at theatres, however, rose 40% above the prewar figure. The industry was further burdened by crippling taxation. The production of feature-length films was estimated at 45 for 1947, as against 94 in 1946 and 113 in 1938. Nevertheless, France was still in the van of production, winning the major award with *Le Silence est d'Or* (René Clair) at the Brussels festival, and releasing a number of important films during the year, including: *Les Portes de la Nuit* (Marcel Carné); *Le Bataillon du Ciel* (Joseph Kessel); *Le Diable au Corps* (Claude Autant-Lara); *Copie Conforme* (Jean Dreville); *Voyage Surprise* (Pierre Prévert); *Les Maudits* (René Clement); and *Antoine et Antoinette* (Jacques Becker). The French producers seemed to share with other European film makers the desire to increase the psychological realism of their films.

Russian production began to revive after the severe reduction in film making occasioned by war and invasion. Undoubtedly the most important event during 1947 was the opening in Moscow in February of the first theatre permanently equipped to project stereoscopic films, the outcome of 12 years' research work by the engineer Semen Ivanov. He replaced his prewar grid screen by one of a new type. The first feature film to be released was *Robinson Crusoe* (director, A. N. Andreevski), and the new screen and its effect was described in this way by Gordon Macleod: "It was only when Crusoe in his shipwreck throws a rope to a drowning sailor that you get the first shock. The rope comes hurtling and curling right out of the screen into the darkness over your head. At you! You duck. We all did. After that we were ready for anything. . . . Sometimes the foreground itself comes alive. As Crusoe advances down a corridor of undergrowth, the camera tracks backwards in front of him. Out in the auditorium about three rows in front of you, leaves and lianas materialize in the air, dangle and dance, and float away into Crusoe's face. Parakeets and small birds sit on them; or fly out at you from the screen and vanish over your head; or form themselves out of nothing into a cluster of wings in the darkness. Their musical chattering is also in the air all round you and there is no need here as in an ordinary cinema to adjust this depth of sound to the flat conventions on the screen several yards away." (From the British Film institute's journal *Sight and Sound,* autumn 1947, p. 118, London.)

Among other soviet films of 1947 were *The Vow* (M. Chiaureli), *Admiral Nakhimov* (V. I. Pudovkin), *The Stone Flower* (A. Ptushko, in Agfacolor), *Glinka* (L. Arnshtam) and *Cruiser Varyag* (V. Eysmont). There was also an increase in the number of feature films intended to popularize science, led by Alexander Dovzhenko's *Mitchurin,* the biography of a well-known Russian scientist.

One of the interesting movements in Europe was the attempt, official and otherwise, to encourage widespread national film production. Portugal, Holland, Belgium, Norway, Hungary, Greece, Rumania, Bulgaria, Yugoslavia and Poland (the two latter with nationalized industries) were among countries developing or planning film making, while Denmark, a pioneer centre for production 40 years ago, was reviving its industry after a temporary boom in production, 1940–45 (90 feature films).

More important were the old-established production centres of Sweden and Czechoslovakia. Film making in Sweden was based in Stockholm, and pictures were made at an average cost of $80,000; colour films were beginning to be produced both in Cinecolor and Technicolor. In all, Sweden produced as many as 50 feature films in a year. Important films included the comedian Nils Poppe's *The Balloon* and *Mr. Cinders* and the dramatic actor Stig Järrel's production *Wicked Eyes*. The outstanding director in Sweden was probably Alf Sjöberg, famous as the director of *Frenzy* (*Hets*).

Czechoslovakia produced about 40 feature films a year before World War II. During the war the nazis renovated and enlarged the studios at Barrandov near Prague, making them probably the finest in Europe. These studios were used for the production of German films until Czechoslovakia was liberated. The Czechs nationalized their film industry in Aug. 1945, produced 12 feature films in 1946 and planned to double this output in 1947. They were also concentrating on the production of admirable puppet and cartoon films (many in Agfacolor) as well as documentary and educational pictures. A film technical institute was founded to train technicians for the studios.

Finally, it is necessary to note the revival of film production in Germany and Italy. Germany's film companies operated under licence from the occupying powers; D.E.F.A. (*Deutsche Film Aktion-gesellschaft*) operated under soviet authority and Studio 1945 under British authority, while Erich Pommer, the celebrated pioneer producer of the German theatre before Hitler and now a U.S. citizen, took charge of production on behalf of the U.S. authorities. The first feature films began to appear during 1947. Production was also reviving in Austria.

One of the most remarkable artistic revivals of 1946–47 took place in Italy, particularly in the films of Roberto Rossellini, *Open City* and *Paisa*. These films, together with Luigi Zampa's *To Live in Peace*, Vittorio de Sica's *Shoe-Shine* and Aldo Vergano's *The Sun Still Rises*, achieved a high place in the European film festivals during the year. U.S., British and French companies also made films in Italy. (R. MAN.)

## Motor-Boat Racing.

One of the outstanding achievements in motor-boat racing in 1947 was the record piled up by 29-year-old Daniel Foster, from California, driving the Allison-powered, Ventnor-designed Gold cup class hydroplane "Miss Peps V," owned by Walter, Roy and Russell Dossin, brothers, of Detroit, Mich. Foster became the first driver in history to win the President's cup, the national sweepstakes and the Gold cup all in one season.

In the 135-cu.in. hydroplane class, Tommy Caldwell's "Blue Blazes" set a new mile record at 88.782 m.p.h. and Bob Sykes, driving Burney Edwards' "Mighty Chevron," raised the five-mile competition record to 70.588 m.p.h.

Division II of the 225-cu.in. class, with an engine price limit of $600, actually outstripped Division I, with a $900 limit to which no new engines were built. No new racing outboard motors appeared either, but competition was keen.

The racing runabout classes were active, and Frank Foulke, with "Sagana," set several new Class D records, including one of 58.245 m.p.h. in competition, which was two miles over the Class K record made with far more powerful engines.

In England, Sir Malcolm Campbell attempted to better his world's motor-boat speed record of 141.74 m.p.h., with his "Blue Bird," equipped with a jet motor, but the boat proved unstable at high speeds and the tests were postponed pending alterations.

Speedboat racing was revived to a limited extent in France with no outstanding developments. (H. L. ST.)

## Motor Transportation.

Like all other forms of industry, transportation by bus and truck felt the impact of economic forces in the rising cost of doing business. This was particularly true of bus operations both regards the upward trend of wages and the price of materi and supplies. In one respect, however, the motor transportat industry was fortunate. The bottlenecks that were retarding flow of new vehicles and supplies to the industry were eas This made it possible to further the plans designed by ma companies to carry forward their plans for replacements wh have made it possible to operate more economically.

**Production Figures.**—The production of new vehicles w speeded up. In the bus field production of new vehicles ga promise, according to preliminary figures compiled early in D cember, of reaching a mark of 19,000 for transit or city ty buses, 5,000 of the intercity type, 850 trolley buses and abc 17,000 school buses. These figures indicate 1947 as the larg bus production year in the history of the industry. Manufact ers also predicted an all-time record in the production of mot trucks. As the year drew to a close truck production for t year was estimated at 1,500,000 vehicles. This compares wi 805,260 for 1942, 667,150 for 1943; 749,488 for 1944; 668,5 for 1945; 940,553 for 1946.

New production records were also made in tires. The yea production of tires was estimated in December to be in exce of 101,000,000. Of these it was estimated that 78,000,000 we for passenger cars; 18,000,000 for trucks and buses; 5,000,0 for farm units. The 1,100,000 ton consumption of rubber by t industry in 1947 compares with 1,034,000 in 1946, the previo record. Of the 1947 figure of rubber consumption about 74 went into tires. Consumption in 1947 was about 50–50 natur and synthetic.

**City and Intercity Bus Operations.**—City bus compani as well as city-suburban and intercity short haul or suburba carriers found it increasingly difficult to keep the cost of servi within the limits of operating revenue. Traffic declined to son extent, but even with higher fares the revenue from operati was not enough for comfort, as it was too close to the cost service. As an offset to these higher costs the tendency amon city and city-suburban companies was to seek fare increase This was particularly true among companies both private owned and city-operated in the larger cities. Among the fir were the municipally-owned carriers in Detroit, San Francisc Cleveland and Chicago. In all instances the need was par mount to adjust fares and not to discourage riding. In short th companies were called upon to operate as economically as poss ble, but at the same time to do so in a manner that would kee the service attractive to the consumer. In general the same fa tors that affected the city companies governed the outlook of th intercity carriers in the problems they faced, but the intercit carriers were in a much better position to fit their service passenger demand than were the local types of carriers. Mor over, the intercity carriers benefitted in passenger appeal by th spread between their rates and the rates of the competing carr ers. Long-haul intercity companies enjoyed a better profit pos tion than either of the two groups of local carriers that wer asking for fare increases. During the year the Interstate Con merce commission initiated an inquiry on its own motion int the basis of rates charged by the interstate motor bus carrier Regional hearings were held in Boston, Seattle, San Francisc and Atlanta. Other hearings were to be held in the early part o 1948.

**Truck Facts.**—Like the bus industry, the truck industry fel the impact of higher costs and higher wages with the result tha the operating ratio and the expenditure relationship of expense to gross revenue of Class I motor carriers of property, all types for the year 1946, based on Interstate Commerce commissio figures, was 96.1% and only three and nine-tenths cents of ne revenue out of every dollar of gross revenue was left. Afte

38 the operating ratios were 95.1 for 1939; 95.6 for 1940; .1 for 1941; 94.2 for 1942; 96.2 for 1943; 97.2 for 1944; 99.3 1945. The figures of truck registration by states, including vate and for-hire trucks for three years, were 1943, 4,480,176; 44, 4,513,340; and 1946, 4,834,742. It was estimated that dur- 1947 trucks were giving employment to 5,500,000 men and at there were then 24,000 commercial fleets of 8 trucks or ore, with some 4,000 companies hauling furniture alone. Farm- owned more than 2,000,000 trucks whereas at the beginning World War I there were fewer than 350,000 trucks in the ited States. The American Trucking association reporting in ov. 1947 pointed out that truck loadings had reached a record gh in the first nine months. The increased pressure of mount- costs led to a consideration of rate boost proposals by motor rrier members of at least nine motor tariff bureaus.

**School Bus Service.**—Approximately 82,000 buses were used ily to transport children to and from their schools during the ar 1947. Research revealed that all states had adopted in me measure the standards recommended by the National hool Bus conference and incorporated them into the state law. the nation-wide automobile accident toll rose throughout e year, greater emphasis was placed on the training of school s drivers and the necessity for correct maintenance procedure existing vehicles. Several states continued experiments with hool children as drivers and, on the whole, found them to be fer than adult drivers. Almost all states were in need of new hool buses and if the demand were fulfilled, the nation should e a complete replacement fleet of school buses within the next ve years.

**Taxes and Road Building.**—Eighteen states adopted consti- tional amendments to assure that motor vehicle user taxes are plied exclusively for road purposes and a number of other ates took initial steps toward this same end. In still other ates these funds were dedicated to highways by statute. The ct remained, however, that many states still practiced what was nerally known as diversion of their motor vehicle tax revenue. s for road building 32% of postwar federal-aid highway funds, portioned to the states under the 1944 federal-aid act, were nder contract as of Oct. 1, 1947—24 months after the time the rst funds were made available to the states. The dollar amount f contracts awarded was $471,000,000 federal funds for a total st of $942,000,000 of construction after dollar matching by e states. Of this amount, projects completed accounted for 118,000,000 in federal funds, or 8% of the apportionment to e states. The total construction cost was $236,000,000. Also cluded in the total contracts awarded for projects actually nder construction was $304,000,000 in federal funds with a tal cost of $611,000,000. To counteract spiralling prices, the ate highway departments and Public Roads administration dopted a policy which resulted in the rejection during 1946 of ids for work estimated to cost $141,000,000, or about 22% f all bids taken. During 1947 an attempt was made to hold e price level and highway costs did not advance much beyond e 1946 level.

Except for gasoline tax increases in 8 states the industry fared ell at the hands of the 44 state legislatures in session early in e year. Size and weight limitations were increased in a num- er of states. In others new legislation provided broader au- ority in the making of reciprocal agreements, while changes, ostly of a minor or clarifying nature, were made in the regula- ry laws of several other states. Encouragement for the future f transportation by truck and bus was found in the co-opera- ve efforts being made jointly by groups of highway users and ublic officials. A constructive move was the appointment of a int Committee on Sizes and Weights of Motor Vehicles by the otor Transportation committee of the American Association of State Highway Officials and several national organizations representing the users and manufacturers of motor vehicles and motor vehicle equipment.

**Substitutions of Service.**—One of the questions asked frequently is the extent to which buses and the trolley buses have replaced streetcars, particularly in city service. The vast system of interurban electric railway lines has passed out of the picture, supplanted by buses. Even in the large cities buses continued to make inroads on the streetcar. Streetcars of the so-called P.C.C. (Presidents' Conference Committee) type, the latest word in vehicles of this kind, were being operated in Brooklyn, Chicago, Pittsburgh, Boston, Philadelphia, Washington and Baltimore to mention a few cities, but in each of them the programs for improvements in the future contemplated a greater and ever greater use of buses. Among the largest cities that were either all-bus or all-bus and trolley bus were Houston, Seattle, San Antonio, Rochester, Akron, Memphis, Syracuse, Worcester, Fort Worth, Jacksonville, Nashville and Hartford. A significant development of the year was the full conversion of the Third Avenue system in the borough of Manhattan, N.Y., to bus operation, thus completing the elimination of streetcars from the streets of that borough. In the period from 1931–40, 14 buses or trolley buses were purchased for city service for every streetcar.

(*See* also AUTOMOBILE INDUSTRY; MUNITIONS OF WAR.)

(C. W. S.)

**Canada.**—The value of road building and highway maintenance projects totalled about $187,000,000 during 1947. The nine provincial highway departments spent about $150,000,000 while the federal government and various municipal governments made up the balance. An interesting precedent in highway construction were the negotiations for Canada to have a 99-year lease on 15 mi. of U.S. territory in the state of Washington to enable British Columbia to eliminate 53 mi. of mountain-climbing roads over two summits and save $2,000,000 in construction costs. The by-pass was to be part of the southern B.C. transprovincial highway system. The provinces continued to urge federal aid for the improvement of the various provincial sections of the so-called Trans-Canada highway.

Trucking companies faced increasing costs during 1947. An arbitration board granted highway transport employees in the area between Windsor, Ottawa and Montreal, wage increases averaging 27%. The 1,050-member Automotive Transport association of Ontario thereupon applied to the prices board for a 20% increase in the highway freight rate on less-than-truckload traffic. Competition between Canadian railways and the trucking industry continued, and the annual meeting of the A.T.A. charged that "railway labor is making common cause with railway management in a mass attack on the trucking industry."

Year-end boosts in the cost of gasoline further increased the difficulties of the truckers. (C. CY.)

**Great Britain.**—Throughout 1947 nationalization was the major issue for the British road transport industry and coloured all developments. The Transport bill, which became an act in August and would come into operation on Jan. 1, 1948, provided for eventual nationalization of trucking businesses which operated more than 50% of traffic over a radius of more than 25 mi. from their depot. The industry protested that compensation terms had been fixed at a low figure.

On the passenger side, operators of regular bus lines also had difficulties to face. They were not to be nationalized out of hand, but in areas where the minister of transport might consider it necessary, a co-ordination scheme could be put into force. The clauses in the act were vague and it was by no means certain how they would be applied. The government contended that there could be a great deal more co-ordination between one bus undertaking and another and also between bus services and the railways. Those face to face with the practical difficulties of operation were less sure. They contended that co-ordination, as far as practicable, between the owners of about one-half the buses in Britain and the railways had been assured by the close liaison existing between the railways and the bus companies in which they were financially interested.

Co-ordination between rival operators on the road had been assured in the past by self-interest or by rulings of the area traffic commissioners established under the Road Traffic act, 1930; no doubt more effective measures could be evolved in the course of time, but here again there were many instances where apparent anomalies worked to the public benefit. Thus, to and from the outskirts of many large cities the company-operated services charged a minimum fare higher than that on the vehicles of the municipal bus service running over the same road. For the passenger this had the advantage of keeping the short riders off the long-distance buses and of increasing their speed to the perimeter of the urban area. As indicated, a financial interest was held in many bus companies by the railways, with from 33% to 49% of the ordinary share capital and this would, on Jan. 1, 1948, automatically give the nationalized railway executive of the British transport commission considerable power in the bus business.

For some time in the early part of 1947 some of the bus-owning groups conducted a considerable advertising campaign against nationalization.

Haulers had everything to gain by postponement of nationalization and through the employers' organization, the Road Haulage association, conducted a vigorous campaign—"Hands Off Road Transport." When the act became an accomplished fact, however, they were inclined to accept the situation and to try and make as good a job as possible of the nation's long-distance road transport under the new order. In the case of haulage concerns, it was not certain that, except for the railway-owned haulers, which included the world-famous firms of Pickford and Carter Paterson, the vesting date would be Jan. 1, 1948, since the government concern would have to examine the activities of some 48,000 haulers with 141,000 vehicles. The road transport executive was not yet appointed at the end of December. It was roughly estimated that perhaps not more than 30,000 vehicles would be involved in nationalization, just over the number in the 60-mi. radius wartime scheme. In addition, there were 306,000 goods-carrying vehicles (according to a government return issued in 1946) in Great Britain owned by 149,192 traders and used for the conveyance of the traders' own goods. These were unaffected by the act.

All owners of motor vehicles continued to experience difficulty in obtaining spare parts, tires, and, of course, new vehicles. These difficulties were accentuated by the fuel crisis early in the year, which held up spares production; by the shortage of dollars for carbon black used in rubber tire manufacture; and by the increasing volume of British-built commercial vehicles allocated to export markets. Bus owners, with 55,000 buses and coaches, many more than ten years old, were also affected by the bottlenecks in the body-building industry, induced by shortages of material and labour, and by the lack, from time to time, of window glass and paint, which were largely devoted to housing purposes. Of 3,000 buses of postwar design on order by the London Passenger Transport board, only 80 had been delivered by Oct. 1947, and another 80 were expected at the end of the year. By mass production methods output would be stepped up to 100 a month by the end of 1948. Shortage of buses did not prevent abandonment of further street railway undertakings, the most notable being those of Bolton and Salford. There were in 1947 under 6,000 tramcars on British street railways. Fewer than a dozen British cities would retain streetcars in the f and some of those that two years ago intended to continu means of transport decided on conversion to the bus or t coach.

With 2,622,521 motor vehicles in 1939 running on 180,52 of road Great Britain had 14.5 vehicles per mi. of road- greatest density in the world. Big schemes for road imp ments, motorways and the alleviation of traffic congestio such projects as the Severn bridge were halted by the inte cation of the austerity drive announced in Oct. 1947. The ish road motor transport industry, together with that of maintenance, continued to employ something like 1,25 people.

(*See* also ACCIDENTS; RAILROADS.) (C. F. K

**Motor Vehicles:** *see* ACCIDENTS; AUTOMOBILE INDUS ELECTRIC TRANSPORTATION; FEDERAL BUREAU OF INVEST TION; MOTOR TRANSPORTATION.

**Mountbatten, Philip:** *see* EDINBURGH, DUKE OF.

## Mountbatten of Burma, Louis (Francis Albe Victor Nicholas) Mountbatten,

1st EARL (19 ), the sec son of admiral of the fleet the marquess of Milford Haven, born at Frogmore House, Windsor, on June 25, 1900, and cated at Osborne, Dartmouth and Christ's college, Cambri He entered the royal navy in 1913, served in World War H.M.S. "Lion" and H.M.S. "Queen Elizabeth," and at the break of World War II commanded the 5th destroyer flot Appointed to H.M.S. "Illustrious" 1941; chief of comb operations, with the acting ranks of vice-admiral, lieute general and air marshal, 1942; supreme allied commander So east Asia, 1943; he successfully conducted the campaign aga the Japanese which culminated in the recapture of Burma.

In Dec. 1946 it was announced that he had been appoi rear admiral commanding first cruiser squadron, Mediterra fleet. In the house of commons on Feb. 20, 1947, Clement At stated that the king approved his appointment as viceroy India to succeed Viscount Wavell. The terms of his appo ment stated that Lord Mountbatten of Burma was "entrus with the task of transferring to Indian hands the responsibi for the government of British India in a manner that will ensure the future happiness and prosperity of India." transfer of power to the two new dominions of India and P istan took place on Aug. 15, and Viscount Mountbatten Burma became governor-general of the dominion of India.

For his service in World War II he was created a viscount 1946, and in Aug. 1947 was created an earl in recognition of viceroyalty.

He was known as Prince Louis Francis of Battenberg u 1917, when his father relinquished his title and assumed surname of Mountbatten.

## Mount Holyoke College.

This institution for the hig education of women in libe arts, founded in 1837 by Mary Lyon, is situated at South Ha ley, Mass. The campus covers nearly 600 ac. with more th 70 buildings. Registration figures for the 1946–47 session cluded 1,133 undergraduates and 58 graduate students, rep senting 42 states and territories and 12 foreign countries. (F statistics of endowment, enrolment, faculty, library volum etc., *see* UNIVERSITIES AND COLLEGES.) (R. G. HA.)

**Mozambique:** *see* PORTUGUESE COLONIAL EMPIRE.

**Mules:** *see* HORSES.

**unicipal Government.** Federal activities touched municipal interests at many points ring 1947. The cities continued to resist efforts at the state vel to channel all federal-aid airport construction funds through e states. The problem of intergovernmental fiscal relations as much to the fore, with a senate subcommittee designated study the situation and work out an equitable reallocation of x resources between the respective governmental levels. A mmittee of state governors conferred with subcommittees of e congressional revenue committees on the same question. The nerican Municipal association in turn urged the development a federal-state-local intergovernmental fiscal policy, as well the removal of state restrictions on local revenue programs, id the balancing of state grants-in-aid with increased local taxg powers. A major disappointment in the federal-local picture as the failure of congress to grant a proposed additional $50,-0,000 for postwar planning advances to local governments, though inflationary prices in any event presented a major stacle to public works planning and construction.

**Unified Municipal Policy.**—An important step toward development of a genuine national municipal policy was taken at e annual convention of the American Municipal association, hich broadened its constitution so as to make it an association cities and city officials instead of a federation of state leagues municipalities, as it had formerly been. A new research and formation service, the American Municipal service, was proided within the A.M.A. framework; and the American Assoation of Municipal Legislators, consisting of elected mayors, ouncilmen, aldermen, and commissioners was organized as a omponent part of the A.M.A.

**Personnel.**—The number of nonschool city employees connued the upward trend which was resumed in 1945, the last ear of World War II, and the totals in 1946–47 were well bove the prewar years of 1940–41. Nonschool city pay rolls ontinued the rapid rise which was evidenced particularly in 946. Totals for nonschool city employees and pay rolls for the revious eight years were as follows:

Table I.—*Total Nonschool City Employees and Pay Rolls, 1940–47*

| ear and Month | | Employees (In Thousands) | Pay rolls (In Millions) |
|---|---|---|---|
| 940 | July | 923 | $108.2 |
| 941 | July | 934 | 110.6 |
| 942 | July | 911 | 113.5 |
| 943 | July | 882 | 119.4 |
| 944 | July | 882 | 123.9 |
| 945 | July | 890 | 131.0 |
| 946 | July | 968 | 153.6 |
| 947 | April* | 987 | 170.0 |

*Latest Available

In 1946, 85 cities shortened the work week of some or all of heir employees, and this trend continued in 1947, adding large ums to municipal budgets for the hiring of additional employees. Pay increases to city employees in keeping with rising livng costs were a major element of most city budgets; 17 cities utomatically provide such rises on the basis of the bureau of abour statistics' consumers' price index or comparable indexes.

As a result of the nation-wide epidemic of strikes of municiaal employees in 1946, 12 states enacted legislation in 1947 outawing or restricting strikes by some or all public employees. new labour-management committee was set up by Boston, vhile St. Louis temporarily discontinued its committee. Louisille, Toledo and New York also had active labour-management rganizations, and several other cities were considering estabishing such groups.

A major development in the field of public personnel trainng was the New York city program initiated by Mayor William 'Dwyer, under which members of the city's new bureau of nalysis were being given an intensive 12 weeks' training course n administrative management under the supervision of City college as a first step in the complete modernization of the city's administrative structure.

**Municipal Finance.**—The pattern of postwar municipal finances which emerged in 1946 continued largely unchanged throughout 1947. Inflationary prices intensified the struggle to adjust municipal budgets to conditions that were getting rapidly out-of-hand. Rising relief rolls and the greatly increased cost of running public institutions such as hospitals, with their special food requirements, were new factors to be considered, along with the phenomenal rises in city pay roll, general commodity, and construction costs. In New York an additional $161,000,000 was being sought for the city's 1948 budget, which had passed the $1,000,000,000 mark by $31,000,000 in fiscal 1947. Baltimore's proposed 1948 budget of $83,000,000 represented an increase of almost $13,000,000 over 1947. San Francisco's city, county and school costs, exclusive of public service enterprises, in the 4 year period 1943–44 to 1947–48 increased over $31,-000,000.

Choice of a remedy lay between increased state aid, in the form either of direct grants or shared taxes, or a grant of new taxing power to local governments to supplement the relatively declining local property tax. According to the Tax institute, New York city, the trend in the direction of greatly increased state aid was tending to slow up, and a new trend in the form of new local taxes authorized by state legislatures was distinctly discernible in 1946–47. Outstanding among these new state grants of local taxing powers were the Pennsylvania legislation, conferring on local taxing bodies the right to adopt practically any tax or licence fee not levied by the state, and the New York state provisions empowering counties, outside New York city, to impose any of a list of six nonproperty taxes, the proceeds to be used for educational purposes only, and empowering cities of 100,000 population or over, other than New York, to impose any of the taxes granted to the counties but not used by them, plus two additional taxes, the proceeds in both cases to be used for any municipal purpose whatever. New York city was additionally empowered to increase its local revenues an estimated $24,300,000 annually through the imposition of 5 specified new taxes.

Service charges for municipal services, both within and beyond the city limits, were increasingly utilized by the cities in 1947. With the addition of Nevada, the number of states sharing some portion of their tax revenues with the local governments reached 44; New York returned over $87,000,000, Massachusetts about $45,000,000, Ohio $41,500,000, and New Jersey $41,100,000.

Year-end median tax delinquencies of selected cities with populations of 50,000 or more reached a low of 3.2% of the year's levy for 1946—the latest data available—compared with 3.3% for 1945 and a high of 26.35% in 1933. Total tax collections however appeared to have reached their peak, with median ratios to the year's levy of current plus back tax collections of 101.2% in 1943, 100.8% in 1945 and 100.3% in 1946. Property tax rates showed a slight decline of $.05 per $1,000 of assessed valuation. Assessed valuations, on the other hand, increased on an average per capita basis an unprecedented 15.7% over the preceding year. A survey of over 49 major population centres showed increased assessed valuations in every one, and a total increase of over $3,000,000,000, attributable 57% to new construction and 43% to a higher level of value.

According to the *Bond Buyer,* new state and municipal financing for the year amounted to the unprecedented total of $2,351,-181,262, compared with $1,203,557,909 in 1946, and the previous all-time high of $1,500,000,000 for 1940. In November a total of $1,115,740,121 of new bond issues, submitted chiefly at the general election, was approved, the highest for any month since the record was first compiled in 1926; approvals for the previous November (1946) totalled $1,043,376,000, and for October 1947, $59,533,000. Rejected proposals totalled $43,000,000, compared with $89,000,000 rejected in Nov. 1946. State funds, mostly for veterans' aid, accounted for $835,000,000 of the approved total, while local approvals amounted to about $280,000,000, an increase of more than 35% over the $206,000,000 approved in 1946. This marked a resumption in local public works construction which had been deferred in accordance with official and unofficial requests earlier in the year. Municipal bond interest costs, according to the *Bond Buyer's* index for 20 municipal bonds, rose to 2.35% on Dec. 31, 1947, the highest since April 1942, when the average was 2.38%. For the first time after 1941, there was a slight increase in the total volume of local debt. Gross local debt outstanding as of June 30, 1947, amounted to $13,847,000,000, compared with $13,564,000,000 in 1946, an increase of 2%. On an index basis of 1940=100, the annual volume of local debt for each year from 1941 through 1947 was: 100.6, 98.6, 94.4, 87.9, 84.7, 81.1, 82.8. The indebtedness of cities, as distinguished from other local governmental units, constitutes roughly about 60% of all local debt; in 1946, for instance, it amounted to $8,101,000,000 out of a total of $13,564,000,000 for all local governments.

**Council-Manager Cities.**—A total of approximately 70 cities in the U.S. adopted council-manager government in 1947, compared with the record high of 75 in 1946, bringing the grand total—exclusive of counties—to 747. Hartford, Conn.; Worcester, Mass.; and Richmond, Va., were among the larger cities voting adoptions, subject in the case of Richmond to approval by the state legislature. Houston, Tex. and three other cities voted to abandon the plan.

**Proportional Representation.**—Ten referenda on proportional representation were voted on at the Nov. 1947 elections. Proportional representation was reaffirmed for the third time in Cincinnati—though for the first time at a general election—and rejected in Pittsfield and Fitchburg, Mass. Four Massachusetts cities—Worcester, Quincy, Medford and Revere—adopted proportional representation along with the council-manager plan, while Boulder, Colo., New York city and Long Beach, N.Y., repealed it. The major defeat in New York city by a vote of 935,276 to 586,151 was attributed largely to the election to the city council of two representatives each of the Communist and American Labor parties at the last city election in 1945.

(A. M. Ds.; L. Gu.)

**Great Britain.**—The Town and Country Planning act which passed into law on Aug. 6, 1947, provided for the transfer of planning powers from county district councils to county councils who, with the county borough councils, were to be the future planning authorities. Under the Police act of 1946 all separate noncounty borough police forces merged into the county forces on April 1, 1947, so that county and county borough councils became the future police authorities. Fire brigades, which were, throughout the country, amalgamated in the national fire service in 1941 were, under the Fire Services act, 1947, to go back to local authority administration, not, as before the war, to the county district and borough councils, but to county and county borough councils. The trend of the year was, therefore, to enlarge the functions of county councils at the expense of the district councils and noncounty borough councils; and preparatory work was done on questions of management, finance and transfers of personnel.

A departmental committee on greater London water supply was appointed before which the Metropolitan Water board urged that the area of administration for London water supply (about 570 sq.mi.) should be enlarged to 2,700 sq.mi., for technical efficiency.

An outstanding event was the publication of the first a report of the Local Government Boundary commission 1946). The commission investigated a number of areas w view to possible adjustment of boundaries, amalgamati areas, or alterations in the status of local authorities. Th port made no definite suggestions for adjustments, but a nu of interesting preliminary considerations were outlined. proposals of the commission caused considerable stir i areas most likely to be affected, particularly in south Lanca —a densely populated area with a number of inter-re problems somewhat akin to those of Greater London. The mission's report contained the suggestion that a Greater chester authority, or county council, might be formed. No authority ever consents willingly to surrender its power t other local authority, which explains why south Lancashire so stirred.

The impending transfer of hospital services to the brought into question the financial relations between central local government. The Local Government act, 1929, conta a formula for the distribution of government block grant local authorities. This formula was never satisfactory, bu alternative was difficult to devise. The relief of local aut ties from the cost of hospital services called for revision o amounts and distribution of government grants. Rateable v was traditionally used as one of the factors in settling the sh of respective local authorities, but this factor was found uns factory by reason of the varying standards of valuation in areas. Accordingly, the government proposed that the wor making valuations for rating should be performed by the ernment itself over the whole country. The Local Governm bill was introduced in October to deal with these various ters. It also contained provisions to authorize payment to m bers of local authorities for travelling, subsistence and los earnings while on official business, and to empower local auth ties to develop their public relations work.

Throughout 1947, shortage of administrative staff, hos staff, manual workers and materials caused difficulties. cuts in the early part of the year and increasing demands the diversion of man-power to productive industry occasio exhaustive and trenchant investigations by each local autho into its own staff needs. The pre-existing shortage of staff not however make possible any spectacular saving of m power units.

The important work of housing which was gathering mon tum during 1946 suffered a severe set-back in the unusually clement conditions of the winter of 1946–47. The econo crisis which became clearly apparent in the summer of 1947 the minister of health to announce that no new contracts housing work could be approved for the time being.

Much thought was given to the recommendations of the C tis committee on the care of children deprived of a norm home life, and to the problem of the care of the aged. National Assistance bill was introduced at the end of Octo to abolish the poor law, and to make the central governm responsible for "out-relief," leaving local authorities the d of providing institutional relief and a general welfare service the aged and incapacitated.

The National Association of Parish Councils was formed April. Parish councils were at one time regarded as an expe ment which had failed. They gradually emerged after 19 into prominence with the growing interest taken by the count dweller in local government affairs. Associations had long be in existence for other types of local authorities. That for par councils completed the series.

For the municipal elections in England and Wales held Nov. 1, in which one-third of the members is elected each ye

Table II.—*Municipal Elections, England and Wales, Nov. 1947*

| | Total candidates | Elected | Not elected | Gains | Losses |
|---|---|---|---|---|---|
| ervatives . . . . . . . | 1,737 | 1,269 | 468 | 643 | 18 |
| ur . . . . . . . . . . | 2,600 | 824 | 1,776 | 43 | 695 |
| als. . . . . . . . . . | 458 | 140 | 318 | 46 | 47 |
| nunists . . . . . . . . | 194 | — | 194 | nil | 9 |
| pendents . . . . . . . | 1,675 | 1,059 | 616 | 172 | 135 |

iereas in the metropolitan boroughs the entire council is cted every three years), the analysis of results in 388 oughs is given in Table II.

The striking features were a trend of local politics away from bour, which lost heavily, and the exceptionally heavy poll, rywhere 40% to 50%, in some places higher. Labour lost trol of 24 councils, gained 1; several were now equally ided. (*See* also AIRPORTS AND FLYING FIELDS; HOUSING.)

(W. E. J.)

## unitions of War.

**Army.**—The year 1947 was one of research and experimentation in muni- ns. This extended into many lines—planes were developed, nodeled, or redesigned to attain greater speed and manoeu- bility; rocket testing was carried on extensively at White nds, N.M.; chemical warfare agents were tested at Edgewood enal in Maryland; signal corps apparatus was subjected to d trials in New Jersey and elsewhere.

*Explosives.*—A new method was found to manufacture nitro- thane, an explosive more powerful than T.N.T., yet safer handle; it involved reacting methane, commonly known as rsh gas, with nitric acid under a pressure of 100 pounds r square inch.

*Liquid Oxygen.*—Through the combined efforts of the army forces, the national bureau of standards, and the Bendix iation corporation, a simplified and practical liquid oxygen nverter was developed. Known as a heat-transfer type, this nverter met all requirements for breathing purposes during ing operations.

*Lubricants.*—A new type of synthetic nonpetroleum motor to last the lifetime of an automobile or aeroplane engine thout having to be changed was developed. Made from na- ral gas and carbon and hydrogen compounds, it resembled dinary motor oil in appearance and feel, was wax-free, flowed eely at −30° F. and did not thin out at high temperatures.

*Mortars.*—Two new types were tested, an 81-mm. with a ecial mount and an old type 16-mm. which was adapted as one-man weapon.

*Optiphone.*—A new device to provide telephonic communica- on over a narrow beam of white or dark red light made pos- ble single-channel, two-way break-in speech communication. ne complete unit weighed 145 lb. and had an optical range to 4 mi. during daylight and up to 7 mi. at night with dark d filter.

*Production.*—To be prepared to meet a possible production nergency, Operation "Janmat" (joint army and navy machine ols) rounded up tools from surpluses and from production nes where they were least needed. The corps of engineers vestigated extensively to determine the feasibility and cost constructing and operating underground plants and storage tes. Two types of underground plant sites were considered: st, existing mines, such as gypsum, copper, lead, zinc, lime- one, marble, sandstone, salt; and, secondly, underground ambers excavated to suit the requirements of particular ant or storage facilities involved.

*Quartermaster Items.*—Troxane, a new heat tablet, was oroughly tested in Alaska and in the Aleutians. It burns thout odour or poisonous gases and produces a steady, blue me not easily blown out by the wind. A new water-purifying blet, using iodine instead of chlorine, made drinking water safe and was less objectionable in taste and colour. A new ration, increasing calories from 3,331 to 3,800, replaced C and K rations. A new type of suit with fabric of 3-oz. nylon rather than the former 8-oz. twill was manufactured for Task Force "Furnace," operating in the Arizona desert.

*Radar.*—The signal corps brought out a lightweight radar set, capable of being transported by plane and set up in forward areas inaccessible to larger detector equipment. It was officially designated as AN/TPS-3. Packed, the set weighed 1,340 lb., required one operator and one maintenance man, withstood temperatures between −40° F. and 140° F., and was unaffected by humidity up to 100%. With auxiliary equipment, it could identify aircraft within its range as friend or foe. A microwave spectroscope was also developed for the analysis of chemical substances, using radar waves from 1.2 cm. to 1.6 cm. in length. This device could identify the more complicated molecules, such as hydrocarbons, without the laborious chemical processes involved in breaking them down and analyzing their various components.

Through collaborative effort with the national bureau of standards there was developed a microtube only a trifle larger than a grain of rice.

*Ribbon Parachute.*—A double ribbon parachute, one acting as a pilot, successfully lowered a 75-mm. howitzer weighing 2,240 lb. from a Fairchild C-82 Packet plane.

*Rifle.*—The M 1 rifle was modified to fire either 8 shots fully automatic or 20 shots in rounds.

*Teleran.*—The Radio Corporation of America and the army air forces co-operated in important laboratory advances in teleran, the revolutionary system of television-radar air navigation and traffic control. Using principles and equipment developed during World War II for radar and airborne television, teleran was devised to provide the pilot with an aerial road map which combined in a single clear picture on his instrument panel all the traffic, route, weather and special information needed. In this development, four new technical advances were demonstrated: (1) a storage orthicon television pick-up tube, (2) a picture tube employing high intensity phosphors for greater image brilliance, (3) an optical map-mixing technique which improved teleran image and simplified insertion of additional information when required and (4) a time multiplexing system which provided for simultaneous transmission of images representing different altitude layers and selective reception of the proper image by planes in any of these layers.

*Trucks.*—A mammoth 60-ton, 1,000-h.p., 45-m.p.h. combination truck dynamometer was manufactured to test the tractive effort of large U.S. army wheeled and tracked combat vehicles over various types of terrain. It rated a maximum drawbar pull of 60,000 lb. at a speed as low as 2 m.p.h. (R. S. T.)

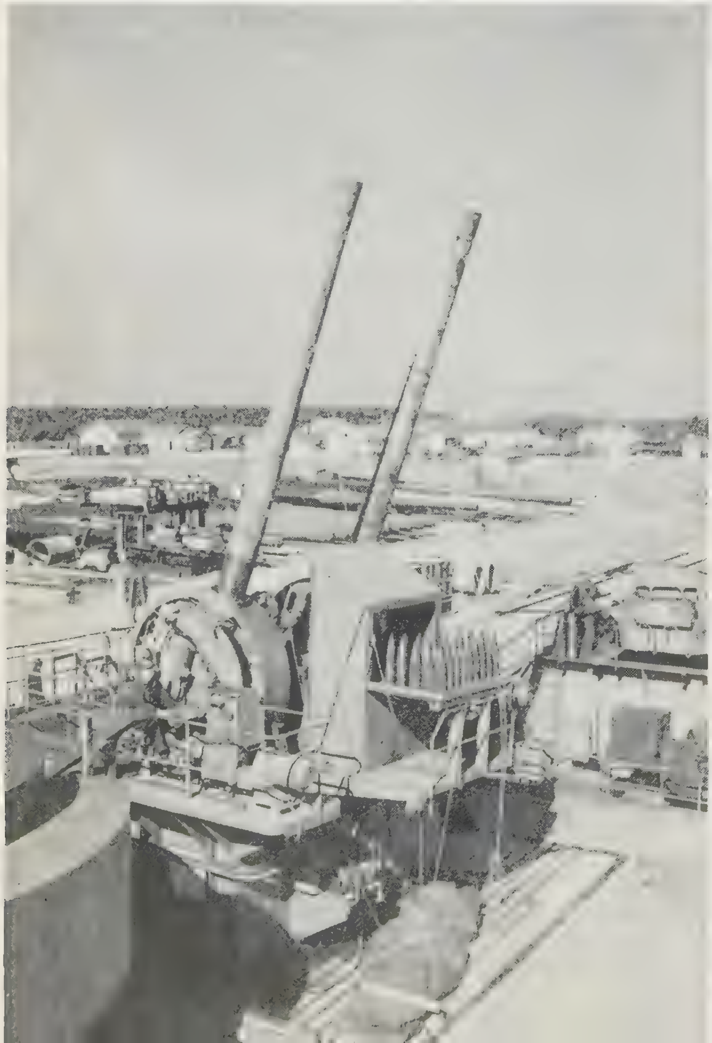
**Navy.**—Production of new U.S. navy munitions was held to small quantities for experimental purposes or for equipping the few new ships under construction. The new 6-in. and 8-in. mounts were installed in new light and heavy cruisers, although none of these ships reached completion during 1947.

The greatest stress was laid on research and development under programs carefully co-ordinated by the Joint Research and Development board with Vannevar Bush as chairman.

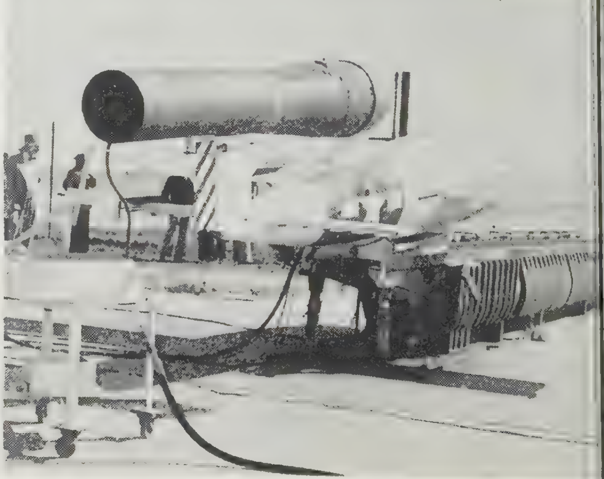
Great progress was made in the field of guided missiles (*see* below). A number of programs showing some duplication of end results were pursued in recognition of the need for parallel attack on the exceedingly complex problems. Among subsonic missiles there were actual tests under conditions approximating service of the more successful developments. One test of a supersonic missile involved the launching of a German V-2 rocket from the flight deck of the large aircraft carrier "Midway." Although the launching was successful, the subsequent

Above: NEW AUTOMATIC 3-IN. 50-calibre anti-aircraft gun being tested at Dahlgren, Va., in the presence of Secretary of the Navy Forrestal in March 1947

Below: SIX-INCH dual-purpose anti-aircraft guns, designed for rapid fire close-in defense on light cruisers, developed for the U.S. navy at Dahlgren, Va., in 1947



Below, IMPROVED VERSION of the German V-1 buzz bomb, reac launching at a press demonstration staged in March 1947 at the Naval Air Missile Test centre, Point Mugu, Calif.



Below: THE KDD-1, a jet-powered aircraft target drone being catap during demonstration tests in April 1947, at the U.S. navy's g missile centre, Point Mugu, Calif.

nt of the missile was not satisfactory, for reasons not con- ted with the launching conditions.

The close co-operation of the U.S. navy with science and in- try was continued, showing its most striking results in the nblebee supersonic guided missile program undertaken by Applied Physics laboratory of Johns Hopkins university, of timore, Md., for the bureau of ordnance. Building on the k of the previous years, test flights were made with most en- raging results in the flight of ram-jets and in the guided nt of subsonic test vehicles.

Recognizing the problems posed by increased speeds of air- ne targets, special emphasis was placed on automatic or rly automatic fire-control devices for both aircraft and anti- craft uses. Predominately electronic in character, these equip- nts—even with the rigorous application of the techniques of iature tubes and circuits—became enormously complicated difficult to mount in available spaces in planes or ships and maintain operable with service personnel.

nvestigations in underwater weapons, notably torpedoes, re pointed at increasing range, speed and accuracy, as well as proving wakeless characteristics of submarine-launched tor- does, and the water-entry abilities of aircraft torpedoes. The ilities at Morris dam in the Los Angeles metropolitan water tem were operated as a branch of the Naval Ordnance Test tion, Inyokern, Calif., to conduct tests of water entry—for h torpedoes and bombs—under controlled conditions with a ximum of recorded data. (G. F. Hy.)

**Air.**—Reliable experts on technical developments in weapons ieved that at least 10 years, and possibly 15 or 20, would be quired to develop and perfect weapons for "push-button" war- e. Not only would it be necessary to spend vast amounts of ney for research and development, but such branches of ap- ed science as aerodynamics, radar, electronics, telemetering, vomechanisms, gyros, computers, thermodynamics, combus- n, metallurgy, propulsion, hydraulics, ballistics, meteorology, nospherics and chemistry all would have to contribute to a ccessful long-range guided missile.

In the United States a team under the over-all direction of National Defense council pressed ahead in the solution of ese numerous problems during 1947. Contracts were awarded dozens of university and industrial laboratories and to many craft, engine and electronics companies.

Indicative of the program's importance was the fact that Guided Missiles" had become Division 1 of the Standard Aero- utical Index being compiled by the Institute of the Aeronauti- l Sciences, under air force contract, with full navy co-opera- on. By the fall of 1947 the second phase of the program was ell under way, and the division was being broken down into a mber of sections such as guidance and control, launching, pro- lsion, etc., with dozens of sub-sections within each.

At least three major lines of activity were being pursued: ) the program for development of a 4,000-mi. intercontinental issile to be powered by a rocket engine or atomic energy at personic speeds; (2) shorter-range guided missiles for use om carriers or converted battleships, or for release from air- aft; (3) improvements in the weapons actually used in World ar II, including faster and more powerful fighters and bomb- s, improved aircraft armament (guns and rockets), better air- rne radio and radar equipment (including proximity fuses and rious homing devices) and more deadly bombs.

During 1947 some progress was made on the long-range ob- ctives, despite the lack of adequate funds. The Joint Research d Development board instituted a "panel on the upper atmos- here" under the committee of geographical sciences, to survey ograms and eliminate duplication of effort, and to recommend ldition or deletion of special projects. Cosmic rays were studied with balloon-borne instruments, with captured V-2 rockets equipped with intricate scientific apparatus recovered by parachute; and with specially equipped B-29s, which made a series of flights between the northern part of the U.S. and the magnetic equator. The navy also announced the development of the Neptune (Glenn Martin Co.), a giant supersonic rocket 45 ft. long, capable of reaching a height of 38 mi. within 75 sec. in its thrust-borne phase, after which it "coasts" straight up for another 197 mi. to a total height of 235 mi., more than twice the height reached by the German V-2s, besides weighing only one-third as much as these war-developed weapons; its alcohol-and-oxygen-burning engine developed 200,000 lb. of thrust. Its first flight was scheduled for mid-summer 1948.

Developments of the shorter-range guided missiles included several ram-jet and rocket-powered supersonic missiles, and the following navy projects: the Lark, with vertical wings for better stability; the Loon, an improved pulse-jet-powered version of the V-1 buzz-bomb, with a speed of 400 m.p.h. and range of better than 200 mi.; Little Joe, a shipboard-launched and Jato (jet-assisted take-off)-rocket-propelled short-range missile, guided by radio against enemy aircraft, with a proximity fuse for automatic explosion in case of near misses; and Kingfisher, a new jet-propelled version of the Bat (used in the late Pacific phase of World War II), which transmitted radar signals to the target, and homed on the radar echoes.

The air force had two very promising projects under development in 1947, a Fairchild XBQ pilotless aircraft missile, and a guided missile at the Ryan factory, described as one of the most compact weapons of its type ever designed, with a built-in "brain." Flight testing of these and similar projects, including advanced tests on the Boeing needle-nosed GAPA (ground-to-air-pilotless-aircraft), was carried on at the Alamogordo Air base, N.M., centre of air force guided missile testing. The most important over-water testing facilities were located at the Naval Air Missile Test centre, Point Mugu, Calif.

In the category of immediate improved weapons the following may be mentioned: New, more powerful and lighter-weight versions of the atom bomb; nonnuclear fission high explosive deeply penetrating bombs tested by B-29s on submarine pens in Europe; the M-3 .50-cal. machine gun for fighters and bombers, firing 1,250 rounds per minute; operational development of the navy's powerful attack planes by Douglas and Martin; increased range of both air force and navy jet fighters; production of the Boeing B-50 fast heavy bomber and the Consolidated Vultee extra long range B-36.

Without neglecting the program for rapid development of turbine-powered commercial transport planes, Britain devoted much effort to advanced military development of guided missiles and rockets, as well as sharply improved interim weapons. The U.S.S.R. developed, with the help of German technicians, jet-propelled fighters, one or two long range bombers, and a greatly improved V-1 type buzz-bomb. (*See* Aviation, Military.) (N. F. S.)

A significant development during 1947 was the crystallization of plans by the British and Australian governments for the new rocket testing range in Australia, and the initiation of large scale civil engineering works in furtherance of the project. Estimates published in Canberra during September forecast an expenditure of £(A)23,000,000 over the next five years.

In Britain a considerable degree of secrecy was maintained regarding progress at the rocket research station at Westcott in Buckinghamshire, but details of a guided projectile designated "Stooge," originally designed as an anti-aircraft weapon, were published. Trials of this weapon were completed at the guided missiles range at Aberporth on Cardigan bay. A series of tests with rocket-propelled model supersonic aircraft was started in

October, aimed at solving the problems anticipated in controlled flight at trans-sonic and supersonic speeds. (*See* also ATOMIC ENERGY; JET PROPULSION; NAVIES OF THE WORLD.)

**Murphy, Robert Daniel** (1894– ), U.S. diplomat, was born on Oct. 28 in Milwaukee, Wis. Entering the foreign service in 1917, he became consul in Paris in 1930 and later counsellor of the embassy. After the collapse of France in 1940, he was assigned to the Pétain government as U.S. chargé d'affaires in Vichy and chief U.S. representative in French North Africa.

Murphy was given a large part of the credit for preparing the groundwork of the Allied invasion of North Africa in Nov. 1942 and for his services in this connection, he was awarded the D.S.M. and raised to the rank of minister to French North Africa.

Although beset by a storm of criticism, Murphy worked steadfastly in early 1943 toward settling the De Gaulle-Giraud dispute, his aim being establishment of a French government that the U.S. would recognize. Later that year Murphy was appointed delegate to the Mediterranean Advisory commission with rank of ambassador.

In Aug. 1944, he became political adviser to Gen. Dwight D. Eisenhower with the task of helping to set up the machinery for Allied military government of the reich.

In 1946–47, Murphy was deputy secretary of state to both James F. Byrnes and George C. Marshall, in which post he conferred with the deputies of the other Big Four powers to handle the preparatory work for the quarterly conferences of the foreign ministers. On Feb. 21, 1947, he was also appointed political adviser to Gen. Lucius D. Clay, military governor of the U.S. zone of the reich.

**Murray, Philip** (1886– ), U.S. labour leader. A native of Scotland, he was born in Blantyre on May 25 and emigrated to the United States in 1902. Naturalized in 1911, he became a member of the international board of the United Mine Workers of America the next year, president of the union's fifth district in 1916, and international vice-president in 1920. Murray succeeded John L. Lewis as president of the Congress of Industrial Organizations (C.I.O.) on Nov. 22, 1940, when Lewis fulfilled his pledge to quit if Roosevelt were reelected. But Murray did not follow Lewis in his bitter opposition to Roosevelt's foreign policy. A split developed in May 1942, when Lewis ousted Murray as U.M.W.A. vice-president. Murray fought back, and the C.I.O. went along with him; Lewis and the mine workers walked out. During World War II Murray fought to maintain the no-strike policy, to use manpower more efficiently, to streamline the War Labor board, to stabilize prices, etc. Immediately following conclusion of World War II, the C.I.O., under Murray's guidance, launched its campaign for continued high wages and better working conditions. On Jan. 23, 1946, two days after the steelworkers went out on strike, Murray launched a sharp attack on corporation tax laws, charging that if the steel industry did not operate another day in 1946, it would regain $149,000,000 in tax rebates, representing a sum 29% above the level of the industry's prewar earnings.

In 1947, Murray continued his attacks on "big business," but sternly forbade his steelworkers union to strike during the life of the two-year agreements reached with the steel industry in April. He urged the A.F. of L. on Oct. 13 to join the C.I.O. in a united political front to defeat supporters of the Taft-Hartley law in the 1948 national elections, but his appeal was rejected by Pres. William Green. On Dec. 18, Murray was named by Pres. Harry S. Truman to membership on the 12-man national labour-management panel.

**Museums.** For the museums of the United States, 1947 marked by important co-operative projects preparations for expansion as well as by significant activiti their normal programs of research and exhibition.

In New York the Metropolitan Museum of Art, the Mus of Modern Art and the Whitney Museum of American agreed to co-ordinate their work for ten years. The Metro tan museum, for example, undertook to purchase for fu transfer selected older paintings and sculptures from the seum of Modern Art, providing the latter with greater m and freedom for buying current art. The American Museu Natural History and the Sperry Gyroscope company co-oper in a study of the balancing action in the halteres of the d fly for possible application in aviation. Museums joined other groups to organize the National Council for Historic and Buildings which would channel resources and opinion saving important historical remains in the U.S. At the in national level, exhibitions were borrowed and lent across Atlantic, and American committees of the International C cil of Museums were working to lay the factual basis mutual help within the framework of the United Nations E cational, Scientific and Cultural organization.

Most museum construction projects were postponed by costs, but preparations were made for erecting, enlarging renovating many museum buildings. Denver voted a $350 bond issue to provide an addition for the Colorado Museu Natural History. In Texas, the Fort Worth Children's mus received a $300,000 building fund, also through a munic bond issue. Selling its old building in downtown Boston, New England Museum of Natural History moved to tempo quarters until a new plant could be built. In Detroit the torical society raised funds to construct the first unit of museum building. The Museum of Modern Art was given p erty worth $1,000,000 adjacent to its present home and plan an addition.

Scientific expeditions from U.S. museums were working Africa, Latin America, the Pacific and particularly within U.S. Among the most significant discoveries were rich bed fossil mammals and primitive dinosaurs in New Mexico fo by the American Museum of Natural History.

Visitors to the newly installed mediaeval and renaissance leries of the Joslyn Memorial Art museum at Omaha, N found the paintings displayed in association with furnit pottery and other arts to present a rounded picture of the ture. This was characteristic of the effort by museums to the public greater understanding and enjoyment of their lections. The Chicago Natural History museum continued on its outstanding Hall of American Archeology with miniature groups on the customs of the moundbuilders and the late Savannah river Indians. The Civil War room of Chicago Historical society was reinstalled using mod methods. In New York the new Jewish museum was opened

Special temporary exhibitions are an educational med bringing people to the museums for repeated visits. Three the most important during 1947 concerned textiles. The Me politan museum borrowed from the French government tapestries comprising a unique and comprehensive summary this art form. In Chicago the Art institute arranged a ma display of Oriental rugs. The Museum of Modern Art not o exhibited the winning designs in its competition, "Textiles the Home," but also had them displayed by selected retail st across the country to help bring good art to U.S. homes.

(R. H. Ls.

**Accessions to Art Galleries and Art Museums.**—Nota additions were made to museum collections throughout United States during 1947. Claude Lorrain's "Roman C ına near Tivoli," a painting signed and dated 1636, was quired for the Cleveland museum through the William H. rlatt fund. A most important canvas by El Greco entitled . John the Baptist," was purchased for the M. H. de Young seum in San Francisco. A rare hellenistic bronze statuette of nperor Selencis IV was acquired by the William Rockhill lson gallery in Kansas City, Mo. This remarkable 2nd cen- y bronze was found near Naples where the emperor was held tive by the Romans.

Boston's Museum of Fine Arts acquired a fine late work by cholas Poussin called "Achilles on Skyros," two paintings easant Boy" and "Peasant Girl" by Giovanni Battista Piaz- ta, the 18th century Italian, and the "Portrait of Victorine urend," dated 1862, by Edouard Manet.

The Art institute of Chicago received as a gift the important arles H. and Mary F. S. Worcester collection comprising 70 ms. These include "Two Orientals" by Gentile Bellini, dam and Eve" by Lucas Cranach and "The Chastisement of ve" by a close follower of Polidoro Caldara Caravaggio. Chi- ;o was also given the Winterbotham collection, 35 modern ropean and Mexican paintings purchased over the past 25 ırs. Outstanding in the group are the "Circus Fernando" by nri de Toulouse-Lautrec, "By the Window" by Henri Matisse d "The Philosopher" by Giorgio de Chirico. According to the nterbotham plan, pictures which have not stood up over the ars may be sold.

Three paintings of unusual interest were acquired by the De- it Institute of Arts. Earliest in the group is Jacob Jordaen's oly Family with St. Anne," painted about 1617. Next is ter Paul Ruben's "Archduke Ferdinand," done in 1635, a ıdy for the large picture in the Prado, Madrid. The third pic- e is James McNeill Whistler's famous "Nocturne in Black d Gold: The Falling Rocket," which featured in the libel suit ainst John Ruskin in 1875.

Buffalo's Albright Art gallery added the "Yellow Christ," a table painting by Paul Gauguin dated 1889, and the Spring- ld (Mass.) Art museum also purchased two important French ctures, Théodore Gericault's "Madman, Kidnapper," and Jean ançois Millet's intense "Portrait of Virgine Roumy."

A superb El Greco, "The Agony in the Garden," passed from e Arthur Sachs collection to the Toledo museum.

A full-length portrait of George Washington (one of the three rsions of the so-called Landsdowne type) by Gilbert Stuart, ıs purchased from the Pierrepont family for the Brooklyn useum. (*See* also ART EXHIBITIONS; ART SALES.)

(F. A. Sw.)

**Great Britain.**—Because of continued shortage of labour d materials, few of the London museums and galleries were lly open by the end of 1947: the Wallace collection, which d opened its main gallery on the first floor by the middle of e year, and the Soane museum, which reopened in the autumn, ere exceptions. The National gallery, with 18 of its larger rooms pen, could exhibit a good part of the permanent collection; rious special exhibitions were also held: one of Spanish inting (in conjunction with the Arts council), a selection from e Dulwich gallery pictures, and one of cleaned pictures, ar- nged by the authorities of the gallery as a reply to criticisms hich had been made of their habit of cleaning their pictures. ne Victoria and Albert museum could not show more than a action of its treasures, but several special exhibitions of great portance were held: one of French tapestries (in conjunction th the French government), one of Nicholas Hilliard (the ost comprehensive exhibition of early English portrait minia- res), and one of the pictures, plate, and other relics collected the first duke of Wellington, and presented by the present ke to the nation, together with Apsley house, as a permanent Wellington museum. The Tate gallery, with only a few of its rooms open, tried not so much to exhibit a representative selection of the whole collection as to arrange exhibitions illustrating one particular artist or movement, supplementing these, when necessary, by loans: thus during the year exhibitions were held of Alexander Cozens, William Hogarth, John Constable and William Blake; while the gallery, in conjunction with the British council, circulated exhibitions on the continent of modern British painting and (in conjunction with the National gallery and the British museum) of J. M. W. Turner. The British museum still had many departments closed, but the print room reopened in September, with an exhibition of the finest drawings of the collection, together with one of Indian miniatures, arranged in connection with the winter exhibition of Indian art which opened at Burlington house in November. The Victoria and Albert museum also arranged, in connection with the same exhibition, one of the human figure in Indian sculpture. Neither the Fitzwilliam museum, Cambridge, nor the Ashmolean museum, Oxford, had been able to reopen to their full extent. The Birmingham art gallery had an important exhibition in the summer illustrating the Pre-Raphaelite movement, the centenary of which would fall in 1948. (J. GE.)

## Music.

Soviet Russia's ideology apparently did not permit compromise in 1947 with the nations that fought and conquered common enemies, yet Russian music was still much akin to that which creative men in other parts of the globe produced. The world première of Sergei Prokofiev's *Sixth Symphony* took place in Leningrad, Russia, under the direction of Mavrinsky on Christmas day. The *Tenth Symphony* of Dmitri Shostakovich was awaited with great curiosity. To celebrate the 30th anniversary of the Bolshevik revolution, 1,000 special compositions were written. Dmitri Kabalevsky's new opera, *The Indomitable* and Aram Khachaturian's new *Overture* must be mentioned first. The latter work needed the assistance of 110 men, including 18 trumpeters. Prokofiev also offered *Holiday Overture* and the second part of his opera, *War and Peace*. Little was heard about the music life in the Russian satellite countries, although it was known that symphony orchestras were functioning in Belgrade, Yugoslavia; Budapest, Hungary; Sofia, Bulgaria; and Bucharest, Rumania. In Warsaw, Poland, the local Philharmonic orchestra under composer-conductor Maklakiewicz scheduled a season of 25 concerts with several guest conductors. Franco Autori (Buffalo Symphony) offered contemporary U.S. symphonic works both in Warsaw and Cracow, Poland.

The Philharmonic orchestra in Ankara, Turkey, vied with European concert activity by asking Herman Scherchen to conduct the nine symphonies of Beethoven early in 1947.

Seventy thousand dollars was raised at a dinner in New York city for the support of the Palestine Philharmonic Symphony. Eleven guest conductors representing nine countries were to lead the organization. Gruenthal's *Exodus* was outstanding among new works by Palestine composers.

News from the opposite side of the Asiatic continent revealed the existence of a Korea Symphony orchestra under the conductorship of a young Manchurian refugee. Music in Australia received a forceful impetus when Eugene Goossens forsook Cincinnati, Ohio, for Sydney, to assume leadership of a newly formed symphony orchestra and a large conservatory of music.

South America enjoyed an immensely rich concert season both in opera and the symphonic field. Desiré Defauw was asked to go to Johannesburg, Union of South Africa, and launch a symphony orchestra.

Italy returned slowly to its normal state of music making during 1947. The Rome opera started its new season with Weber's *Oberon*. La Scala in Milan, Italy, featured [Ildebrando] Pizzetti's new opera, *Gold.* Vienna, Austria, invited seven nations to an international music festival devoted mostly to works of living composers: Arthur Honegger, Paul Hindemith, Arnold Schoenberg, etc. News of the revival of the once powerful Universal Edition was welcomed. The State opera as well as five or six symphonic organizations seemed to flourish despite the disturbed political situation. The 25th Salzburg festival had sold-out houses. A new opera, *Danton's Death,* by Gottfried von Einem, was the chief offering among the larger works performed.

The Prague festival was greatly enhanced by the presence of Shostakovich. Bohuslav Martinu's *5th Symphony* and Alois Hába's quarter-tone opera, *The Mother,* received their first performances. The programs also honoured the Turkish composer, Erkin. The usual array of international guest-conductors featured works of their respective countries.

Music in Germany was recovering slowly from the chaos of fifteen years of totalitarian reign. The Chamber Music festival in Frankfurt as well as the one held in Darmstadt, gave German musicians a chance to meet in peaceful and constructive sessions. Radio Frankfurt and Radio Munich broadcast symphonic, operatic and chamber music for German audiences. Two new German operas were presented—Orff's *Agnes Bernauer,* (Stuttgart) and Kauffmann's *Das Perlenhemd,* (Munich). The State Opera in Berlin produced Rimsky-Korsakov's *Sadko* with Russian talent, and premièred the Russo-German composer Boris Blacher's oratorio *Der Grossinquisitor.* The latter's opera, *The Flood,* was given by the Heidelberg Opera house. The spasmodic music life of Berlin reached a climax in the unusual teamwork concert of Wilhelm Furtwaengler and Yehudi Menuhin, tickets for which were sold in the black market. Walter Gieseking's re-entry into Berlin with the Berlin Philharmonic under a Rumanian conductor in a program featuring Brahm's *Second Piano Concerto* and Mahler's *2nd Symphony* was an outstanding event. Berlin's most important broadcasting station was situated in the U.S. zone, permitting the programming of contemporary U.S. music.

The Ninth International festival in Lucerne, Switzerland, offered Benjamin Britten's *Rape of Lucretia* and *Albert Herring,* with the original Glyndebourne, England, cast. The Zurich Municipal opera bracketed Belá Bartók's *Duke Bluebeard's Castle* with Zoltán Kodály's *Spinning Room,* during the summer festival weeks. First performances of operas by Swiss composers took place in Bern: *The Faun* by Walter Furrer; in Basle: the *Raskolnikoff* by Heinrich Sutermeister; and in Zurich: *Le malade imaginaire* by Hans Haug. The intrepid Basle conductor, Paul Sacher, brought two works to the attention of the music world: Honegger's *Fourth Symphony* (*Deliciae Basilensis*) and Igor Stravinsky's *Concerto for Strings in D.* New symphonies by Willy Burkhard, Paul Mueller and Walter Lang as well as a *Cello Concerto* by Othmar Schoeck, found favour with audiences. Frank Martin's *Petite Symphonie Concertante* was heard at many of the continental festivals.

Geneva held another international competition for musical performers during September and October in which 428 candidates from all European countries, the U.S., Canada, South America, Egypt, Turkey, Lebanon, Armenia and Cuba took part.

Paris enjoyed a year of musical offerings of prewar magnitude. Festivals of Bach, Beethoven, Wagner, Ravel and modern Polish music, as well as concerts by the Amsterdam Concert-Gebouw and the Prague Symphony orchestras were heard by large audiences. Five Paris orchestras competed on Sunday afternoons. Symphonic contributions were made by Guy Ropartz (*Fifth Symphony*), Arrieu (*Violin Concerto*), Grunenwald (*Bethsebée*), Martinet (*Orpheus*) and many newcomers. The outstanding sensation however, was Francis Poulenc's opera-bouffe, *Les Mamelles de Tirésias.* The Orchestra National featured three oratorios by Françaix, Alexander Tcherepnine and Ah Adnan Saygun. A Bach festival in Strasbourg and the 21st tival of the International Society for Contemporary Musi Copenhagen, Denmark, as well as the International Week Modern Music in Venice, must be recorded.

Belgium and the Netherlands reported a great renascenc extensive music activity by native composers and symph organizations.

London was the host to many continental orchestras (Ams dam, Vienna and Radio Turin) and offered a Richard Str festival in the presence of the 83-year-old German maste summer festival engaged the services of three English orches and one French orchestra, and provided opera, concerts, ba and recitals; it succeeded despite the difficulties of the econo situation. The première of Britten's latest opera, *Albert Her* took place in Glyndebourne. During the International Fest of Music and Drama in Edinburgh, Bruno Walter and Vienna Philharmonic celebrated their reunion by giving se concerts. Other orchestras heard were the Liverpool, the S tish, the Halle and the British Broadcasting orchestras. Th were opera performances, ballets, dramatic productions, exh tions of paintings, solo recitals and chamber music evenings Joseph Szigeti, Artur Schnabel, William Primrose and Ér Fournier.

The Canadian Broadcasting corporation honoured 13 na composers in a series of weekly broadcasts. Winnipeg sp sored a new symphony orchestra.

In the United States the Metropolitan Opera company g 57 performances in 14 cities, and the New York Philharmo presented 28 concerts in 24 cities in 28 days. An entirely and immensely successful undertaking was launched by the Francisco Symphony orchestra, giving 56 concerts covering n of the states of the Union. Aaron Copland's South Ameri tour of good will brought him into contact with most of Brazilian and Argentinian colleagues.

Tanglewood (in the Berkshire hills of Massachusetts) in duced Mozart's *Idomeneo, Rè di Creta* (written in 1780) played host to many composers, among them Honegger, had just arrived from Buenos Aires, where he conducted *Jeanne d'Arc au bûcher.* Carmel, Calif., held its 19th Ann Bach festival, competing successfully with the older one Bethlehem, Pa. Central City, Colo., in the Rockies gave *Fidelio* and 13 *Martha* performances to capacity audiences. lumbia university, New York city, N.Y., had a summer festi of contemporary music. Howard Hanson and the Eastm school, Rochester, N.Y., featured 44 works by U.S. compos in its annual Festival of American Music; 13 received their f performance. Harvard University was the site of an unus gathering of 100 music critics. The National Gallery of Art Washington, D.C., programmed 33 works by living U.S. co posers. The University of Michigan, Ann Arbor, Mich., star to publish the U.S. edition of 47 volumes containing the co plete works of Bach as collected by the German Bach society

The following opera premières took place during 1947: Vi Thomson's *The Mother of Us All,* Bernard Rogers' *The W rior,* Kurt Weill's *Street Scene,* Sessions' *Lucullus* and Gi Carlo Menotti's *The Telephone.* The latter one-act ope bracketed with the same composer's *The Medium* (1946), joyed a long run on Broadway and went on tour. Marc Bli stein's *The Cradle Will Rock* had its first complete full orches performance. A large number of symphonies appeared on p grams of major symphony orchestras: Elie Siegmeister's *Fi* Persichetti's *Third,* Alexander Tansman's *Seventh,* Ernst K nek's *Fourth,* Sessions' *Second,* Hindemith's *Sinfonia Sere* Mark Brunswick's *First,* Broeckman's *Second,* Randolph Jon *First,* Cecil Effinger's *First,* Douglas Moore's *Second,* Mor

SSED CHOIRS AND ORCHESTRAS at the International Festival of School sic held in April 1947 at Montreal, Que., where 12,000 Canadian and U.S. dents took part in a 3-day program

ould's *Third,* John Powell's *First,* Don Gilles' *Symphony* $5\frac{1}{2}$ or *mphony for Fun* (Toscanini) and Peter Mennin's *Third.* Vio- concertos by Erich Korngold, George Antheil and Efrem mbalist, and piano concertos by Hindemith, W. S. Huffman, , Jacques de Menasce, Robert Casadesus and Roy Harris (for o pianos and orchestra) had their world premières. Biblical ntatas by Copland (*In the Beginning*) and Lukas Foss (*The ng of Songs*) as well as Jaromir Weinberger's cantata *Eccle- stes* were also heard in first performance. Paul Creston's *Fan- sy for Trombone and Orchestra,* Copland's *Concerto for arinet* and *Letter from Home,* Ernest Bloch's *Second Quar-*, Marion Bauer's *Sun Splendor,* Gardner Read's *Pennsylvania ite,* Samuel Barber's ballet-suite *Medea* and Herbert Elwell's *ncoln: Requiem Aeternam* as well as shorter works by David einfeld, Dai-Kong Lee, Jack Kilpatrick, Alan Schulman, liot Carter, Otis Clement and Robert R. Bennett were pre- ièred in the different cities. Among important first U.S. per- rmances were: Britten's *Rape of Lucretia* performed by Car- lli's new Opera theatre, Mahler's *Sixth Symphony,* Stravin- y's *Concerto for Strings,* Bartók's *Second Piano Concerto,* onegger's *Third Symphony* (*Liturgique*), Strauss' *Metamor- iosen,* G. Francesco Malipiero's *Third Symphony The Bells,* livier Messiaen's *The Ascension* and *Hymne pour grand orches- e,* Ralph Vaughan William's *Concerto for Two Pianos,* John arbirolli's *Concerto for Oboe,* Henri Barraud's *Offrande a une nbre* and Vauclain's *Symphony in One Movement.* The young razilian conductor Eleazar de Carvalho made Boston audi- nces familiar with two works by his compatriots: Camargo uarnieri's *Prologo e Fuga* and Heitor Villa-Lobos' *Madona.* eroy J. Robertson of Provo, Utah, won $25,000 in a contest of omposers sponsored by Henry Reichhold of Detroit, with a mphonic work, *Trilogy,* in three movements. Stravinsky per- itted the "democratization" of one of his lyrical ideas from e *Firebird,* under the name of "Summer Moon." (R. Gz.)

**Popular Music.**—The three leading tunes of 1947 were prob- bly "Near You," "That's My Desire" and "Peg o' My Heart," nd each of them won the attention of the public through a sin- e phonograph record of comparatively obscure origin.

"Near You," which headed radio's Hit Parade six times, made s first impression in a band recording conducted by its com- oser Francis Craig whose name, like that of the lyricist Kermit oell, was about as unfamiliar as that of the record-maker, Bullet" or the publisher, "Supreme."

"That's My Desire," by Carroll Loveday and Helmy Kresa, ad been obscurely published 16 years before, with the copy- ght later assigned to Mills Music, Inc. A Mercury record by Frankie Laine catapulted it to a prosperity, which was shared by Laine and the manufacturer.

The real "old-timer" of the top trio, however, was "Peg o' My Heart," which was first heard in 1913 when Alfred Bryan's words and Fred Fisher's music capitalized on Hartley Manners' play of the same name. It was a Vitacoustic record by the Harmonicats (three harmonicas and a guitar) that brought back this charmingly unpretentious ballad of the past. The song was on the Hit Parade for 20 weeks, 10 times at the top.

Perhaps the most significant triumph of nostalgic material was achieved by the "Anniversary Song," appearing in the motion picture, *The Jolson Story.* It was generally credited to Jolson himself and to an industrious adapter, Saul Chaplin, but the actual composer was a Rumanian named Ivanovici, and it may be dated as far back as the early 1880s.

Other successful revivals of 1947 included "Heartaches," by Al Hoffman and Al Klenner, Joe Howard's "I Wonder Who's Kissing Her Now" (by way of another biographical film), James Thornton's "When You Were Sweet Sixteen" (a permanent favourite with barber shop quartets) and the mawkish "Guilty" of Gus Kahn, Harry Akst and Richard Whiting.

There were several successful novelties, with the honestly nonsensical school represented by "Chi-Baba, Chi-Baba" and the exhilarating "Zip-a-Dee-Doo-Dah" of Walt Disney's juvenile picture *Song of the South.* A strange piece of whimsy called "Open the Door, Richard" drove the country mad for a time, and there was a doggedly rural atmosphere in such songs as "Feudin' and Fightin'," "Huggin' and Chalkin'," "A Gal in Calico," etc. Radio's Arthur Godfrey recorded a "Too Fat Polka" which was generally accepted as funny.

Hoagy Carmichael's "Ole Buttermilk Sky" held its own through the early months of 1947, as did "The Old Lamplighter," "For Sentimental Reasons" and the melodious "Oh, But I Do" of Leo Robin and Arthur Schwartz. Jack Lawrence's "Linda" was a spring and midsummer hit, as was "Mam'selle," whose music was credited to the motion picture director, Edmund Goulding, with words by Mack Gordon. Other titles appearing frequently in the Hit Parade were "I'll Close My Eyes," "I Wonder, I Wonder, I Wonder," "Managua, Nicaragua," "My Adobe Hacienda," Frank Loesser's "I Wish I Didn't Love You So," "You Do," "How Soon?," "The Lady from 29 Palms," "It's a Good Day," "And Mimi" and "An Apple Blossom Wedding." Late in the year Carl Sigman emerged as the composer of two hits, "Civilization," with words by Bob Hilliard, featured in the Hartmans' musical show, *Angel in the Wings,* and "Ballerina," with lyrics by Bob Russell. Both were complete surprises to Tin Pan Alley. A recording by Robert Merrill gave new and unexpected life to Yale's "Whiffenpoof Song."

In the field of musical comedy there were two solid successes, *Brigadoon,* selected by the New York critics as the best of the year, and *Finian's Rainbow,* which was actually the more popular, with a reminiscent but delightful score by Burton Lane and some fascinating words by E. Y. Harburg. The hit song of this show was "How Are Things in Glocca Morra?" (echoing an old German tune). Richard Rodgers and Oscar Hammerstein II offered their most advanced piece of work in *Allegro,* which contained "So Far" and other moderate hits. The conventional *High Button Shoes,* glorified by an outstanding ballet, won general favour.

Popular singers of the year, on records and radio, were led by Dinah Shore and Jo Stafford on the feminine side, with Perry Como, Buddy Clark and Art Lund the outstanding male vocalists. Top ranking bands were those conducted by Ted Weems, Eddy Howard and Francis Craig; smaller combinations such as the Harmonicats, the Three Suns and the King Cole Trio were also prominent. (S. SP.)

**Music in Industry.**—During 1947 the benefits of music for industrial and office workers earned increasing recognition and acceptance from management, labour and union officials. This widespread endorsement could be attributed directly to the type of music specifically planned for work purposes. Chiefly through the expansion of wired music services, functional music became available and was rapidly utilized in more and more industrial areas of the United States.

Continuing research, field study and occupational analysis emphasized the importance of authoritative instead of haphazard programming and scheduling of work music. Workers at monotonous, repetitive tasks benefit from musical patterns quite different from those used for workers subject to physical exertion. The objective in the first instance is relief from boredom; in the second case, relief from muscular fatigue. Still another type of program is required for office workers whose tasks are tediously routine yet demand concentration.

Banking institutions made more and more use of specialized music to create an air of friendliness and cordiality. In ever-increasing numbers, retail establishments such as department stores, specialty shops and beauty parlors realized that the specialized programs of wired music resulted in more amicable relations between clerk and customer. (*See* also RADIO.) (X.)

**Recordings.**—The demand for records of all kinds in 1947 was greater by far than it had been during the previous year when the various companies, slowly getting back into production after the war, were scarcely able to meet the public's clamouring needs.

In the United States a dispute between the American Federation of Musicians and the National Associations of Broadcasters, regarding the payment of increased monies for the playing of disks on the radio, ended in the expiration of their contract on Dec. 31, without hopes for an immediate renewal. This entailed a stoppage of all new recordings in 1948 or, at least, until the interested parties could come to terms. In the meantime, since the subject of the dispute did not cover the broadcasting of disks already made, most of the manufacturers bolstered themselves against the coming lean period with a back-log of pressings from existing disk masters.

The record manufacturers in England, France, Italy and other countries, all of them faced with a greater demand in the U.S., redoubled their efforts to supply their export trade, as well their domestic needs, by going into greater production.

With respect to new developments in recording techniques, there was not much that had not been already initiated in the year before. Most of it, at any rate, was concerned with further experimentation in the field of tape or wire recordings for either home or industrial use. (R. BR.)

**Music Library Association:** *see* SOCIETIES AND ASS TIONS.

**Mustard Seed:** *see* SPICES.

**Mutton:** *see* MEAT.

## Nagy, Ferenc

(1903– ), former Hungarian prime ister, was born in 1903 in Baranya cou of a Protestant peasant family. A farmer by profession, he gan his public career as a local agrarian politician and an ac member of the Calvinist community. Elected to parliamen 1939 as an Independent Smallholder, he played a part in posing German designs on Hungary, and went into hiding 1944 when Germany had established control. The first pr sional government formed in Dec. 1944 in Debreczen appoi Nagy minister of reconstruction and the national assem elected in Nov. 1945 made him its speaker. In this capa he addressed a memorable appeal in Jan. 1946 to the west powers to relieve Hungary's grave postwar needs. Shortly a his election to the presidency of the republic, Zoltan Tildy pointed Nagy as his successor as prime minister on Feb. 4, 19 The latter's term of office was an uneasy one. His attempts collaborate with the communists failed. Under communist p sure Ferenc Nagy consented to the expulsion from his party several eminent politicians alleged to be antidemocratic ments, in the hope that there would be a decrease in tens after the coming into force of the peace treaty in 1947. T political consequences of the trial of Gen. Lajos Dalniki Ve and his fellow prisoners and of the arrest by the soviet auth ties of deputy Béla Kovács led to Nagy's resignation in drama circumstances (*see* HUNGARY). In the United States Nagy p lished the story of his resignation in the *Saturday Evening P* and signed a joint declaration of east European agrarian lead against soviet interference, in company with Vlatko Mačhek the Croat, Milan Gavrilovich for the Serb and Georgi M. Di trov for the Bulgarian Peasant parties. (B. ME.

## Narcotics and Narcotic Traffic.

The second sess of the Commiss on Narcotic Drugs of the Economic and Social council of United Nations, meeting in July 1947 at Lake Success, N. considered the situation created by development of new sy thetic drugs with possible habit-forming characteristics, p ticularly the drug Amidone (*see* below). This drug, like m phine, is dangerous from the standpoint of habituation. T commission agreed to recommend a protocol for limiting t manufacture of synthetic narcotic drugs to the estimated me cal needs of the world, in accordance with the terms of the 19 convention, and for controlling the international trade in the drugs by a system of import and export certificates, as provid by the Geneva convention of 1925.

**Coca Leaf.**—At the request of the government of Peru f a survey of the effects of the chewing of coca leaf by a lar part of the population in Peru, Bolivia, Colombia, Chile a Argentina, the Commission on Narcotic Drugs recommended the Economic and Social council that a commission of inqui should be sent to these countries to study the social and ec nomic aspects of the problem. The commission agreed to i clude a psychiatrist and an expert in industrial hygiene on th commission of inquiry.

It was also recommended that the study should include t possibilities of limiting the production and regulating the di tribution of coca leaves.

**Illicit Traffic.**—The Commission on Narcotic Drugs studi the reports of governments on the illicit traffic in narcotic dru and noted that Mexico, Iran, India and Turkey were the sourc of illicit traffic in opium.

he commission requested the Economic and Social council ecommend to the government of Mexico that it take appro- te measures in fulfilment of its international obligations to press the illicit cultivation of opium poppies. Evidence was ented of many thousands of acres of opium poppies under ivation, and the existence of 20 to 30 secret landing strips Mexico for the use of planes in smuggling opium to the ted States. An outgrowth of this illicit traffic was a shooting ay at Woodbine Check, near Mexicali, between U.S. nar- c and customs officers and Mexican smugglers; several of latter were reported to have been killed.

**Var Stocks; Limitation of Production.**—The Commission Narcotic Drugs recommended that any narcotic drugs not ered by import or export certificates, as required by the rnational narcotic conventions, which might come to light n surplus military supplies should be treated as seizures of it drugs and dealt with accordingly. This recommendation made because of a number of large sales of such stocks ch had been brought to the commission's attention.

he commission also requested the Secretariat of the United ions to prepare an appraisal of world medical needs in terms aw opium, and approved a draft questionnaire on the limita- and control of the cultivation and harvesting of the coca .

**pium.**—The commission noted with gratification the re- s of the prohibition of smoking opium in the far east. Opium oking had been declared illegal in all parts of the world ex- t in certain Indian states and in Siam. In Iran, the parlia- nt was considering a law to prohibit the production of opium. s law would provide the death penalty for any person found oking the narcotic.

he commission agreed that strict wording should be inserted he treaty with Japan for narcotic control; that import cer- cates issued by the Japanese government should require in- sement by the Permanent Central Opium board before being ed upon by another country; and that there should be no ex- ts, manufacture, or production of narcotic drugs in Japan.

**Amidone and Metopon.**—The new synthetic narcotic drug idone was brought under the provisions of the U.S. federal cotic laws as an opiate by a finding of the secretary of the asury and a proclamation of the president. This action placed idone under the same federal control as morphine. Consid- ble research was conducted on a number of Amidone-like stances.

The new morphine derivative known as Metopon, produced der a government-owned patent, was made available to physi- ns for the relief of pain in terminal cancer cases. With a ited supply, distribution was being carefully controlled ough a few channels in order that the U.S. public health vice could obtain a clear picture of the effects of this drug oughout the United States.

**Addiction.**—There had been no marked increase in addiction ce the end of World War II, in sharp contrast to conditions vailing after World War I. Relatively few former soldiers been found to be addicted. With limitation of opium pro- ction and international control of synthetic narcotic drugs in offing, it was quite possible that large-scale addiction would prevented. Reports from territories in the far east formerly der Japanese occupation indicated enormous decreases in drug diction. Another great decrease had resulted from the closing government-owned smoking opium shops throughout the far t. (*See* also DRUG ADMINISTRATION, U.S.)

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**National Academy of Sciences:** *see* SOCIETIES AND ASSOCIATIONS.

**National Archives:** *see* ARCHIVES, NATIONAL.

**National Association of Evangelicals.** This is an interchurch organization in the United States, having in its membership 29 denominations. It gained about 78,000 additional members in 1947. During the year its national office was moved from Boston to Chicago. Regional offices were maintained in Boston, New York, Newark, N.J., Philadelphia, Washington, Cincinnati, Chicago, Minneapolis, Los Angeles and Portland, Ore. It represents the conservative wing of Protestantism. Among its principal commissions are war relief, with operations in 15 countries; missions, serving 81 boards with passport, visa, purchasing and transportation service; publications, *United Evangelical Action* and *Sunday Schools,* devoted to the preparation of lesson outlines and the revival of the Sunday school convention; radio, acting as a clearinghouse for numerous programs; chaplain counsellors for industry, and for youth, devoted to the correlation of various denominational and interdenominational organizations. Officers elected at Omaha, Neb., in May, 1947, were Dr. R. L. Decker of Kansas City, Mo., president; Dr. Stephen W. Paine of Houghton, N.Y., first vice-president; Dr. William H. Rutgers of Grand Rapids, Mich., second vice-president; H. J. Taylor of Chicago, Ill., treasurer; Seth A. Rohrer of Elkhart, Ind., secretary; Dr. J. Elwin Wright of Boston, Mass., assistant to the president. (J. E. WT.)

**National Association of Manufacturers:** *see* SOCIETIES AND ASSOCIATIONS.

**National Association of State Libraries:** *see* SOCIETIES AND ASSOCIATIONS.

**National Budget:** *see* BUDGET, NATIONAL.

**National Catholic Community Service:** *see* SOCIETIES AND ASSOCIATIONS.

**National Catholic Rural Life Conference:** *see* CATHOLIC RURAL LIFE CONFERENCE, NATIONAL.

**National Catholic Welfare Conference:** *see* CATHOLIC WELFARE CONFERENCE, NATIONAL.

**National Congress of Parents and Teachers:** *see* PARENTS AND TEACHERS, NATIONAL CONGRESS OF.

**National Debt:** *see* DEBT, NATIONAL.

**National Education Association** of the United States held its 85th annual meeting and its 26th representative assembly at Cincinnati, O., July 7–11, 1947. The assembly with 2,259 delegates was the largest in the association's history. The association was in the second year of its Victory Action Program (1946–51). Its work was carried on through 25 commissions, councils and committees; 29 departments; and 15 headquarters divisions. In the international field it worked through the World Organization of the Teaching Profession which held its first meeting in Glasgow, Scotland, Aug. 7–13, 1947. During the fall and winter of 1947–48 the association asked its members to contribute at least $1.00 each toward a fund for the relief of teachers in war-devastated countries. The association was making progress in its campaign for federal aid to public schools as embodied in S. 472 and H.R. 2953. The senate bill was favourably reported to the senate by the senate committee on labour and public welfare. The house bill was favourably reported to the house committee on education and labour by a subcommittee of that body. Both bills were pending before the second session of the 80th congress. "The Schools Are Yours" was the theme for American Education week, Nov. 9–15, 1947. Among new publications issued by the association during the year was the *NEA News,* which began publication Sept. 12, 1947, and which goes weekly to about 30,000 educational leaders. The association was organized in Philadelphia, Pa., in 1857. It had in 1947 a membership of 386,643 and its affiliated state associations had a membership of 755,740. There were 1,970 affiliated local associations in 1947 as compared with 1,106 in 1943. Its official organ is the *NEA Journal,* edited by Joy Elmer Morgan and issued to all members monthly except June, July and August. The president for 1947–48 was Glenn E. Snow, president of Dixie Junior college, St. George, Utah; executive secretary Willard E. Givens. (*See* also EDUCATION.) (J. E. Mo.)

**National Foundation for Infantile Paralysis:** *see* INFANTILE PARALYSIS.

**National Gallery of Art:** *see* MUSEUMS; SMITHSONIAN INSTITUTION.

## National Geographic Society.

In 1947 the National Geographic society and the U.S. army air forces conducted an expedition to Bocaiuva, Brazil, to observe the total solar eclipse of May 20. Participating in the work were scientists from Lick observatory, Yerkes observatory, Georgetown observatory, the national bureau of standards and the U.S. Naval Research laboratory, under the direction of Dr. Lyman J. Briggs, chairman of the Research committee of the society. The many tons of astronomical instruments used in the studies and the personnel of the party were flown from the United States by the army air forces. Observations were made of the behaviour of the radio-reflecting layers during the eclipse and extensive measurements were recorded of temperature and humidity at various levels up to 50,000 ft. Numerous photographs both in black and white and in natural colour were taken of the four "contacts" of moon and sun, of the sun's prominences and of the corona. A special project involved the photographing of a star field near the limb of the sun as the basis for computations to test the Einstein "shift" theory, a phase of the theory of relativity.

To study a section of the Mid-Atlantic ridge 1,200 mi. east of Bermuda, an expedition was conducted in the summer of 1947 by the society in co-operation with the Oceanographic institution of Woods Hole, Mass., and Columbia university. The Mid-Atlantic ridge is an undersea mountain range stretching from subarctic to subantarctic latitudes. The expedition was under the leadership of Dr. Maurice Ewing of the faculty of Columbia university. From the research ship "Atlantis," a staff of specialists dredged up more than a ton of rock fragments from the underwater mountain slopes and obtained numerous cores of mud deposits from the adjoining ocean bottom.

Studies of auroras being conducted by the society and Cornell university were continued from the principal base at Ithaca, N.Y., under the direction of Dr. C. W. Gartlein of the Cornell faculty. Additional data were obtained to aid in the classification of the various auroral forms and the measurement of their intensities and the heights to which the displays reach above the earth's surface. Further work was carried on during the year in the society's study of North American birds under the leadership of Dr. Arthur A. Allen of Cornell university. The field researches were conducted in Georgia and the Adirondack mountains.

The society's cartographic division in 1947 designed, drew and published four ten-colour wall maps which were issued as supplements to the *National Geographic Magazine.* In all 6,400,000 copies of the charts were distributed to the society's members. Two of the maps are units in a series of charts covering portions of the United States on a scale greater than can be used for a complete map of the country. That of the central United States shows the states of Texas, Oklah Arkansas and Louisiana, a region in which cattle-raising, c farming, and oil, gas and sulphur production are dominar dustries. That of the southeastern United States embraces complete states south of the Potomac river and east o Mississippi river, and parts of adjoining states. This is the of the old south and border states in which most of the fig took place during the Civil War. The map of Canada, A and Greenland covers a broad arc of arctic and suba America. Because of the very large segment of the earth incl within its borders it was produced according to the new metric projection designed by Wellman Chamberlin of th ciety's cartographic division to minimize distortion. The of the countries of the Caribbean includes the islands of sea and the countries which border it and the Gulf of Me Insets show on a large scale the Canal Zone and the prin islands.

A monograph *The Round Earth on Flat Paper,* a notable tribution to the science and art of mapmaking, was publi during the year. A foreword by Gilbert Grosvenor traces history and emphasizes the importance of the map service the National Geographic society.

Membership of the National Geographic society in 1947 1,635,000. Its headquarters are at 1146 Sixteenth Street, N Washington 6, D.C. Officers in 1947: president and ed Gilbert Grosvenor; vice-president and associate editor, Oliver La Gorce; secretary, Thomas W. McKnew; and treas Robert V. Fleming. (G. Gr

## National Guard.

The national guard during 1947 m the most rapid growth in its hist bringing its membership by Dec. 15 to 208,374, the grea peacetime strength the guard had ever had except in 1940 1941 when with the threat of war an attempt was made t its ranks prior to induction.

Upon the return of the national guard to state contro 1946, the guard was completely reorganized, with an ulti goal of 683,000 men, and with an accent upon air units mobile ground units, supplied with the latest weapons equipment, and trained as an "M-day force," capable of mediate mobilization in case of enemy attack.

When complete the national guard was to consist of 25 fantry divisions, 2 armoured divisions, 21 regimental com teams, 14 anti-aircraft artillery brigades, 12 wings, 27 gro 72 fighter squadrons, 12 light bombardment squadrons and necessary supporting troops. Plans included the organiza of 5,879 army and 514 air units, allocated to the various st on a basis of population and strategic necessity.

When a unit has recruited 25% of its officers and 10% its enlisted men, and can meet required standards for armo facilities, it is "federally recognized." At the beginning of year 1947, the guard had 1,106 such federally recognized u with a membership of 23,385 men. By the end of the y 3,916 units had been recognized. This represented a growth approximately 900% in membership and 300% in units dur the year.

Approximately 82,000 of this increased membership gained during a two-months' recruiting drive, the first in guard's history. It was launched on Sept. 16, the annivers of the induction of the first national guard troops in 1940 World War II, and proclaimed by the president as natio guard day.

The guard held to the army's rigid requirements as to ph ical fitness, intelligence and military aptitudes, and each u as soon as organized, entered immediately upon its train ssion. Only World War II officers were accepted during the rganization period. Initial enlistments were accepted from n 17 to 34 years of age; veterans up to 54 years of age ld enlist, depending upon the length of their military service.

Approximately 50,000 men attended the 15-day encampments shorter school sessions in lieu of camps during the summer 1947, the first such field training after 1940. All army ools, varying in length from ten days to ten months, had n opened to national guardsmen. These schools offer a iety of courses, many of which have a civilian as well as itary value. Courses in watch repairing, diesel motors, ding and photography are examples.

One of the greatest problems was in supplying and equipping rapidly growing units with the latest weapons developed ing and after World War II. Three fighter squadrons were be equipped with jet-propelled P-80 Shooting Stars. Other units were being equipped with the same aircraft used by United States air force.

The national guard had become, by successive acts of con- ss, the dual responsibility of the state governments and the eral government. The federal government supplied equip- nt, uniforms and pay for weekly training classes and summer d training; the state was charged with recruiting and hous- or armouries. However, since plans called for a guard ce much larger than in any previous time, part of the re- onsibility for armouries would have to be assumed by the leral government if the guard was to reach full strength.

While enlarging its units through recruiting and maintaining id training standards, the new national guard had also readily cepted the other half of its dual role, that of furnishing to states a local disaster force, for the alleviation of distress d the protection of property in case of local emergency. r example, fighter squadrons from California and Louisiana w emergency supplies into Texas City, Tex., at the time the disastrous fire in April 1947. Within 30 minutes after explosion and fire at Stanford, Conn., men of the 963rd ld artillery battalion arrived with stretchers, blankets and her supplies. Tornadoes in Oklahoma and Arkansas, and ods in Michigan, as well as many other lesser tragedies, ved to dramatize the necessity for an on-the-spot group, uipped, organized and trained to handle such emergencies.

(K. F. C.)

**ational Housing Agency:** *see* HOUSING.

**ational Income and National Product:** *see* INCOME D PRODUCT, U.S.

**ational Insurance:** *see* RELIEF; SOCIAL SECURITY.

## ational Labor Relations Board.

More cases were filed with this in- pendent agency in the fiscal year 1947 than in any year after ssage of the National Labor Relations act.[1]

A total of 14,909 cases were brought to the board's attention. is represented an increase of 2,649 cases, or 21.6%, over those cketed during the previous year, and was the greatest number ceived in the board's 12-year history.

Of the 14,909 cases docketed in the fiscal period, 10,677, or .6%, involved representation questions and the remaining 232, or 28.4%, charges of unfair labour practices.

With the 4,605 cases pending on its books from the previous ear, the board had on its docket during the fiscal period 19,514 cases. During the year it closed 14,456 of them, leaving 5,058 cases pending on July 1, 1947. Of these, 2,443 involved unfair labour practice allegations; the remaining 2,615 involved conflicting claims of representation.

Most of the representation cases were closed by board-conducted elections, consent elections or cross-checks of company pay rolls with union authorization cards. The remaining cases closed were either withdrawn by the parties filing the petitions or dismissed by the board for lack of merit.

During the year the board conducted 6,920 elections and cross-checks in which 805,474 employees cast secret ballots for the organization of their choice. About 90% of those eligible to vote went to the polls and, by secret ballot, signified their choice of bargaining representative. Eighty-five per cent of those voting marked their ballots in favour of a bargaining agent.

Only 886 of the 6,920 elections held during the year were ordered by the board. The greater number of them were held with the consent or agreed-upon stipulation of all parties.

Affiliates of the American Federation of Labor were successful in obtaining majority designation in 2,196 polls out of 3,581 elections in which they participated during the year, receiving 208,524 votes. Unions affiliated with the Congress of Industrial Organizations were selected in 2,138 out of 3,410 contests, receiving 288,381 votes. Unaffiliated unions were chosen in 860 instances out of a total of 1,317 ballotings in which they participated, receiving 124,827 votes. In the remaining 1,726 contests, 183,742 votes were cast against union representation.

The board carried over from its previous year 2,225 unfair labour practice cases. With the 4,232 new such charges filed during the year, the total to be handled was 6,457. Of these, 4,014 cases were closed in the fiscal period, leaving a balance of 2,443 pending on July 1, 1947.

These unfair labour practices concerned acts of employers which discourage or interfere with self-organization of employees or the practice of collective bargaining. For example, employers are specifically prohibited from interfering with, restraining, or coercing employees in the exercise of their rights to organize and bargain collectively; dominating or interfering with the formation of any labour organization; discriminating against any employee to discourage or encourage membership in a labour organization; discharging or otherwise discriminating against an employee because he has filed charges or given testimony under the act; and, lastly, employers are prohibited from refusing to bargain with the representatives selected by a majority of employees in an appropriate bargaining unit.

To remedy such unfair labour practices the board is authorized to issue cease and desist orders and to take such affirmative action including reinstatement with or without back pay, as will effectuate the policies of the act. In the 1947 fiscal period the board ordered the reinstatement of 4,114 workers found to have been discriminatorily discharged. Back pay awards of $1,104,660 were given to 2,656 of the reinstated workers. Thirty-six company unions were disestablished. In 273 cases collective bargaining was ordered, while in 658 instances notices of compliance with board decisions were directed to be posted. These posted notices informed employees that they were free to engage in collective activity without interference, as guaranteed in the act.

In its 12 years of operation, more than 100,000 cases had been filed with the agency. During that time the board conducted more than 36,000 elections in which 8,000,000 workers signified their choice of bargaining representative. During this period the board ordered the reinstatement of more than 300,000 workers found to have been discriminated against, and directed back pay awards totalling more than $12,000,000. About 2,050 company unions were ordered disestablished and in another

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[1] On June 23, 1947, one week before the close of the fiscal year, the 80th congress ssed, over presidential veto, the Labor Management Relations act of 1947 (Taft- rtley act), greatly amending the National Labor Relations act. The new act enlarged National Labor Relations board from three to five members and separated the prose- ting and judicial functions by vesting final authority for investigation and prosecution all unfair labour practice cases in the board's general counsel. Among other provi- ns, the new act provides for four additional types of elections to be conducted by the ard and specifies certain union practices as illegal.

The text of this article relates only to the board's operations under the old law.

8,000 cases notices of compliance with board decisions were directed to be posted.

Decisions and orders of the board are not self-enforceable. Either the company or the board may petition the circuit court of appeals. Beyond this, either party may appeal to the supreme court.

In the fiscal year, 68 board decisions reached the circuit courts. Of these, 48 were enforced in full, 10 were set aside and 10 were modified. Of the 6 cases that reached the supreme court in the fiscal year, board orders were enforced in each instance.

A total of 654 cases had been litigated in the federal courts from the time the act was passed. In the circuit courts, 394 board orders were enforced in full; 83 were set aside; 177 modified; and 14 remanded to the board for further consideration. Of the 56 cases that reached the supreme court, board orders were enforced in 54 cases; in only 2 cases were board orders set aside.

The board's jurisdiction extends only to those industries engaged in or affecting interstate commerce.

While the board has its headquarters in Washington, D.C., it maintains 28 regional offices, each responsible for servicing a particular area. (*See* also LABOUR UNIONS; LAW; STRIKES AND LOCK-OUTS.) (P. M. HG.)

**National Lawyers Guild:** *see* SOCIETIES AND ASSOCIATIONS.

## National Mediation Board.

The National Mediation board is an independent agency of the U.S. government charged with administration of the Railway Labor act. This statute provides procedures for settlement of disputes on the railroads and airlines for the purpose of preventing interruptions to commerce arising out of labour disputes. In disputes over employee representation, the board is authorized to conduct elections and certify representatives designated by majority vote of employees. In disputes between employees and employers over changes in rates of pay, rules or working conditions, the board has authority to endeavour by mediation to settle the dispute and thus prevent interruptions to commerce arising out of work stoppages.

In 1947, the U.S. economy was notably affected by postwar adjustments and mounting prices. Labour unrest was general and strikes or threatened strikes were common. As in other industry, there were but few days during the year when, on some railroad or airline, there was not a threatened interruption to service as a result of unsettled labour disputes. For the most part the step-by-step procedures of the law for achieving peaceful settlements were effectively applied and thus the threatened interruptions were averted. As a result, in scores of cases, substantial financial loss to the railroads and airlines as well as related industries, to their employees, and loss in service to the public were avoided by the orderly settlement of disputes as contemplated by the law.

Although the law's effectiveness was demonstrated many times, its failure in a few cases during the year serves to emphasize the need for the law and alertness in applying its procedures.

During 1947, the prolonged strike of employees of the Toledo, Peoria and Western Railroad, a small midwestern carrier, was brought to an end. The strike began on Oct. 1, 1945, when operation of the road was returned to private management by the Office of Defense Transportation which operated the property during World War II. The dispute which led to the strike extended back to 1941 when the employees began negotiations in an effort to secure improved wages and working conditions.

Refusal of the railroad's management to agree to the employee's proposals led to one of the most bitter and exten labour disputes in recent railroad history. Some striking ployees lost their lives, and the carrier's president was as sinated under mysterious circumstances which remained solved. Following his death the new management made ag ments with the striking employees and thus the strike terminated on April 22, 1947, nearly 19 months after it be

During the year there was one strike among airline ployees covered by the act. This stoppage involved pilots American Overseas Airlines and extended from Sept. 30 to 18. Although mediation was unsuccessful in averting the str mediation was resumed by members of the National Media board after the stoppage began. Following extended con ences, the disputing parties were finally brought into agreem and the strike was terminated. The stoppage involved about pilots, but grounding of planes resulted in the furlough of s 1,300 nonstriking employees and the stranding of more t 1,000 passengers at various overseas points.

Other strikes during 1947 on carriers covered by the Rail Labor act were of short duration or of minor importance.

During the year, a total of 574 applications for service w received and docketed by the board. There were 436 cases posed of and, of this number, 224 were wage and rule dispu and 212 were employee representation disputes. (*See* also R ROADS.) (T. E. S.

**National Military Establishment:** *see* GOVERNMENT PARTMENTS AND BUREAUS; UNITED STATES.

**National Museum:** *see* SMITHSONIAN INSTITUTION.

## National Parks and Monuments.

During the ye 1947 travel to areas administered by the U.S. national park service increa 17% over 1946. The total number of visitors was 25,265,2

Most important event of the year was the establishment June 20 of Everglades National park. This new park was de cated on Dec. 6 by the president of the United States w appropriate ceremonies held at Everglades city, Fla. Loca near the southern extremity of the Florida peninsula, the p embraces an area of 454,000 ac., eventually to be increased approximately 1,282,000 ac. by the addition of lands to be p chased with funds provided by the state of Florida.

Other new areas added to the national park system dur 1947 were the Theodore Roosevelt National Memorial pa 35,370 ac., on the Little Missouri river in North Dakota, a Kennesaw Mountain National Battlefield park near Mariet Ga. Kennesaw Mountain National Battlefield park includes Kennesaw Mountain National Battlefield site, a smaller ar which formerly served to memorialize the battle.

At the close of 1947 the national park system included units, classified as follows: 28 national parks, 4 national hist cal parks, 85 national monuments, 11 military parks, 2 batt field parks, 1 memorial park, 6 battlefield sites, 11 historic sit 9 memorials, 10 cemeteries, 3 parkways and the system national capital parks.

Two national monuments were formally dedicated for pub use. The first of these, Fort Frederica National monument St. Simon's Island, Ga., is the site of an English colonial o post, established in 1736. The second, Whitman National mon ment in the state of Washington, is the site of the Whitm mission, once a landmark on the Oregon trail where Dr. Marc Whitman and Narcissa Prentiss Whitman ministered to t spiritual and physical needs of the Oregon Indians until mass cred by them in 1847.

In 1947, the name of Boulder Dam Recreational area in A zona and Nevada was changed to Lake Mead Recreational ar

NZE STATUE of Thomas Jefferson, sculptured by Rudolph Evans, being ight into the Jefferson memorial at Washington, D.C., in April 1947, to ace the plaster model installed in 1943 when metal could not be spared

r Boulder dam, which impounds Lake Mead, was renamed over dam in honour of former President Herbert C. Hoover. Fort Raleigh National Historic site on Roanoke Island, N.C., ional park service archaeologists had excavated a small earth t believed to be the remains of a fort constructed by mem- s of Raleigh's expedition in May 1585. Service archaeologists l also uncovered the remains of Fort Vancouver in the state Washington, the old fortified post which served as western dquarters of the Hudson's Bay company from 1829 to 1845.

A disastrous forest fire on Mount Desert Island, Me., in tober, invaded Acadia National park and burned 8,750 ac. or 67 sq.mi. within the park in addition to 8,438 ac. outside. tal damage to the forests in this park could not be readily ermined until the hardwoods should leaf out again. Where the rn was complete, the return of the forest would be exceed- ly slow, for the duff and humus were largely consumed by fire.

Representatives of the United States International Park com- ssion met with a newly created International Park commis- n of Mexico in Mexico City, July 15 to 19, inclusive, to dis- ss plans for establishing a national park in the Mexican states Coahuila and Chihuahua contiguous to the Big Bend National rk in Texas and a Coronado International memorial in the exican state of Sonora as a companion area to the proposed ronado International memorial in Arizona.

The United States travel division, a unit of the national park rvice which was suspended during World War II, was re- tablished toward the end of the year with J. Lee Bossemeyer Fayetteville, Ark., as chief. Bossemeyer was formerly head the San Francisco, Calif., field office of this agency, which s known prior to World War II as the U.S. travel bureau. ohibited by statute from competing with private agencies, the vel division would assist the travel industry in every way ssible to acquaint the people of the United States and visitors om other countries with the educational and recreational ad- ntages the United States and its territories have to offer. The vel division would formulate and carry out its program with aid and guidance of an advisory committee comprised of six presentatives of the federal government and six additional embers chosen from industry to represent the various regions the United States. Russell E. Singer, executive vice-president of the American Automobile association, had accepted the chairmanship of this advisory committee. (N. B. D.)

**Great Britain.**—In July 1947 the reports of the national parks committee, set up in 1945 by the minister of town and country planning, and its two special committees dealing with wildlife conservation and footpaths and access were published. This committee recommended that 12 parks covering 5,682 sq.mi. should be set up in 3 annual instalments, as follows: the Lake district; north Wales; the Peak district; Dartmoor; the Yorkshire dales; the Pembrokeshire coast; Exmoor; the South Downs; the Roman wall; the north Yorkshire moors; Brecon Beacons and Black mountains; the Norfolk Broads.

The committee recommended that the national parks should be controlled by a national parks commission with park committees for each of the 12 parks, that a further 52 areas of outstanding landscape beauty, scientific interest and recreational value should be designated conservation areas, and that a coastal footpath should be made available to the public.

Under the national land fund instituted in 1946, by which land is accepted by the exchequer in lieu of death duties, three properties were handed to the national trust as places of historic interest or natural beauty: Hartsopp Hall estate in the Lake district, Cotehole, Cornwall, and Townend farm, Troutbeck, while Tregonnan house, near Padstow, Cornwall, was handed over to the Youth Hostels' association. Early in 1947 it was announced that Alderley Edge, a woodland in Cheshire, was to be transferred to the national trust.

A statue, by Sir William Reid Dick, of King George V (1865–1936) was unveiled on the lawns of Westminster abbey on Oct. 20 by King George VI. The monument was the centrepiece of the national institution known as King George's Playing fields.

**Italy.**—In October the Italian ministry of agriculture and forests transferred the control of the national park of the Gran Paradiso to an independent body subsidized by the government and the authorities of Aosta and Turin. The park of the Gran Paradiso covers approximately 220 sq.mi. in the Aosta valley, in northern Piedmont. With this new control the surviving ibex which had almost been destroyed by hunters during World War II would be preserved.

**Switzerland.**—During the year considerable opposition was expressed to a project to set up power generating stations on the river Spöl, which flows through the Swiss National park situated to the east and west of the Ofen pass in the lower Engadine. On the fringe of the national park it was proposed to construct a dam of a height of about 420 ft. and empty the river Spöl for a length of about four miles, where a series of small lakes would be constructed. The Federal National Park commission, which is nationally supported, and the League for the Protection of Nature both protested against these proposals on the grounds that the seclusion of the park would be violated and the birds and game would be scared by the noise of the proposed engineering work.

BIBLIOGRAPHY.—*Report of the National Parks Committee (England and Wales)* (Cmd. 7121, London). (H. J. G. G.)

**National Railway Labor Panel:** *see* NATIONAL MEDIATION BOARD.

**National Wealth:** *see* WEALTH AND INCOME, DISTRIBUTION OF.

**Natural Gas:** *see* GAS, NATURAL.

**Nauru:** *see* PACIFIC ISLANDS UNDER TRUSTEESHIP; TRUSTEE TERRITORIES.

## Naval Academy, U.S.

The United States Naval academy, located at Annapolis, Md., was founded in 1845, and is maintained by the government, under the immediate supervision of the bureau of naval personnel of the navy department, for the education and training of young men for the naval service.

The Naval academy renewed emphasis on its traditional role as an undergraduate institution, stressing fundamentals and leaving to postgraduate or special schools of the navy such branches of study as are not basic and properly undergraduate. Postwar curricular studies, which stressed the concept that the Naval academy was but one link in the chain of naval education, were further developed with a consistent view of the academy's undergraduate function. The return to summer practice cruises made possible a reallocation of time among the academic departments which provided increased opportunity for emphasis on fundamentals.

"Camid II," an amphibious operation participated in by 780 midshipmen of the Naval academy and 600 cadets of the U.S. Military academy, was held in the Chesapeake capes area in Aug. 1947. Exchange of faculty members on a yearly basis and students of the first class on a week-end basis between the Naval and Military academies were other typical aspects of the closer co-operation of the service academies in the accomplishment of mutual objectives.

The first, second and third classes of midshipmen, together with designated N.R.O.T.C. midshipmen, were sent on practice cruises in northern European waters aboard the carriers "Randolph" and "Kearsarge," the battleships "New Jersey" and "Wisconsin," and the destroyers "Cone," "Stribling," "O'Hare" and "Meredith." Included in this operation was a short period of indoctrination aboard submarines for first classmen. The joint cruises for academy midshipmen and those of the 52 universities having N.R.O.T.C. units was one of the steps taken for further integration of naval reserve and academy sources of officer personnel under the Holloway plan.

Rear Admiral James L. Holloway, Jr., U.S. navy, assumed his duties as superintendent of the Naval academy in Jan. 1947.

Entrance requirements were rendered more flexible for candidates entering in 1948 by the elimination of chemistry as a part of the regular entrance examinations and as a required subject for admission by either of the certificate methods.

Curricular aims were being increasingly focused upon preparation for the broader aspects of a naval career with decreasing emphasis on the purely junior officer qualifications of graduates. (For statistics of enrolment, faculty, library volumes, etc., *see* UNIVERSITIES AND COLLEGES.) (R. S. CR.)

**Navies of the World.** At the end of 1947 the distribution of the world's warships had undergone considerable alteration, compared with the situation 12 months earlier. The two principal sea powers, the United States and the British empire, had discarded not only the majority of their older vessels, but also a substantial proportion of the additional units constructed during 1939–45. While a great many of these ships had been broken up or converted to mercantile use, others had been acquired by smaller nations as replacements for obsolete tonnage.

Some of the surrendered German ships which had been divided among the navies of the United States, the British empire, France and the U.S.S.R. were utilized as targets or for various experiments, only a minority being incorporated in the fleets of their new owners. At the end of the year the fate of the Italian ships which under the peace treaty were to be divided among the same four nations had not been finally settled. Offers had been made by the United States and British governments to leave the more important of the units assigned to them in Italian hands, to be broken up or otherwise destroyed; but the attitude of the French and Russian governments to this proposal had not been made known.

In the far east, a division had been made of the 92 m war vessels captured when Japanese resistance ended, 23 u each being taken over by the United States, British, Chi and Russian navies. These ships comprised destroyers, es and patrol vessels, mine sweepers and other ancillary craft.

In spite of the heavy reduction of expenditure on naval ar ments by the two principal powers, research work on weapons continued. Some of these, naturally, took the form improvements on war inventions of the Allies; others v adaptations of ideas of the axis countries, some of which not reached the operational stage when hostilities ceased. proved antisubmarine devices, more effective anti-airc weapons, guided missiles of unexampled range and power new methods of propulsion were reported to be among problems under investigation by naval scientists and technici So far as warship design was concerned, nothing fresh wc appear to have been initiated, beyond the inclusion of cert approved devices in the equipment of the limited number new vessels ordered to be constructed.

Of the fresh types produced in large numbers under the st of war, several had almost disappeared from the princi navies, *e.g.*, the corvette, the motor torpedo boat and land ships and craft of all but a few categories.

Though it had become known that in the 18-in. gun bat ships "Musashi" and "Yamato," of more than 63,000 t standard displacement, and the aircraft carrier "Shinano," 59,000 tons, the Japanese had built by far the largest war v sels in history, there appeared to be no disposition on the p of the leading naval powers to emulate these examples megalomania, possibly because none of the three achieved a thing of note before being sunk. In fact, it would seem th

NETLOAD OF FOOD delivered to Little America IV by the U.S.S. "Yanc being lowered onto the frozen surface of the Bay of Whales early in 19 Supplies were then brought to the camp site of the U.S. navy's antar expedition by tractor-drawn ten-ton sleds

the whole, the lessons of the war failed to encourage further
wth in the size of ships.

'ublication during 1947 of documents discovered in enemy
iives and of the results of interrogations of prisoners, threw
h light on many of the principal events of World War II,
ishing valuable material for its historians. Not the least
ortant fact that emerged from this material was the im-
ise influence exerted by Allied command of the sea.

**Jnited States Naval Strength.**—At the end of 1947 the
ooo-ton battleship "Kentucky," whose armament was be-
'ed to include guided missiles of a new type, was still some
ance from completion. The battle cruiser "Hawaii" was also
inished, but the new large aircraft carrier "Coral Sea" had
n commissioned during the year. Disposal of the old battle-
os "Idaho" and "New Mexico" had reduced the total of this
egory to 15. From the aircraft carrier "Midway" had been
nched experimentally during the year a guided missile of a
v type, said to resemble the German V-2 in design. A pro-
m of new construction introduced in 1947 included two sub-
rines, the "Tang" and the "Trigger," of a novel design to
orporate the latest devices in their equipment. Other sub-
rines were to be adapted for experimental use in Arctic
ers. An even larger proportion of the total strength of the
t was laid up in reserve than during 1946. Ships of war
l to be completed included five cruisers, nine destroyers and
en submarines.

Strength of personnel had been brought down to 395,000 offi-
s and men in the navy and 83,700 in the marine corps.

**British Naval Strength.**—With the disarming of three obso-
e battleships, the strength of the royal navy in this category
s reduced to ten ships, only five of which were of late design.
escort aircraft carriers had been discarded with two excep-
ns, one of which had been lent to the Netherlands for a term
years. The number of cruisers had also decreased with the
posal of the oldest units, and the completion of three laid
wn during the war was deferred indefinitely. Construction of
aircraft carriers was also held up for the time being, pending
cision concerning their armament. Two destroyers of novel
sign were ordered to be built; it was possible that one of
ese might be propelled by gas turbines, in the light of experi-
nts carried out in 1947 with a smaller craft so engined. A
mber of the escort vessels and mine sweepers built during
orld War II were sold or otherwise disposed of during the
ar. Similar reductions were effected in the fleets of the over-
as dominions.

Personnel, the strength of which was fixed in the early part
the year at 192,665, was further cut to a total of 147,000 at
later date. To facilitate this reduction, a great many ships at
me and abroad were paid off or greatly reduced in comple-
ent, temporarily bringing down the effective strength of the
me fleet to one cruiser and four destroyers.

**France.**—Financial stringency curtailed plans for the reor-
nization of the French fleet. Work on a cruiser which was
der construction had to be stopped, and a proposal to build
new aircraft carrier had ultimately to be deferred indefinitely.
ven corvettes and a number of other vessels which were on
an had to be paid off and returned as a measure of economy,
d training of personnel was also affected. Three destroyers
d 27 other vessels of the former German navy, which were in
S. hands, were directed to be transferred to the French flag
the end of 1947, but it was not clear whether they would all
commissioned or their material utilized for repair work.
rsonnel was reduced to about 50,000.

LST's which brought Netherlands troops and supplies for amphibious landings at East Java in July 1947, during the colonial warfare between Indonesian republicans and colonial authorities

**U.S.S.R.**—Three old battleships, of which one was on loan
om the British navy, constituted the principal strength of the
viet fleet in 1947. Eight cruisers, one of them lent from the U.S. navy, about 45 destroyers and 120 submarines were also believed to exist. Very large flotillas of small craft, many of them lent by Allied Powers during World War II, made up the bulk of the remaining strength. Little was known about new construction, but it was not believed to be important.

**Italy.**—Having been reduced by the peace treaty to 2 battleships, 4 cruisers, 20 destroyers, 20 corvettes and various auxiliary vessels, the Italian navy adapted itself to its new status in 1947. During the summer a cruise around the Italian coasts and islands was undertaken for the benefit of the personnel, which was limited to 22,500. As mentioned above, final arrangements for disposal of tonnage to be divided among four Allied Powers under the peace treaty had still to be carried into effect.

**Other European Countries.**—In the royal Netherlands navy little alteration in strength took place during the year, the completion of two cruisers being deferred owing to the pressing need for materials for mercantile construction.

A proposal to purchase a cruiser for the royal Norwegian navy was defeated by a narrow vote, with unfortunate results as regards the naval training program. An eighth destroyer was passed into service, and a new royal yacht was bought. No other ships of importance were acquired, but it was arranged to reconstruct five prewar torpedo boats to enable them to be used as escort vessels. Personnel numbered about 5,000.

Denmark completed two small destroyers laid down before the war and chartered three submarines from the British navy. Good progress was made with the construction of the six small torpedo boats in hand. Total personnel numbered nearly 4,000.

Sweden completed one of two cruisers under construction; the second was expected to be ready early in 1948. Two new destroyers were also about to join the fleet, and two more were authorized to be built. Throughout the year the navy was maintained in a high state of efficiency, with a total personnel of 10,000.

Finland was obliged under the terms of peace with the U.S.S.R. to hand over its only coast defense ship, five submarines and a number of motor torpedo boats, leaving under the Finnish flag only a few mine sweeping and patrol craft.

Poland augmented its naval forces by some small craft from the Russian navy; otherwise there were few changes.

Spain continued to proceed slowly with the construction of 20 new destroyers and a number of other vessels. Apparently slow delivery of materials was the chief cause of delay. Personnel numbered 20,000 with reserves.

*Navies of the World, 1947**

| | Battle-ships | Battle Cruisers | Fleet Aircraft Carriers | Escort Aircraft Carriers | Cruisers | Coast Defense Ships | Destroy-ers | Sub-marines |
|---|---|---|---|---|---|---|---|---|
| United States | 15 | 2 | 36 | 69 | 72 | — | 630 | 206 |
| British Empire | 10 | 1 | 13 | 1 | 46 | 2 | 209 | 83 |
| France | 3 | — | 1 | 1 | 9 | — | 22 | 14 |
| U.S.S.R. | 3 | — | — | — | 8 | 1 | 45 | 120 |
| Italy | 2 | — | — | — | 4 | — | 20 | — |
| Argentina | 2 | — | — | — | 3 | 2 | 11 | 3 |
| Brazil | 2 | — | — | — | 1 | — | 13 | 4 |
| Chile | 1 | — | — | — | 1 | — | 6 | 7 |
| Turkey | — | 1 | — | — | 2 | — | 7 | 10 |
| Spain | — | — | — | — | 6 | — | 16 | 5 |
| Sweden | — | — | — | — | 4 | 5 | 20 | 24 |
| Netherlands | — | — | — | 1 | 2 | — | 6 | 7 |
| Peru | — | — | — | — | 2 | — | 2 | 4 |
| China | — | — | — | — | 1 | — | 6 | — |
| Greece | — | — | — | — | — | — | 10 | 6 |
| Norway | — | — | — | — | — | — | 8 | 5 |
| Portugal | — | — | — | — | — | — | 5 | 3 |
| Poland | — | — | — | — | — | — | 2 | 4 |
| Denmark | — | — | — | — | — | — | 2 | 3 |
| Rumania | — | — | — | — | — | — | 2 | 1 |
| Colombia | — | — | — | — | — | — | 2 | — |
| Yugoslavia | — | — | — | — | — | — | — | 6 |
| Siam | — | — | — | — | — | — | — | 4 |

*Though precise information concerning the Russian and Yugoslav navies was not available, the above figures were believed to be reasonably accurate. Other navies, composed of smaller craft than the above, were those of Mexico, Cuba, Belgium, the Dominican Republic, Venezuela, Ecuador, Uruguay, Finland, Bulgaria, Iran, Egypt and Iraq.

Portugal arranged for the modernization in England of its five destroyers. A new surveying vessel was acquired.

Turkey acquired 13 fleet mine sweepers and a number of smaller craft from the British navy.

Greece obtained six patrol vessels and two dock landing ships from the United States, besides some smaller craft.

Rumania was reported to be negotiating for the return from Russia of two destroyers seized during World War II. Bulgaria had acquired four motor torpedo boats and six motor launches from the Russian navy. From the same source the Yugoslavs were reported to have received 6 submarines, 20 motor torpedo boats and a depot ship. Otherwise, there existed only a remnant of the prewar naval strength.

**South and Central America.**—Though Argentina had introduced an impressive program of naval construction, the only additions to the fleet in 1947 were four frigates formerly belonging to the United States.

Brazil purchased a few auxiliaries in the United States in 1947. It was hoped to acquire the U.S. cruisers "Nashville" and "Phoenix" in the following year.

Chile bought two transports and an oiler in the United States in 1947 and was expecting to receive the cruiser "Boise" from the same source during 1948.

Peru had strengthened its navy by the acquisition of two ex-Canadian frigates and a couple of auxiliaries in 1947. Colombia added a frigate and two small patrol craft to its forces during the year. The Dominican Republic was reported to have bought two corvettes; Venezuela acquired six ex-Canadian corvettes and a former U.S. landing ship; Cuba and Mexico were reported to be negotiating for other vessels; and Ecuador purchased an ex-U.S. frigate.

**Asia.**—China, in addition to 23 miscellaneous vessels acquired with the disposal of captured Japanese ships, took over a cruiser and a destroyer from the British navy in 1947. A quantity of additional tonnage was expected to be transferred from the United States navy.

The Siamese navy purchased two corvettes and a fleet mine sweeper from the British navy during 1947.

**Africa.**—Egypt proposed to purchase three sloops, two corvettes, four fleet mine sweepers and a number of smaller craft in England. (*See* also MUNITIONS OF WAR.)

(F. E. McM.)

**Navy, U.S. Department of:** *see* GOVERNMENT DEPARTMENTS AND BUREAUS.

**Nazis:** *see* ANTI-SEMITISM; GERMANY; WAR CRIMES.

**N.E.A.:** *see* NATIONAL EDUCATION ASSOCIATION.

## Nebraska.

One of the states formed from the territory the Louisiana Purchase, Nebraska lies in lower Missouri valley in the west north central part of the U admitted to the union in 1867; land area 76,653 sq.mi.; wa area, 584 sq.mi.; pop. (1940) 1,315,834; estimated 1,301,000 the bureau of census on July 1, 1947; capital, Lincoln (81,98 largest city, Omaha (223,844). In 1940, 39% of the populat was urban. About 1% of the total population is Negro about 8% foreign-born, principally German and Scandinavi

**History.**—State officers for the 1947–49 period were: g ernor, Val Peterson (Rep.); lieutenant governor, Robert Crosby; attorney general, Walter R. Johnson; auditor, Ray Johnson; secretary of state, Frank Marsh; treasurer, Edw Gillette; state superintendent of public instruction, Wayne Reed; chief justice, Robert G. Simmons.

The legislature of 1947 enacted laws providing for a co of industrial relations, adjusting salaries of the constitutiona elected state officials, providing a tax on cigarettes for the fi time, authorizing a building program for state institutions w proceeds of a 1.1 mill levy on real property, authorizing the co munity property tax and extending provisions of the anticlo shop amendment to the state constitution. The legislative co cil, composed of 16 legislators, was directed by the 1947 leg lature to investigate and report on proposed changes in st budgetary procedure, centralization of the state university a the teachers colleges, allocation of proceeds of the gasoline t laws relating to schools and revision of the school code, completion of panels and murals in the state capitol and state's public assistance program.

**Education.**—Elementary and secondary education is generally direc by local school districts of which there were nearly 7,000 in 1947, w some supervision from the state superintendent and with slightly m than $1,000,000 annual state aid. The total enrolment in elementary a secondary schools in 1946 was 230,147, and the teaching staffs numbe 12,125. Expenditures for 1945–46 were $29,530,870. Higher educat is directed by the state university at Lincoln and four state teach colleges.

**Social Insurance and Assistance, Public Welfare and Related Programs.** The state appropriation for public assistance for the 1947–49 period v $36,406,284, of which $18,402,019 were federal funds. In Oct. 1947 number of persons receiving general relief was 1,513, and each recei a monthly average of $28.15. At the same time 7,375 dependent child received an average of $29.42 monthly aid; 471 blind persons recei a monthly average of $41.32; 24,351 persons received a monthly aver of $37.61 for old-age assistance. The state maintained 5 correctional penal institutions with a population of 1,154 as of July 1, 1947, a 11 other institutions for children, mentally ill, and other depender with a population of 6,648. These institutions were under the su vision of a board of control to which the state appropriated $13,921, for 1947–49.

**Communications.**—The total highway mileage of the state in 1947 v 100,666. State appropriations for highway purposes for 1947–49 w $16,500,000 plus $11,500,000 in federal funds. In 1947 there were r airports in the state. Total railway mileage in the state in 1947 v 6,326. Fifteen radio stations operated in the state, eight of which w located in Omaha and Lincoln.

**Banking and Finance.**—State banks numbered 282 in 1947 with to assets of $395,523,900. There were also 44 building and loan associatio with assets of $80,963,914; 127 credit associations and credit unio with resources of $12,316,790. The assets of eight trust compan amounted to $17,313,701. National banks in July 1947 numbered 1 with resources of $938,461,000. The total assessed valuation of the st as determined in Aug. 1947 was $2,316,658,000. The tax rate for st purposes was set at 5.99 mills, calculated to produce $13,876,783. R ceipts for the fiscal year ending June 30, 1946, were $57,429,745, a expenditures amounted to $56,984,705. Total appropriations for 1947— were $117,631,050, including unexpended balances and $35,892,230 fe eral aid. The state had no bonded debt, though that of local subdivisio in 1946 amounted to $50,132,457. This did not include the indebtedn of the public power and irrigation districts which, on July 1, 194 amounted to $40,381,000.

**Agriculture.**—The total acreage harvested in 1947 for the crops listed

*Leading Agricultural Products of Nebraska, 1947 and 1946*

| Crop | 1947* | 1946 |
|---|---|---|
| Corn, bu. | 152,775,000 | 231,362,0 |
| Wheat, bu. | 95,252,000 | 90,677,0 |
| Oats, bu. | 62,384,000 | 71,708,0 |
| Barley, bu. | 10,516,000 | 11,529,0 |
| Potatoes, bu. | 8,960,000 | 11,725,0 |
| Sugar beets, tons. | 876,000 | 825,0 |
| Alfalfa hay, tons. | 2,101,000 | 1,786,0 |
| Wild hay, tons | 2,400,000 | 1,836,0 |

*Estimated Nov. 13, 1947.

table was 18,305,000. As of Dec. 1, 1947, the total farm income for year was estimated to be about $1,250,000,000, exclusive of government payments, as compared with $899,710,000 for 1946.

**anufacturing.**—Manufacturing is not of major importance in the econ- of the state. Most establishments are engaged in the processing of 1 products. Although no comprehensive figures were available after 9, it was estimated that employment by concerns covered by the nployment compensation laws would total 149,000 as of Nov. 1947.

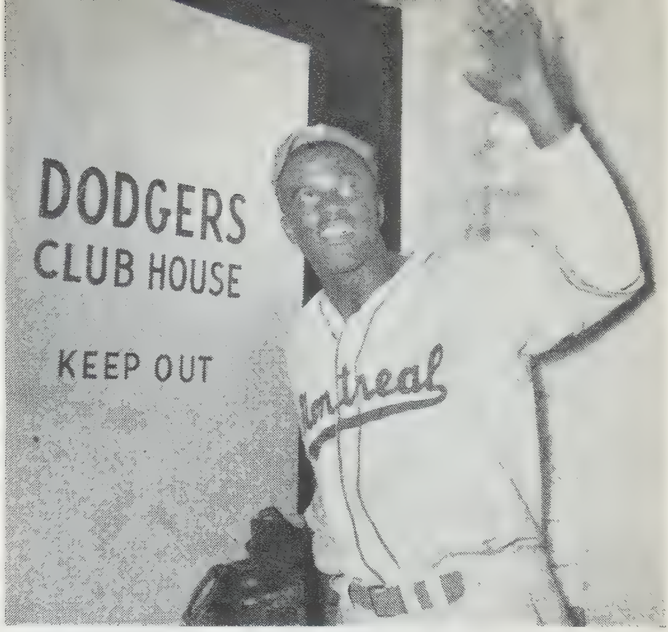
**ineral Production.**—Aside from clay, sand, gravel and building stone, t of which is consumed locally, the state has no mineral wealth of sequence. There are deposits of petroleum which produce an annual out of approximately 5,000,000 bbl. (A. C. BE.)

**crology:** *see* OBITUARIES.

**groes, American.** There was measurable improvement both in status and integration of the gro in the armed forces. Negro personnel totalled 58,437 or % of the peacetime army, with an 8.3% participation in rseas assignments. Commissioned and warrant officer nums reached 937, of whom 110 were in the regular army, with adets at West Point. Navy Negro personnel reached 31,844 l the policy of admitting Negroes to regular commissions was ugurated.

**egal and Political.**—Despite failure of federal legislation national Fair Employment Practices committee (F.E.P.C.), ilynch and anti-poll-tax laws, there were significant advances the civil rights front. Two presidential commissions, one on il rights and the other on higher education, presented detailed orts revealing the extent of discriminatory practices against Negro and other minority groups and took a forthright stand inst such discriminations in law and practice. Two immete results of the report of The President's Committee on vil Rights were the strengthening of the civil rights' division the department of justice and a precedent-breaking filing by attorney-general of a supporting brief in the case before the S. supreme court contesting restrictive real estate covenants. o decisions of United States courts declaring South Caroa white primary legislation unconstitutional were granted rough the 4th U.S. circuit court of appeals upholding the iginal verdict of Judge T. Waties Waring. The U.S. supreme urt also invalidated several Mississippi court convictions on e grounds of evidence of the systematic exclusion of Negroes om jury panels. Documented charges of widespread social, onomic and civil discrimination were filed by the National sociation for the Advancement of Colored People (N.A.A.P.) and supporting organizations before the United Nations d were received by the assistant secretary-general for social airs for reference to the appropriate U.N. commissions. Simr representations and legislative recommendations for a world arantee in an international bill of rights were made to the N. Human Rights commission. The American Heritage undation, sponsors of the Freedom Train, set a policy of peritting no stops on this tour of historic documents where guartees of unsegregated access were not obtained: accordingly heduled stops at Memphis, Tenn., and Birmingham, Ala., were ncelled, while other southern cities, notably Atlanta, acceded the stipulation. As gauged by press comments and resoluons of church and other civic organizations, liberal sentiment pporting this and similar progressive stands indicated, even in e south, increasing public sentiment for more consistent demoatic practice.

**Industrial and Economic.**—Despite employment set-backs ere was some definite improvement on the Negro labour ont. Agitation for F.E.P.C. legislation continued strong; the S. supreme court supported the railway firemen's suit against e Brotherhood of Locomotive Firemen for restricting promoon of Negro firemen. As a result of threats of outlawing the ion by the N.Y. State Commission Against Discrimination, he Brotherhood of Railway and Steamship Clerks, A.F. of L., removed its membership restriction clauses and gave full voting rights to Negro auxiliary locals. The United Auto Workers, C.I.O., elected a Negro to its executive council, and Negro participation, particularly in C.I.O. unions, moved forward considerably.



JACKIE ROBINSON, first Negro player to enter major-league baseball, joined the Brooklyn Dodgers as first baseman in April 1947

Under F.E.P.C. and consumer pressures, the employment and upgrading of Negroes gained measurably, especially in public utilities, retail department stores and soliciting salesmen.

**Educational and Cultural.**—The President's Commission on Higher Education advocated as an integral part of its report the complete elimination of educational segregation, and recommended explicit provision in all future federal aid and national educational projects forbidding discrimination on grounds of race, colour or creed. A delayed minority report of four southern members called for gradual application of the above drastic recommendations. In the St. Louis Roman Catholic diocese, after group defiance of an episcopal order abolishing segregation in the parochial high schools, Archbishop Joseph Ritter threatened excommunication for noncompliance, and organized resistance ceased. In Gary, Ind., similarly, a strike against an order abolishing segregation in the high schools was broken by administrative and school board insistence. The N.Y. state department of education proposed a substitute plan for the Austin-Mahoney bill which would effectively guarantee nondiscrimination in that state's public and private schools. The Oklahoma and the Texas decisions upholding segregation in their state universities was appealed to the U.S. supreme court.

As against the 1946 registration of 53,030 Negro college students, *The Crisis* reported a total of 74,095 with 6,052 bachelor degree graduates, 360 master's degrees, 8 Ph.D.'s and 360 professional degrees in 1947. On both the faculty and the student level, integration of Negroes in mixed colleges continued. Charles S. Johnson was inaugurated Nov. 7 as the first Negro president of Fisk university. Dr. E. Franklin Frazier was elected president of the American Sociological society. Ralph J. Bunche, organizer and director of the Trusteeship division of the U.N., was chosen head of the U.N. secretariat for Palestine, after having drafted the report of the visiting U.N. commission to Palestine. Actors Equity association gave the National theatre of Washington, D.C., until May 31, 1948, to change its policy of not admitting Negro patrons; otherwise, Equity members would be forbidden to appear there. *Deep Are the Roots* and *Anna Lucasta* made successful debuts in London, with *Finian's Rainbow* to follow. Canada Lee co-starred notably with John Garfield in the film, *Body and Soul.* Mrs. Edith Isaacs brought out a definitive history of *The Negro in the American Theatre;* John H. Franklin, a comprehensive history of American Negroes entitled *From Slavery to Freedom.* Frank Yerby duplicated his 1946 best-seller success with a second novel, *The Vixens,* and Willard Motley's *Knock on Any Door* was a similar success. Jackie Robinson, of the Brooklyn Dodgers, first Negro in major league baseball, received the Comiskey Memorial award of the Baseball Writers' association as the "Outstanding Rookie of the Year." Negro players were taken on the major league teams of Cleveland and St. Louis. Several interracial games broke new precedents in intersectional football games between southern and northern teams. (*See* also LYNCHING.)

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## Nehru, Jawaharlal

(1889– ), Indian statesman, historian and writer, was born on Nov. 14 at Allahabad of a distinguished Hindu family. For his early career, see *Encyclopædia Britannica.* Next to Gandhi, Nehru was regarded as the most influential of Indian nationalist leaders. After the outbreak of World War II, he split with Gandhi over the latter's insistence on nonviolent resistance in the event of a Japanese invasion. After the Congress party issued a mass call for a large-scale civil disobedience movement on Aug. 8, 1942, the British authorities arrested Nehru and other nationalist leaders. During his imprisonment at Ahmadnagar fort, Nehru wrote *The Discovery of India* (publ. 1946), a distinguished historical work. He was released on June 14, 1945, and took a leading part in negotiations with the British cabinet mission in New Delhi in March 1946. The following May, he was elected president of the Congress party and later head of the first all-Indian Executive council (the "caretaker government").

Although Nehru originally opposed the partition of India into separate Moslem and Hindu states, he subsequently yielded and upon India's attainment of freedom on Aug. 15, 1947, he became prime minister of the new dominion of India. He denounced the rioting that rocked India after independence and declared, Sept. 9, that his government would meet the crisis "on a war basis." On Nov. 25, he bluntly charged that tribal rioting in Kashmir was being incited by high Pakistani officials.

## Nepal.

An independent kingdom lying between Tibet (N.), Pakistan (E.) and India (N.E., S. and W.) and including Mt. Everest. Area: *c.* 54,000 sq.mi.; pop. (1942 est.) 5,574,000. Capital: Kathmandu (pop. *c.* 108,800). Sovereign: Tribhubana Bir Bikram. Prime minister: General Sir Padma Shumshere Jung Bahadur Rana.

**History.**—Far-reaching plans for constitutional and social reforms were announced by the prime minister in May: freedom of the press, of speech and the right of free association were guaranteed. As a result of the measures taken by the prime minister to implement these promises the Nepal national congress called off the agitation for civil liberties which it had been organizing earlier in the year. A United States good-will mission to Nepal led to the signature of an executive agreement of friendship and commerce and the establishment of diplomatic relations between Nepal and the United States (April. 25).

(J. RA.)

## Nervous System.

Several authors reported instances of cure of such fatal disease as tuberculous meningitis by streptomycin, an antibacterial agent with unusual ability to retard the growth of the tubercle bacillus. C. P. Mehas and W. E. Truax reported a case of tuberculous meningitis in a woman, 31 years old, who recovered following the injection of 282 grams of streptomycin. The total perio treatment was 175 days. The patient was cured but develo partial deafness in the left ear with a left lateral nystag (oscillatory movements of the left eye from side to side) inability to stand erect without swaying.

E. Appelbaum and C. Halkin reported a cure in a nine- old boy who had tuberculous meningitis. He was treated 27 days with intramuscular and intrathecal (spinal canal) in tions of streptomycin. This child was perfectly normal months after the beginning of the meningitis.

Paul Rhoads reported a case of tuberculous meningitis i 19-year-old girl who had been sick for 22 days. She develo deafness during the course of her treatment, but after treatm was stopped the deafness disappeared.

S. A. Waksman stated that tuberculous meningitis was initely arrested by the use of streptomycin. Treatment consis of large doses of streptomycin injected into the muscles into the spinal fluid by way of the lumbar and cisternal (ne routes. H. Wissler and M. Streit reported a case of tubercul meningitis in a two and one-half-year-old child. They gave b intramuscular and intraspinal injections of streptomycin. intramuscular injections were given for 25 days and the in spinal (intrathecal) injections for 54 days. Their patient proved but was not regarded as definitely cured. The auth warned that streptomycin may cause permanent damage in form of blindness, deafness, internal ear disturbances (la rinthine) and defective intelligence.

**Epilepsy.**—A. E. Loscalzo reported on a full three ye study with 3 methyl-5, 5-phenylethylhydantoin in 67 co-ope tive epileptic patients. He concluded that the seizures w reduced in approximately 60% and that the emotional sta was improved consistently. New drugs for epilepsy were rece ing extended controlled study. (*See* also PSYCHOSOMATIC ME CINE.)

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## Netherlands.

A kingdom of northwest Europe, bounded the north and west by the North sea, on t east by Germany and on the south by Belgium. Area: 13,4 sq.mi.; population (census, May 1947, provisional figures) 635,936. Chief towns (pop. census May 1947, provisio figures): Amsterdam (cap., 807,490); Rotterdam (645,417 The Hague (534,135). Language: Dutch; religion: Christi (1947 est., Dutch Reformed church 40%, Roman Catho 40%). Ruler: Queen Wilhelmina; prime minister: Dr. L. J. Beel.

**History.**—The changed economic conditions, arising out the practical disappearance of Germany as Holland's seco most important customer and main industrial supplier, ma themselves severely felt during 1947. Negotiations with t military authorities of the U.S.-British zone of occupation, which Belgium also took part, failed to produce the desir diversion of shipping traffic from Hamburg and Bremen Rotterdam and Antwerp. These conditions further strengthen the already existing economic collaboration between Hollar and Belgium, and the year saw the practical fulfilment of mo of the provisions of the Benelux agreement, the final aim which was full customs union between Holland, Belgium ar Luxembourg.

[The Linggadjati agreement with the new Republic of In- iesia, granting *de facto* recognition to the republic, was ied on March 25, but failed to bring about the expected icable settlement between Holland and its most important mer colony. Adopted as a compromise between parties who l not given up certain fundamental differences in their view- nts, it brought difficulties of interpretation as soon as it ie to the practical execution of the rather vaguely worded eral principles. Negotiations broke down on July 17, and Dutch, declaring themselves responsible *de jure* for law l security, then launched a military operation against the ublic which gave rise to a complaint to the United Nations urity council by Australia and India. The council passed a se-fire resolution on Aug. 1 and a vote on Aug. 25 for an nediate investigation by a consular commission and for the itution of a Three Power committee to bring the parties ether again in renewed negotiations. (*See* NETHERLANDS DIES.)

)n Oct. 15 a bill was passed placing the Netherlands king- n under the temporary regency of the heiress to the throne, ncess Juliana, to afford Queen Wilhelmina (*q.v.*) the oppor- ity of a much needed rest from state affairs. The queen umed her duties on Dec. 1. (F. H. Aw.)

**ducation.**—In 1946: secondary schools (day) 291, pupils 84,135, ening) 128, pupils 13,573; schools for mentally or physically de- ive children 171, pupils 20,392; training colleges for teachers 86, lents 5,748. In 1945: infant schools 1,963, pupils 209,726; elemen- schools 7,845, pupils 1,311,798; technical and domestic science ools 672, pupils 154,523; agricultural training schools 192, students 351. Universities, 1947 (including the *hogescholen*) 10, students 327.

**inance.**—Draft budget 1948: ordinary services, estimated, revenue, 38,200,000 guilders; expenditure 2,378,100,000 guilders; extraordi- y services, estimated, revenue 2,841,900,000; expenditure 3,909,700,- guilders. National debt (Jan. 1, 1947) 17,166,926 guilders (nomi- sum); bank note circulation (Aug. 1947) 2,781,000,000 guilders; l reserve (Aug. 1947) 502,105,000 guilders. Exchange rate (July 7) 1 guilder = 37.75 U.S. cents.

**rade and Communication.**—Foreign trade: imports (1946) 2,145,054,000 ders, (Jan.–June 1947) 1,036,240,000 guilders; exports (1946) 784,- ,000 guilders (Jan.–June 1947) 740,468,000 guilders. Communications transport: (1947) roads suitable for motor traffic 8,092 mi.; railways n to traffic 1,784 mi.; navigable waterways (1946) 4,405 mi.; air- s, distance flown by civilian airways (Royal Dutch Airlines K.L.M. 6) 11,185,149 mi., (Jan.–June 1947) 6,875,000 mi. Shipping: total nber of ships (Jan. 1947) 812; tonnage 1,693,884; new ships built 46) 44; tonnage 132,971. Ships entered (1946) 6,468; tonnage 251,799; liners cleared 6,185; tonnage 13,014,904. Road traffic (April 7), vehicles licensed: civilian cars 64,400, trucks 57,300, vans 3,300, es 3,300, motorcycles 77,200. Radio sets (Jan. 1947) 697,279; radio tribution connections (Oct. 1946) 458,995.

**Agricultural and Mineral Production.**—Agricultural exports (1946) 385,- ),000 guilders; (Jan.–June 1947) 293,500,000 guilders. Industrial ex- ts (1946) 401,900,000 guilders; (Jan.–June 1947) 448,800,000 lders. Production (harvest 1946, revised figures) in short tons: wheat ,288; rye 502,400; barley 194,310; oats 468,132; pulse 87,555; rape d 5,457; flax, rippled 61,545; linseed 8,795; potatoes 4,742,999. Pre- inary estimates for harvest 1947: wheat and rye 879,000; other grain ps 672,000. Mineral production in short tons (1946): coal 9,141,500; t 191,417; cement 443,700; bricks (number) 544,100,000. Figures for iron and ferro alloys and zinc were not available; in 1938 these re respectively 304,260 and 22,550 short tons. (*See* also CURAÇAO; RINAM.)

**etherlands Colonial Empire:** *see* CURAÇAO; NETHER- NDS INDIES; SURINAM.

**etherlands Indies.** The Netherlands Indies stretch 3,000 mi. from east to west and 00 mi. from north to south, between 6° N. and 11° S. lati- de, and from 95° to 141° E. longitude. They include the ands of Sumatra, Java, the Celebes and Borneo (whose north- stern part is under British rule), and many smaller islands, to- ther with the western half of New Guinea. Area: 735,000 mi.; pop. (est. 1942) 72,000,000, all but 2.6% of them being digenous (Java 40,000,000, Sumatra 8,000,000, the Celebes 00,000, Borneo 2,500,000). Capital: Batavia (pop. 1930, 5,184). Languages: Malay is to a certain extent a language intercommunication between different population groups eaking 25 main languages and 250 dialects; Dutch is increasingly used. Religion: Moslem (90%), Christian (*c.* 2,500,000) and Hindu (*c.* 1,000,000). Lieutenant governor general: Dr. Hubertus Johannes van Mook. Indonesian Republic: president, Achmed Soekarno; prime minister: Sutan Sjahrir.

TWO MACHINE GUNNERS captured during the fighting in and about Bandoeng, West Java, in Aug. 1947

**History.**—The year 1947 was characterized by successes in implementing the 1946 Linggadjati agreement for the formation of a United States of Indonesia, to come into force in 1949, in the eastern part of the archipelago and in Borneo, against its partial failure in the territories of Java and Sumatra. East Indonesia, having formed an autonomous state of that name toward the end of 1946, and being recognized as such by the Netherlands, applied its energies to the completion of its internal political organization, a president and parliament being duly elected, and to the rehabilitation of its shattered economy. Similar developments in Borneo brought early results, in particular through the initiative of the young sultan of Pontianak in West Borneo, Hamid II, answered by a federation of his equals in the eastern half of the island. Co-operation with Dutch administrative and economic experts went smoothly, and provided tangible proofs that the Linggadjati scheme of reforms—which also forecast co-operation with Holland in a Netherlands-Indonesian union—presented a workable basis for the future.

In Java, however, the attitude of the Indonesian republic remained doubtful. The Linggadjati agreement, ratified by the Dutch parliament in Dec. 1946, went slowly through a ratification procedure at the capital Djokjakarta, and the document was at last signed formally by the republican delegates, together with the Dutch commissioners-general, in March. It was clear, however, that fulfilment of the terms of the agreement and a cessation of lawlessness and terror would be more difficult to accomplish. On May 27 the commissioners-general submitted a memorandum to the republic which summarized a joint Dutch-Indonesian program for financial and economic reconstruction on which agreement had been reached by the delegations, together with a proposal to bring about its fulfilment against eventual extremist opposition; the latter project aimed at the creation of a joint Dutch-Indonesian *gendarmerie* or armed police force, which would have to crush internal anarchy. On this proposal, contacts with Jokjakarta, the republican headquarters in Java, ceased forthwith, and the hitherto co-operative republican cabinet headed by Sutan Sjahrir had to resign. The U.S. offer of mediation was rejected by the republic, and both sides prepared for a showdown.

On July 27 Dutch forces sallied forth from their perimeters at Batavia, Bandoeng, Semarang and Soerabaja on Java, and Palembang, Medan and Padang on Sumatra. Meeting little organized opposition, they quickly occupied the western and eastern parts of Java, as well as wide areas in south and east Sumatra; troops were then concentrated for a sweep over the central part of Java, and the republic, confined to this part of its former territory and out of touch with Sumatra, seemed to have entered on its last days.

Late in July, however, the United Nations Security council intervened in the conflict, which was interpreted as endangering world peace, and on Aug. 1 it came forward with a resolution calling on both sides to end hostilities. Lengthy debates were held on the situation in the Indies; these discussions threw into relief the international political implications of conflict in a country of Indonesia's strategic importance. Finally the Security council asked for information on the facts of the case from consuls of various countries accredited in Batavia, who were commissioned to submit a joint report. It offered to mediate between the parties and established a commission of three members (representing Belgium, Australia and the U.S.); this commission would have to contact the Netherlands authorities in Batavia and the republican leaders in Jokjakarta in order to bring about an end to the political deadlock; it arrived in the Indies on Oct. 26. After some local investigations, the commission prepared the way for renewed discussions between Dutch authorities and a delegation from the republic. In order to provide a neutral meeting place, the U.S. ship "Renville" was sent to Batavia harbour, and the first talks under United Nations' patronage took place on board on Dec. 8.

**Trade and Communication.**—Production capacity in 1947 was reduced to 55% of the 1939 level; exports in 1947 were estimated at $105,000,000, as against $351,000,000 in 1940, and imports would be much greater, mainly for reconstruction purposes. Communications: it was expected that the ocean-going merchant fleet would be back at the 1939 level by the end of the year, but inter-insular shipping would need more time for recovery (1939: ocean-going and inter-insular shipping, 214 ships of 1,007,000 gross tonnage); losses in World War II and after in the railroad and tramway system amounted to $123,000,000, and the cost of reconstruction (to take five years) was estimated at $66,000,000; cost of reconstruction of postal, telegraph and telephone systems (five to ten years) was estimated at $15,000,000.

**Agriculture and Mineral Production.**—In view of the country's mainly agricultural character, the program of postwar reconstruction was first concerned with an increased agricultural output. War losses had been estimated at $528,000,000, and of the western-owned plantations at $253,000,000 (rehabilitation to cost $330,000,000 there). Indonesian grain production (rice and maize) was estimated at 5,060,000 short tons, 72% of the 1940 figure. In mineral production war losses in the oil industry and other branches of the mining industry amounted to $217,000,000; the tin industry made a rapid recovery, production for the first four months of 1947 being 5,480 short tons of ore and 1,650 short tons of pure tin.

**Industry.**—Gross production before World War II was estimated at a value of $211,000,000 annually. Total war losses were estimated at $160,000,000 and rehabilitation costs at $113,000,000. In 1947 industrial enterprises in the areas returned to Dutch administration worked at one-third of 1939 capacity. (W. G. P.)

**Neutrons:** *see* ATOMIC ENERGY; PHYSICS.

## Nevada.

Nevada was admitted to the union of states on Oct. 31, 1864, as the "Battle-born state"; it is best known, however, as the "Silver state." Land area, 109,802 sq.mi.; water area, 738 sq.mi.; it ranks sixth in size among the states. Population was 135,414 (est. 1946, U.S. census bureau) a decrease of 24,376 from the estimated wartime peak. The capital is Carson City (2,478). Reno (21,317), Las Vegas (8,422), Sparks (5,318), Ely (4,140) and Elko (4,094) are the largest cities.

**History.**—The 1947 legislature passed a greater number of laws than any previous session; included in the enactments were greatly increased appropriations for Nevada's schools, increased salaries for officials, deputies and stenographers and a state retirement act. Gambling taxes were doubled; a cigarette measure was enacted; and measures were passed to increase the r enue from civil actions, liquor and marriages. Laws to allow closed shop died in committee, but a state retirement act enacted. Legislation passed to aid veterans was negligible, the appropriation for the Nevada national guard was eliminat

Revenue from Nevada's gambling law for the fiscal year J 1, 1947, showed that at least $30,988,497 passed over gambling tables, compared with $21,575,472 in the previous cal year. As of July 1, 1947, the state's new gambling tax 2% on all gross revenue went into effect and was estimated net Nevada more than $1,000,000 per year in receipts.

On Jan. 1, 1948, state officers were: governor, Vail M. P man; lieutenant governor, Clifford Jones; secretary of st John Koontz; state controller, J. P. Donovan; state treasu Dan W. Franks; superintendent of public instruction, Mild Bray; attorney general, Alan H. Bible; chief justice of supreme court, Edgar Eather.

**Education.**—On Jan. 1, 1948, Nevada had 197 elementary schools a total enrolment of 20,378; teachers numbered 699; high schools tota 41 with enrolment of 6,236, staffed by 290. Enrolment was 1,802 in kindergartens with 21 teachers. The total school enrolment was 28, as compared with 23,114 pupils on Jan. 1, 1946.

The 1947 legislature appropriated sufficient funds to pay teacher salary minimum of $2,400 yearly, graduating to a top minimum $4,080 for elementary and high school teachers with six years of col education and 20 years of teaching experience.

**Social Insurance and Assistance, Public Welfare and Related Programs** The amount spent for social security was $1,104,113.83 for the fis year ending June 30, 1947. Aid to the deaf, dumb, and blind expense $10,750. Nevada spent $2,047,441.89 for unemployment security be fits, an increase of nearly $400,000 over the 1946 total. On Jan. 1, 19 the state prison had 263 men and 3 women; total expenditures for fiscal year ending June 30, 1947, were $164,840.73. The state indust home had 26 boys and 5 girls on parole; support of the school for fiscal year 1947 was $28,990.99. The state hospital for mental dise had 342 inmates on Jan. 1, 1948; expenditures for the 1947 fiscal y were $208,578.73. The orphans' home had 82 inmates on Jan. 1, 19 and cost to the state for the 1947 fiscal year was $58,490.38.

**Communications.**—During 1947 highway mileage construction was 98, mi. of oil-surfaced highway and 40,949 mi. of gravel-surfaced highw Expenditures for the fiscal year which ended on June 30, 1947, w $7,689,523.78, an increase of $4,971,439.39 over the 1944–1945 fis year.

Railroad mileage was 1,783.40 mi. and railroad sidings totalled 1,07 mi. making a total of 2,860.11 mi. as of Jan. 1, 1948.

Airways and airports totalled 55 on Jan. 1, 1948, and consisted o army, 1 navy, 5 Civil Aeronautics administration; 4 state, 8 county, municipal, 17 commercial and 1 private. The office of the Civil Ae nautics administration recommended that 24 new airports, 21 exist airports and 3 seaplane bases be developed under the terms of the F eral Airport act during the fiscal years 1948–51.

During 1947 the Public Service commission granted a certificate public convenience and necessity to Bonanza Air Lines for the transp tation of passengers and express by aeroplane between Reno, Nev., Tonopah to Las Vegas, Nev. Four round-trip schedules per week w given over this route.

**Banking and Finance.**—On Jan. 1, 1948, there were 8 main office ba with 17 branches, a total of 25 banks serving Nevada; the total resour of these banks were $175,512,422.33; deposits were $166,556,924.89. First National Bank of Nevada had ten branches with total deposits $116,120,694.14 and resources of $122,592,903.19. The Nevada Bank Commerce, Reno, Nev., had 4 branches and total deposits of $14,7 898.27 and resources of $15,318,580.91. The Ely National bank w one branch at McGill had deposits of $6,447,865.44 and resources $6,856,836.63. The Bank of Nevada at Las Vegas with one branch Boulder City had deposits of $9,069,180.97 and resources of $9,6 594.92. The Security National bank of Reno with one branch at Bab had deposits of $8,525,647.38 and resources of $8,733,190.97. The F National Bank of Ely had deposits of $4,750,470.19 and resources $5,063,989.93. The Farmer's Bank of Carson Valley, Inc., Mind Nevada, had deposits of $4,003,050.50 and resources of $4,224,311. The First National Bank of Lovelock had deposits of $2,937,118.00 a resources of $3,084,014.42. Total resources of Nevada banks increa $5,157,773.34 during 1947, showing substantial growth during the ye

Of state funds on July 1, 1947, cash on hand was $5,607,592.19; t cash received, including cash balance on July 1, 1946, of $5,364,077. was $18,033,804.62; cash disbursements during the fiscal year w $12,426,212.43. There was no state debt on Jan. 1, 1948. Total securit held by the state treasury on Jan. 1, 1948, totalled $23,351,000. vada's Post-War Reserve fund totalled $1,553,000 in U.S. bonds $199,409.87 in cash. Actual cash balance in the state treasury on Jan. 1948, was $4,128,731.71.

**Agriculture.**—The 1947 farm and ranch production was about the sa

*Leading Agricultural Products of Nevada, 1946 and 1945*

| Crop | 1946 | 1945 |
|---|---|---|
| Barley, bu. | 680,000 | 640, |
| Potatoes, bu. | 672,000 | 760, |
| Wheat, bu. | 545,000 | 485, |
| Hay, tons | 666,000 | 613, |
| Oats, bu. | 308,000 | 351, |
| Corn, bu. | 70,000 | 64, |

that of 1945, according to estimates of the U.S. department of iculture; both acreage and yield varied little from the 1945 farm sus figures. The 1945 final figures gave the number of cattle and calves Nevada as 479,315, sheep and lambs 533,915, horses 38,338, mules ɔ8, goats 16,185, and chickens 284,627.

Cows milked during 1945 were 14,553 and milk produced was 10,524,- gal.; wool produced was 4,528,763 lb.

**ineral Production.**—The quantity and value of zinc produced in Nevada 1946 attained the highest levels in the history of the state, surpassing previous record of 1945 by 6% in quantity and 12% in value. ite Pine county (Ely) produced 62% of the state total value of the principal metals, gold, silver, copper, lead and zinc. Lincoln county oche) ranked second with 20% of the total value, leading the state the production of lead, silver and zinc. Scarcity of experienced miners dicapped production in 1947 in spite of higher metal prices. At the of the year there were only 4,067 men employed in Nevada mines as npared with 7,885 in 1942.

Production from nonmetallic mines was estimated at 3,800 tons. Protion of tungsten, mercury and manganese, however, was seriously afed by increased mining costs. (E. C. D. M.)

**ew Brunswick.** New Brunswick, one of the three maritime provinces of Canada, entered the ion in 1867. Area, 27,985 sq.mi., of which 512 sq.mi. are sh-water lakes; pop. (1941 census) 457,401 (1947 est.) 491,-o. Cities (1941) are Saint John (51,741), Moncton (22,763), edericton, capital (10,062).

**History.**—Liberal premier John B. McNair continued in ice. The most serious drought after 1934 curtailed hydroctric power. Cloud banks over the Nepisiguit watershed were ombed" with dry ice crystals to induce rainfall. The government reorganized the New Brunswick Planning board (defunct ter 1942) and gave it power to beautify the provincial counside and bring planning to villages and towns.

**Education.**—Enrolment in educational institutions for the 1944–45 school ır was 103,237. To promote education, the province increased teachers' nimum salaries to $1,100, established a teachers' college and gave addinal financial aid to school districts.

**Transportation.**—The "D. J. Purdy" was declared obsolete and for the st time in 130 years there was no river boat on the Saint John river. e Cape Tormentine trans-Northumberland Strait ferry terminal was exnded and improved to handle the new "M. S. Abegweit."

**Agriculture.**—Apple yield in 1947 was 330,000 bu. A federal horticulal experimental station was begun at Washademoak lake to encourage phases of orcharding. Livestock (cattle, horses, swine, sheep) producn in 1946 dropped to 445,000 (1944· 494,000). After 13 years of search, the Fredericton experimental farm announced a blight-resistant tato which it was estimated would save maritime farmers $1,000,000 year.

**Industry and Resources.**—Steps were taken to speed oil and gas flow at oney creek, which produced 390,000 bbl. of oil and 650,000,000 cu.ft. gas in 1946. The 1947 cut of hardwoods and softwoods ran to 270,-o,000 bd.ft., 20% higher than in 1946. The 1947 live mink show was e largest in New Brunswick's history, and featured new colour phases. periments with draggers for fishing proved successful and the reconruction department announced the number would be increased. Mineral oduction in 1946 amounted to $4,409,064.

**Production.**—Gross value of 1945 production was $254,926,964. Net lue was $133,984,112, which was 2.2% of Canada's total. Per capita oduction was $286.29. (C. Cy.)

**ew Caledonia:** *see* FRENCH OVERSEAS TERRITORIES.

**ewfoundland and Labrador.** A British colony of North America, with spended constitution. Area: Newfoundland 42,734 sq.mi.; abrador 110,000 sq.mi.; pop. Newfoundland 312,899 (1945); abrador 4,780 (1938). Capital: St. John's (pop. 1947, 57,849). anguage: English; religion (1945 census): Roman Catholic 5,952; Church of England 100,873; United Church 79,768; alvation Army 22,543. Governor: Sir Gordon Macdonald.

**History.**—In May a delegation of the national convention elected in 1946 to draw up recommendations on Newfoundnd's future form of government) visited Great Britain for dissions with the dominions office. The discussions hinged on e question of the future financial and fiscal relations between e two countries should Newfoundland opt for self-government. ritain made it clear that it was not prepared in this case to ntinue financial support, and the British government considred it impossible to guarantee to maintain its purchases, since ewfoundland was in the dollar area. Some members of the visiting delegation expressed their dissatisfaction with their reception in London. When a similar delegation visited Ottawa in June to find out on what basis Newfoundland might enter the Canadian confederation, the Canadian government provided all the information desired, at the same time maintaining an impartial attitude. The delegation returned to Newfoundland on Sept. 30 with a report containing information essential for the assessment of the position. In November the text of the proposed arrangements for Newfoundland's entry was sent to the governor of Newfoundland by the Canadian government; in his accompanying letter the Canadian prime minister emphasized that the decision rested with the people of Newfoundland. There seemed to be no clear-cut trend of opinion among Newfoundlanders at home: antipathy to confederation was less strong than formerly, but a movement known as the Responsible Government league received the support of some prominent businessmen and members of the legal profession. (J. RA.)

**Education.**—In 1946: schools 1,198; scholars 70,460; teachers 2,231 (including 307 uncertificated teachers).

**Banking and Finance.**—Revenue (est. 1947–48, in Canadian dollars) $35,702,500; expenditure (est. 1947–48) $37,574,300; public debt (1947) $73,996,000. Exchange rate, 1947: Canadian and U.S. dollar at par.

**Trade and Communication.**—Overseas trade, 1944–45 (in Canadian dollars): imports $65,898,707; exports (incl. re-exports) $65,588,498; reexports $2,297,495. Communication: roads (1946) main and secondary 2,200 mi.; railways 747 mi.; motor vehicles licensed (1945) 6,903.

**Mineral Production and Fisheries.**—Exports (1946–47, in short tons): fluorspar 31,383; iron ore 1,395,354; limestone 365,478; copper 19,646; zinc 104,809; newsprint 345,113. Value of fish exported (1946–47, in Canadian dollars): dried codfish $15,615,916; fresh and frozen fillets $4,516,804; herrings $4,908,267.

**New Guinea:** *see* NETHERLANDS INDIES; PACIFIC ISLANDS UNDER TRUSTEESHIP; TRUSTEE TERRITORIES.

**New Hampshire.** One of the New England states of the United States and one of the original group of 13, popularly known as the "Granite state"; area, 9,304 sq.mi., including 280 sq.mi. of water. Population (1940) was 491,524, of which 57.6% was urban and 42.4% rural. Estimated population, July 1, 1947, excluding armed forces overseas, was 547,000. In 1940 there were 490,989 whites, including 422,693 native-born and 68,296 foreign-born. Capital, Concord, with estimated population (1943) of 27,495. Other cities: Manchester (78,436); Nashua (33,914); Portsmouth (20,530); Berlin (16,480); and Dover (16,393), as of 1943.

**History.**—The general court convened on Jan. 1 and was adjourned on July 1. An unusually large number of important measures were passed, including the following: an act permitting women to serve on juries on a voluntary basis; an act creating an advisory fiscal officer, to aid the legislature in preparing budgets and framing appropriation bills; an act creating a state housing authority backed by $7,000,000 of state credit to assist municipal housing authorities in constructing low rent public housing for veterans of World War II. The Willey labour act was passed regulating labour union activities. Under its provisions employees may bargain for a closed or a union shop only when two-thirds of those voting and 50% of all employees vote by secret ballot in favour of the closed shop. Under the terms of an equal work, equal pay law, discrimination in wages because of sex was prohibited. The legislature authorized the convening of a constitutional convention in May 1948.

State officers in 1947 were: governor, Charles M. Dale; secretary of state, Enoch D. Fuller; state treasurer, F. Gordon Kimball; commissary general and adjutant general, Charles F. Bowen; attorney general, Ernest R. d'Amours; commissioner of education, Edgar Fuller.

**Education.**—In 1946–47 there were 154 one-room public elementary schools with a total of 3,540 pupils and 154 teachers; 381 classified public elementary schools with 45,296 pupils and 1,713 teachers; and 82 public high schools with an enrolment of 18,587, and 926 teachers. Total estimated expenditures for public elementary schools and high schools during the year 1946–47 were $8,750,000. The general court in its 1947 session passed an act increasing state aid to local municipalities for primary and secondary education from $400,000 to $2,000,000 annually. In 1940 private and parochial elementary and secondary schools had an enrolment of 25,007.

**Social Insurance and Assistance, Public Welfare and Related Programs.**—In June 1947 there were 2,517 cases on general relief with an expenditure of $90,151, as compared with 2,315 cases in June 1946 with an outlay of $72,272. Expenditures for public assistance under the Social Security act were $374,401, as compared with $314,198 for June 1946. The total for June 1947 included $268,466 for old-age assistance, $93,005 for dependent children and $12,930 for aid to needy blind. During the calendar year 1946, net contributions and interest to the amount of $3,700,000 became available for unemployment compensation, while $791,000 was disbursed in benefits to the unemployed. A total of 16,278 former service men and women received benefits of more than $3,300,000, a large increase over the number of beneficiaries and amounts paid in 1946.

On Jan. 1, 1944, there were 207 persons in prison and in reformatories in New Hampshire. The net appropriation for the state prison at Concord for the fiscal year ending June 30, 1947, was $150,113; and for the Industrial School for Committed Minors at Manchester, $108,313.

**Communications.**—At the end of 1944 there were 12,502 mi. of rural roads in New Hampshire, including highways under state, local and federal control. Disbursements from state highway funds for the calendar year 1945 amounted to $6,935,000. In 1945 there were 951 mi. of steam railways in the state. At the close of the same year there were 29,162 business and 75,868 residential telephones in operation.

**Banking and Finance.**—As of June 30, 1947, there were in New Hampshire 51 national banks with deposits of $171,745,000 and resources of $191,264,000, as compared with 51 banks with deposits and resources, respectively, on June 30, 1946, of $186,678,000 and $204,499,000. Fifty-six state-chartered banks reported deposits of $350,113,398 and resources of $390,743,788, as compared with 55 institutions reporting deposits and resources, respectively, of $333,919,000 and $371,790,000, on June 30, 1946. There were 25 state-chartered building and loan associations with resources of $19,937,724, as compared with $17,800,000 for the previous year. State-chartered savings banks and savings departments of trust companies reported deposits of $335,305,661.84 as of June 30, 1947, an increase of $17,379,932.69 over the total for June 30, 1946, and representing an all-time high record for savings deposits in the state. The Laconia Federal Savings and Loan association reported assets of $1,901,806 and members' share accounts of $1,381,311 on June 30, 1947, while the Manchester Federal Savings and Loan association reported assets of $13,535,029 and members' share accounts of $11,861,107, as of Dec. 31, 1946. Time deposits in savings departments of national banks within the state amounted to $42,924,000.

Cash receipts of the state treasury department for the fiscal year ending June 30, 1947, were $42,036,085.31; cash disbursements $41,660,618.94; cash balance, June 30, 1947, was $5,939,682.05. Cash balance July 1, 1946, was $5,564,215.68. Gross fixed bond and note debt, June 30, 1947, $8,285,000.00; net bonded debt, $4,673,768.43.

**Agriculture.**—In 1945 there were 18,786 farms in New Hampshire with a total acreage of 2,017,049 and of an average size of 107.4 ac. Estimated acreage from which crops were harvested or hay cut or which was planted in orchards amounted to 435,602. The total value of farm lands and buildings in 1945 was approximately $80,394,869. Estimates by the U.S. department of agriculture for 1946 reported cash receipts from farm marketings as $50,231,000, including such major items as chickens and eggs, $20,211,000; milk, $13,859,000; cattle and calves, $2,869,000; and harvested crops, $9,101,000. Government payments amounted to $1,817,000, in addition to which an estimated valuation of $7,350,000 was placed upon products used by farm households. It was estimated that cash receipts from farm marketings in 1947 would exceed those for 1946 by approximately 20%.

The estimated apple crop for 1947 was 838,000 bu., a little less than twice as large as that for 1946 and about 11% above the 10-year level for 1936–45. More favourable weather conditions resulted in a large increase over 1946 in the production of maple syrup. Severe drought in the late summer and autumn adversely affected certain crops, and a government estimate placed the potato crop at 893,000 bu., as compared with the 1,250,000 bu. produced in 1946.

Lumber production in 1945 amounted to 290,000,000 bd.ft. as compared with 356,000,000 bd.ft. in 1944. Severe forest fires in Oct. 1947 burned an estimated 20,000,000 ac. with losses running to almost $1,000,000.

**Manufacturing.**—State authorities estimated the value of products manufactured in New Hampshire in 1945 to have been at least $525,000,000. To this total textiles contributed about 28%, leather and leather products 25%, and paper and pulp 10%. Their contribution (63% of the total) was, however, relatively less than the 75% of the total which the same industries contributed in 1939. The number of persons employed in manufacturing in March 1946 was estimated at 93,800, as compared with the 1943 peak of 102,000, and gross wages and salaries paid in the same year were placed at $171,800,000.

In 1945 New Hampshire enjoyed an estimated business of $110,000,000 from recreational enterprises, which thus continued to rank next to manufacturing and ahead of agriculture as a source of income. Assessed value of recreational property was $49,713,788.

*Leading Agricultural Products of New Hampshire, 1947 and 1946*

| Crop | 1947 (est.) | 1946 |
|---|---|---|
| Corn, bu. | 528,000 | 533,000 |
| Oats, bu. | 224,000 | 259,000 |
| Hay, tons | 473,000 | 443,000 |
| Potatoes, bu. | 893,000 | 1,250,000 |
| Apples, bu. (commercial) | 838,000 | 456,000 |
| Maple syrup, gal. | 51,000 | 36,000 |
| Maple sugar, lb. | 10,000 | 12,000 |

**Mineral Production.**—Principal mineral resources were feldspar, m building stone (chiefly granite), brick clays, sand and gravel. In 1 New Hampshire ranked second among the states in the production mica. With the ending of the war there was a decline in the value of state's mineral production, the total for 1945 being but $801,000, compared with $1,166,000 for 1944. (W. E. Ss.

**New Hebrides:** *see* French Overseas Territories.

## New Jersey.

The third state of the U.S. to enter the uni New Jersey is situated on the middle Atlan coast between New York and Philadelphia. Its 1940 populati of 4,160,165 ranked it ninth among the states. The state bure of vital statistics estimated its population on July 1, 1947, 4,435,000, exclusive of those in the armed forces overseas. area is 7,836 sq.mi., including 314 sq.mi. of water. Capit Trenton (1940: 124,697). The largest city is Newark (42 760); second is Jersey City (301,173).

**History.**—The outstanding event in New Jersey in 1947 w the adoption of a new constitution to replace the 1844 char which had been amended on only four occasions in the 103-ye interval. Constitutional revision was the main goal of Govern Alfred E. Driscoll's first year in office.

The new constitution provides for a more liberal Bill Rights; better defined legislative power; a stronger, more sponsible executive; a simple, unified system of courts; sounder basis of taxation and finance; and a simplified, le expensive method of amendment. The following provisions m very briefly be noted: no person may be limited in his privileg because of race, colour, sex, religious belief, national origin ancestry; labour's right to organize and bargain collectively guaranteed to those in private employment; the legislature m provide for absentee voting by members of the armed forces peacetime; and it may provide for a verdict by not less th five-sixths of a jury in civil cases.

The term of assemblymen is increased from one to two yea and of senators from two to four, and the legislators may their own salaries; the legislature may not elect any admin trative, judicial or executive officer except the state audito and home rule for municipalities is encouraged. The governo term is increased from three to four years, and he may succe himself once; he is elected in odd-numbered years; and he given effective supervision over all executive department hea (except the auditor). The parole system is given constitution recognition, and civil service has a constitutional status.

The old "true value" of assessment is dropped; existing t exemptions are given constitutional status; transportation and from any school may be authorized within reasonable limi by the legislature; slum clearance can receive tax relief; and new limitation is placed on the state debt.

**Education.**—New Jersey had 1,594 elementary schools in 1947, 2 junior and senior high schools, 21 trade and industrial schools a numerous parochial and private institutions on the primary, secondar college and university levels, among the latter Princeton universit Stevens Institute of Technology and Seton Hall. Rutgers universit a state university since 1946, continued its rapid expansion.

Increased enrolments continued, with all institutions attempting improve the makeshift accommodations which featured the first postw year. New Jersey teachers enjoyed an average increase of $400 in salar but teacher shortage was still a problem.

**Social Insurance and Assistance, Public Welfare and Related Programs.**—The average monthly grant for old-age assistance in New Jersey, as June 30, 1947, was $40.76 (an increase of $7.46) and for depende children $78.49 (an increase of $13.34). Grants to the blind average $42.07, up $6.77, and general relief assistance averaged $49.29 per cas up $11.20.

**Banking and Finance.**—Deposits in 154 state banks, trust companies a savings banks totalled $2,621,195,000 on June 30, 1947, a drop of mo than $92,000,000 from June 30, 1946, mostly resulting from U.S. go ernment withdrawals since all other deposits increased more than $101 000,000. Government deposits generally dropped $194,282,000 to $116 906,000 in the same period. Of the 132 commercial banks, 79, wit 75.6% of total deposits, were members of the federal reserve syster Government securities made up 53.8% of the total assets ($2,843,923,00 of all the banks, compared with 60.5% the year before, while ca represented 13.6% of the total as compared with 12.9%. There was further reduction in the total real estate owned of $278,000, a drop

.2% from June 30, 1946. As of Jan. 1, 1948, the state's bonded debt ood at $81,080,000. Sinking fund assets of $23,393,246 left a net debt $57,686,755.

**Agriculture.**—About 2,000,000 ac., or 40% of New Jersey's land area, devoted to agriculture. New Jersey ranked high in potato production, th 13,140,000 bu. in 1947, a slight drop. Peaches increased to 1,617,- o bu., but the apple crop fell to 1,935,000 bu. Processed asparagus ok 21,450 tons of a crop which produced 1,144,000 crates additional r market. Tomato canning is an important industry; 292,000 tons went to that enterprise, with 1,925,000 bu. going to market.

An outstanding poultry state, New Jersey sent about 10,000,000 ickens to market; approximately 1,330,000,000 eggs, a great increase er the 1946 figure, were produced, and about 250 hatcheries produced ,000,000 chicks. The dairy industry ranks high with about 470,000,000 . of milk produced yearly by 156,000 milk cows of the 215,000 cattle the state.

**Manufacturing.**—The year 1947 saw relatively little labour disturbance; ere were no large-scale work stoppages. New Jersey industry continued ll speed ahead toward maximum peacetime production. The state is presented in 90% of all industries, with more than 8,000 factories and ops employing 200 different classifications of labour. There was conlerable plant expansion during the year. (S. Gn.)

## ew Mexico.

Fourth largest state in the southwestern United States, popularly known as the "Sunine state"; admitted to the union in 1912. Area 121,666 q.mi. (121,511 sq.mi. land, 155 sq.mi. water); pop. (1940) 31,818; rural 355,417; urban 176,401; native white 477,065; egro 4,672; foreign-born 15,247. On July 1, 1946, the bureau f the census estimated the population of the state at 528,997.

**History.**—The administration, legislature and congressional epresentation were Democratic in 1947. The chief officers of ne state elected in the 1946 elections were: governor, Thomas Mabry; lieutenant governor, Joe M. Montoya; secretary of tate, Mrs. M. A. Romero; auditor, E. D. Trujillo; treasurer, I. R. (Ray) Rodgers; attorney general, Clyde C. McCulloh; uperintendent of public instruction, Charles L. Rose; commisoner of public lands, John E. Miles. New legislation makes it felony to accept a bribe for altering an election ballot, proides for a survey of the state educational system and for a chool-lunch program.

**Education.**—For the school year 1945–46 there were 732 schools. The ural schools enrolled 45,760 pupils; employed 1,455 teachers, average alary $1,733.30; total expenditures were $5,326,432.86. Municipal chools enrolled 82,814, employed 2,362 teachers, average salary $2,037.50 nd total expenditures were $8,394,607.19.

**Social Insurance and Assistance, Public Welfare and Related Programs.**—During the calendar year 1947, $392,109 was paid out for civilian unmployment benefits; for unemployed veterans, $3,051,499; and for selfmployed veterans, $1,068,951.

On June 30, 1947, $628,000 had been spent for old-age and survivors nsurance, and $5,332,995.09 for public assistance.

The penitentiary appropriation was $189,500 for 655 inmates (Sept. ); insane asylum, $696,000, 980 inmates (Nov. 15); Los Lunas Mental ospital (the new name for the School for Mental Defectives), $164,000, 8 inmates; Industrial school, $97,500, 62 inmates (November); Girls' Velfare home $105,000, 122 inmates (December).

**Communications.**—New Mexico had an estimated 63,126 mi. of roads in 947: 9,957 mi. constituted the state highway system. The state highvay department expended $15,086,178.69. Steam railway companies operated 2,526 mi. of main track (1946). There were 103 airports and pproximately 832 mi. of airways operated by three scheduled air carriers. There were about 74,300 telephones.

**Banking and Finance.**—On June 30, 1947, there were 24 national banks vith deposits of $187,897,000; loans $58,341,000; investments $84,708,000; and 22 state banks with deposits of $68,009,000; loans $20,565,000; nvestments $31,452,000. Total resources of 12 building and loan associaions in 1946 were $6,537,394,62 and of 7 federal savings and loan associations $7,250,321.89.

**Table I.**—*Leading Agricultural Products of New Mexico, 1947 and 1946*

| Crop | 1947 (est.) | 1946 |
|---|---|---|
| ame hay, tons | 510,000 | 514,000 |
| Grain sorghums, bu. | 1,488,000 | 1,127,000 |
| Winter wheat, bu. | 9,120,000 | 2,648,000 |
| Corn, bu. | 1,904,000 | 2,256,000 |
| eans, bags | 273,000 | 308,000 |
| Cotton, bales | 160,000 | 145,000 |
| Cottonseed, tons | 64,000 | 58,000 |
| orage sorghum, tons | 84,000 | 159,000 |

The total of all state receipts for the fiscal year ending June 30, 1947, vas $55,666,160.87; expenditures $53,319,432.35. The gross and net lebt were respectively $22,569,000 and $22,343,248.93.

**Agriculture.**—The total value of agricultural production in 1946 was 67,178,000 (est.); acreage harvested 1,333,000 (est.). Livestock was alued at $112,736,000, Jan. 1, 1947.

**Manufacturing.**—Manufactured products were valued at $25,123,641 in 939; an average of 3,250 employees received $2,912,993 in wages.

**Table II.**—*Principal Mineral Products of New Mexico, 1947 and 1946*

| Mineral | Value, Year ending June 30, 1947 | Value, Year ending Oct. 31, 1946 |
|---|---|---|
| Copper | $20,404,404.94 | $12,927,701 |
| Potash | 39,296,180.00 | 15,035,037 |
| Coal | 6,011,226.68 | 5,351,388 |
| Zinc | 6,928,805.14 | 2,840,124 |
| Lead | 1,270,575.59 | 214,996 |
| Silver | 335,206.14 | 172,822 |
| Gold | 109,009.97 | 77,917 |

**Mineral Production.**—Potash was New Mexico's chief mineral in 1947. For the year ending Dec. 31, 1946, 36,714,473 bbl. of oil, valued at $55,071,709.50, were produced.

A marked increase in value of mineral figures between the two 12-month periods reported was largely due to better reporting of production to the state mine inspector. The reporting year was changed to a period ending June 30. (F. D. R.)

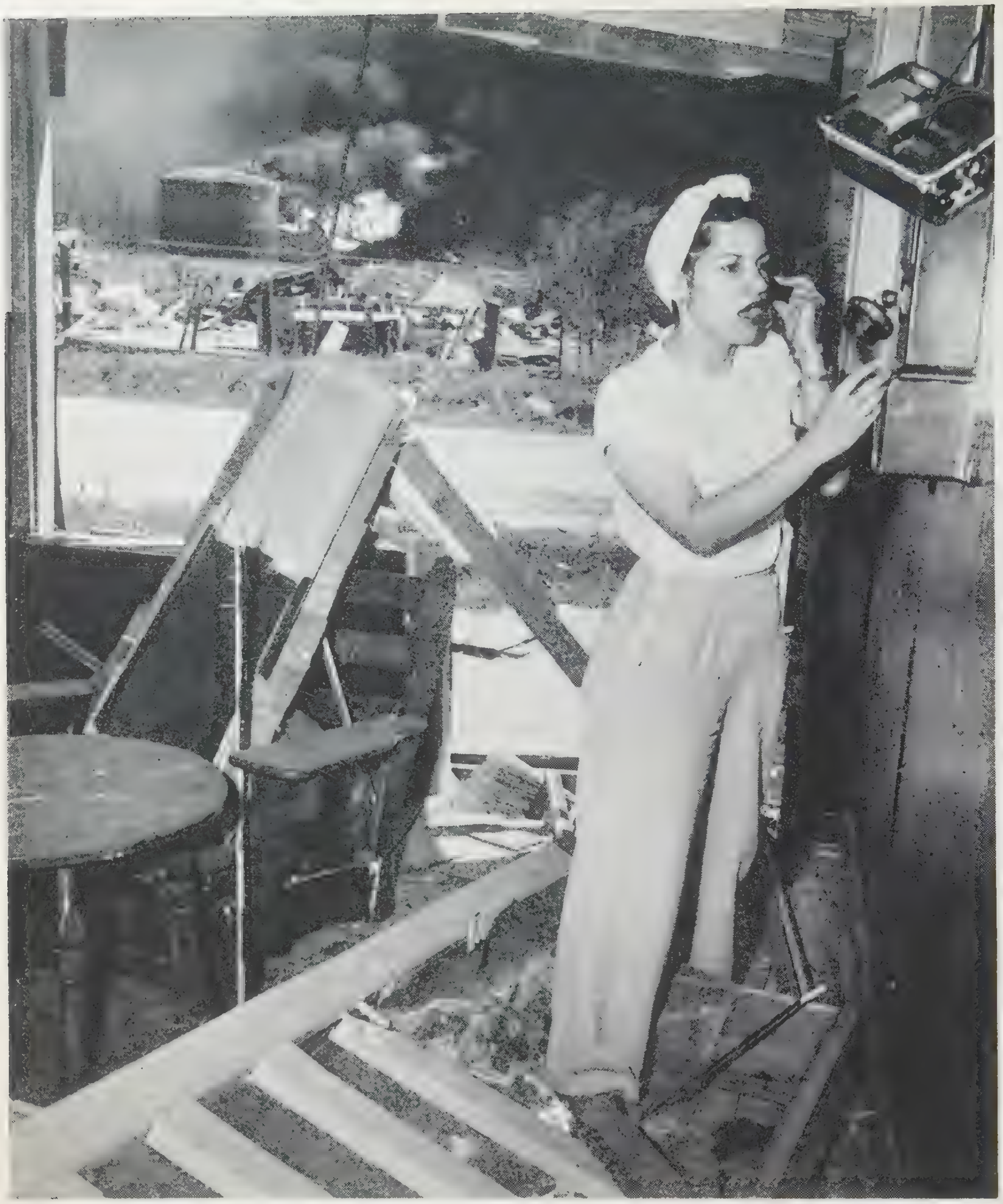
## Newspapers and Magazines.

Paper shortage, labour disputes, strikes and rising costs of production—all part of the nation-wide wave of inflation—made 1947 a difficult year for the newspapers and magazines of the United States.

In the news field, the year was relatively quiet, and there was no sign of the expected postwar spasm of sensationalism; economics, government and foreign affairs overshadowed the crime wave in the news columns. The United Press listed the "Ten Biggest News Stories of the Year" thus: (1) the high cost of living; (2) the "cold war" with Russia inside and outside the United Nations; (3) passage of the Taft-Hartley labour law and subsequent litigation; (4) the Hughes and the Meyers congressional investigations; (5) the Texas City, Tex., disaster; (6) the romance and marriage of Princess Elizabeth of England; (7) the partition of India; (8) the series of air disasters; (9) Arab-Jewish controversy over Palestine and the United Nations decision to partition that area and (10) the world series in baseball.

Labour disputes hit some leading newspapers early in the year. The 86-day strike of the American Newspaper guild against J. David Stern's *Philadelphia Record* and *Camden Courier* and *Post* (N.J.) which had started on Nov. 7, 1946, ended with the suspension of the newspapers on Feb. 1 and their later sale to the *Bulletin* company. The two Gannett newspapers of Rochester, N.Y., the *Times-Union* and *Democrat and Chronicle*, settled their strike on Feb. 8 after three months. The *Kansas City Star* and *Times* were shut down for 16 days, beginning Jan. 17, by a strike of contract carriers. During a strike that closed the *Colorado Springs Gazette-Telegraph* on Jan. 27, striking printers published a rival newspaper. The tie-up of Sherman H. Bowles's four newspapers of Springfield, Mass.—*News*, *Republican* and the two *Unions*—which began on Sept. 26, 1946, continued through the year, but the *News* resumed publication on Feb. 17, 1947, in spite of the unsettled strike. The *Asbury Park Sun* (N.Y.) was suspended and sold in February because of a printers' strike. The two newspapers of St. Petersburg, Fla., whose printers had been on strike since Nov. 20, 1945, received labour board permission in Feb. 1947 to ignore a union that would not bargain. Three newspapers of St. Louis, Mo.—*Globe-Democrat*, *Post-Dispatch* and *Star-Times*—were closed for three days by a pressmen's strike which ended April 15. The *New Bedford Standard-Times* (Mass.) in September took its labour troubles to the U.S. supreme court.

Before passage of the Taft-Hartley act in June, the International Typographical union and other unions spent $1,500,000 for advertisements in 110 newspapers to oppose the bill. At the 89th convention of the I.T.U. in Cleveland, O., on Aug. 22, Pres. Woodruff Randolph declared that his printer unions would sign no contracts with employers but would work only under "conditions of employment." Late in November the situation broke in Chicago. On Nov. 22, six Chicago newspapers com-



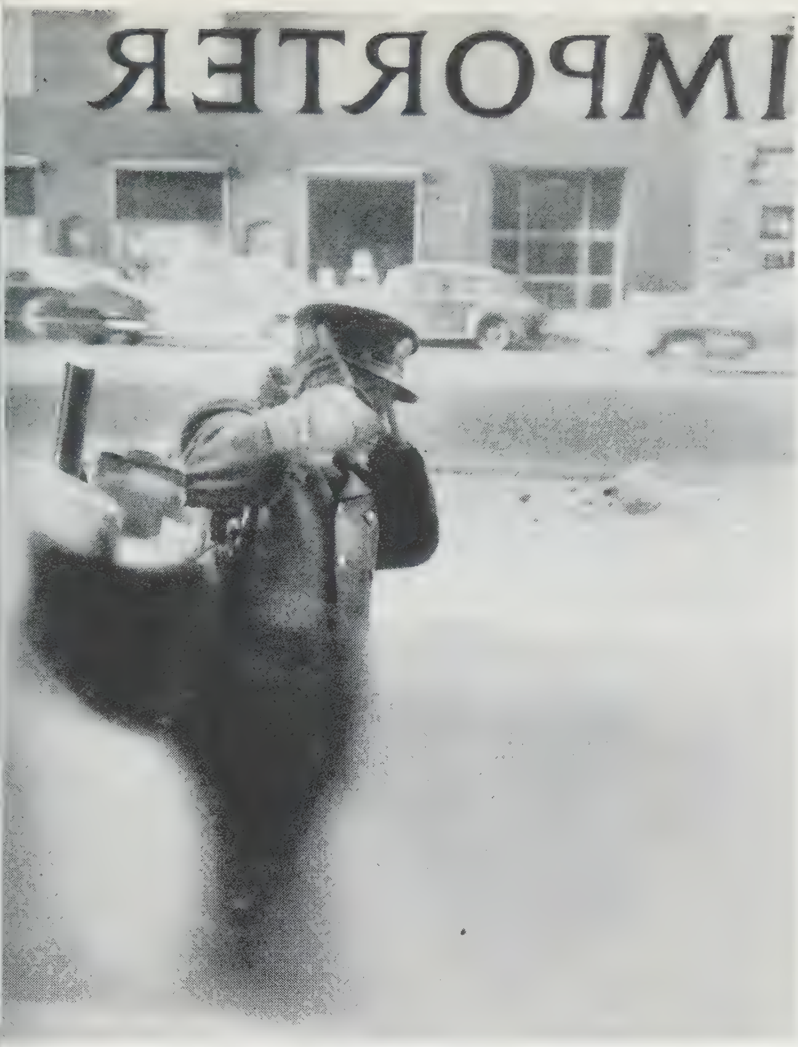
**NEWS**—Johnny Thompson of Acm Newspictures won first prize fo this dramatic picture, "Hell o Earth," taken during the Texas City disaster. Second prize winner wa Peter Marcus of the *Minneapoli Tribune* for "A Dog's Best Friend," and Jack Teehan, of Keene, N.H. won third prize for his picture, "Los and Found"

# "News Pictures of the Year" CONTEST WINNERS

These pictures were awarded first prize in the news, feature and sports categories, respectively, in the fifth annual "News Pictures of the Year" competition and exhibition, sponsored jointly by the University of Missouri School of Journalism and the *Britannica Book of the Year*. A total of 1,000 photographs were submitted in the competition.

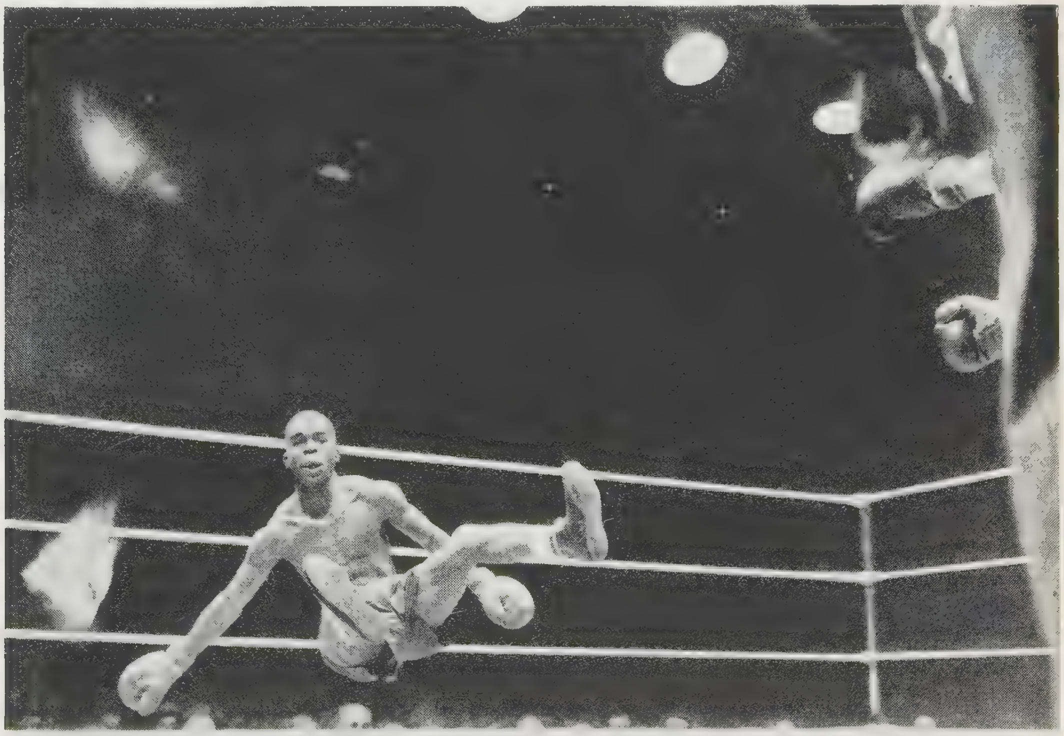
Judges were Joseph Costa of King Features, photo supervisor of the *New York Sunday Mirror Magazine* and president of the National Press Photographers Association; Frank J. Scherschel of *Life*; A. Aubrey Bodine, photographic director of the *Baltimore Sun* Sunday picture magazine; Robert Ghio, representing the University of Missouri School of Journalism, and Walter Yust, editor-in-chief of the *Encyclopædia Britannica*.

The 100 best pictures submitted in the competition were published in a book entitled *The Great Pictures—1948*.



**FEATURE**—Tom Johnson of the *Chicago Tribune* received first prize for this picture entitled "Ten Below." Second prize went to Francis Reiss of Columbia, Mo., for a *Life* picture, "New Yorkers Prove They Are Not Their Brother's Keeper." Two pictures tied for third place: "Contour Plowing," by Wallace Kammann of the *Minneapolis Star*, and "At the Races," by Hans Marx of the *Baltimore Sun* ←

**SPORTS**—First prize winner was this picture taken at a boxing match by Chester Gabrysiak of the *Chicago Tribune* entitled "With the Greatest of Ease." Winner of second prize was a golfing picture, "Body English," by Charles Knoblock of the Associated Press, and third prize went to Mathew Zimmerman of the Associated Press for another boxing picture, "Smash Hit" ↓



plained of "slow-down," and on Nov. 24 all their composing-room employees walked out. All Chicago newspapers then printed editions typewritten on Varitype machines and reproduced by photoengraving. Meanwhile, similar threats were heard on the three newspapers of Detroit. By December, 15 newspapers in eight cities were publishing photographically, with more than 1,500 employees on strike, and 239 other newspapers had I.T.U. contracts expiring before Dec. 31, all waiting for one of the test cases "to set the pattern."

After the suspension of the *Philadelphia Record* on Feb. 1, following the 86-day guild strike, the American Newspaper guild had a quiet year. Its strike vote taken five months before against the *Philadelphia Inquirer* was rescinded late in February, and the former employees of the *Camden Courier and Post* on Feb. 26 started a new daily *Free Press*. At its 14th annual convention in Sioux City, Ia., June 23–28, the guild reported 24,000 members and began a campaign for 40,000. After the withdrawal of Milton Murray, the guild in August voted for a new president for the first time after 1941 and elected Harry Martin of the *Memphis Commercial Appeal*. In November the guild officers filed the noncommunist affidavits required by the Taft-Hartley law.

The year 1947 brought great increase in newspaper operating costs and income. In May the Hearst papers announced a cost increase of 30% in one year; a study of one 50,000-circulation daily showed costs up 27%; another study of smaller newspapers showed costs up 32% and income up 28%; only newspapers of more than 50,000 circulation reported income rising faster than costs. Several studies showed circulation income greater than advertising. However, in spite of paper shortage, advertising income broke all records. Rises in sales prices were common; in March 1,252 newspapers were selling for 5 cents a copy, the *Chicago Tribune* went to 4 cents in February and the *New York Sunday Times* to 15 cents in November. After a total circulation gain of 4.8% in 1946, an even greater increase was expected for 1947.

The outstanding newspaper ownership change of the year was in Chicago. Marshall Field, in August, paid $5,338,000 for the employee-owned *Chicago Times*, afternoon tabloid, organized the Sun-Times company, moved his morning *Chicago Sun* from the plant of the *Daily News* into the *Times* building, converted the *Sun* into a morning tabloid on Sept. 29, and began issuing the two tabloids daily from the same plant, with a joint tabloid *Sunday Sun-Times*. Richard J. Finnegan continued as editor of the *Times*. In Philadelphia, the two newspapers of J. David Stern which were suspended on Feb. 1 were sold separately—the *Philadelphia Evening Bulletin*, which bought both, converted the *Record* into a Sunday newspaper on Feb. 9, and sold the *Camden Courier and Post* on May 14 to a new company headed by Harold A. Stretch, formerly of the *Inquirer*. On Dec. 15 the *New York Journal of Commerce*, owned by Bernard J. Ridder, paid $1,250,000 for the *Chicago Journal of Commerce*; it was announced that the two would be continued as separate newspapers. The *Seattle Star* (Wash.) suspended on Aug. 13, and in November was purchased by David Stern III, son of J. David Stern of Philadelphia. The 60-year-old *Brooklyn Citizen* (N.Y.) suspended on Aug. 29. John and Anna (Roosevelt) Boettiger, former publishers of the *Seattle Post-Intelligencer*, launched the daily *Arizona Times* in Phoenix. Among the noted newspaper centennials of the year were: the *Chicago Tribune* celebrated its 100th birthday on June 10 with a 28-page centennial edition transmitted by radio to 50 newspapers in 35 countries, and the publication of several historical books; the *St. Louis Post-Dispatch* celebrated on April 10, and a three-cent stamp was issued in memory of its founder, Joseph Pulitzer; the *Philadelphia Evening Bulletin* published a 24-page roto edition on April 12.

*A Free and Responsible Press*, the report of a three-y study conducted by the 13-man Commission on Freedom of Press, financed with grants of $215,000 by Time, Inc. a Encyclopædia Britannica and headed by Dr. Robert M. Hutch of the University of Chicago, was published late in March, f lowed by several volumes by individual members. Among steps toward world-wide press freedom during the year we meeting of a 12-member United Nations Subcommission Press Freedom in May; a proposed treaty presented in April Richard J. Finnegan of the *Chicago Times;* announcement an international meeting in Geneva, Switzerland, early in 194 a formal agenda proposed in August by the International ganization of Journalists.

Public hearings were held in April on the Mason bill (H 110) designed to exempt newsgathering from antitrust laws a to free the Associated Press from the 1946 ruling of the supre court, but the bill was not passed. Newspapers made vigoro protest against a proposal to increase second-class postal rat

Associated Press announced in August that 441 radio statio had associate memberships; many newspapers were involved the 259 new AM radio stations started during the year, and t number of newspaper FM station projects could only be es mated. The number of tabloid newspapers was said to ha risen to 48. United Press and Acme developed picture servi for television stations.

**U.S. Magazines.**—The year 1947 was a quiet one in t magazine world. Although circulations increased strikingly a available advertising was record-breaking, magazines faced t same difficulties of paper shortage and rising costs that em barrassed the newspapers. Few new magazine ventures we announced, and there were no notable demises. In one fiel church publications, circulation gains were most marked; o survey indicated that 57 Protestant and Catholic periodica showed a gain of from 10% to 500% in circulation in sev years, going to a combined circulation of more than 4,225,00 double that of 1940. One new project was a four-colour tablo comic weekly circulated by McClure Newspaper syndicat Stanley Walker, formerly of the *New York Herald-Tribun* became editor of the new magazine *Scene* of Ft. Worth, Te in October. The Curtis Publishing company of Philadelph made news three times during the year: first by breaking i time-honoured rule to admit liquor advertising in *Holida* second by arranging with Western Union telegraph company have ads on 350,000,000 blanks and envelopes announcing th subscriptions might be ordered by wire; third on Nov. 15 b raising the sale price of *Saturday Evening Post* to 15 cents copy, or $6 a year, and advertising rates to $11,200 a page. *Li* magazine joined with the *New York Times* and Houghto Mifflin company to pay $1,000,000 for U.S. rights to Winsto Churchill's memoirs—about $1 a word. (G. M. Hy.)

**Canada.**—Newsprint remained in short supply througho 1947 and printing costs went up, resulting in continued limita tions of the sizes of newspapers and sometimes a reduced co erage of news events because pressure for advertising space co tinued. Most dailies raised their prices to 5 cents a copy.

There were two flurries in Canadian newspaper publishin during the year. One came when the Canadian Daily New papers association presented a brief to the radio committee o parliament in which it declared that government policy forbid ding new licences to newspapers to operate radio stations wa discrimination which threatened "the very life of the pres because facsimile reproduction would be completely controlle by the crown-owned Canadian Broadcasting corporation. Th second flurry came when opposition members of parliament un successfully objected to the policy of carrying papers as secon ss mail at a cost of $7,200,000 a year to the post office.

Specific developments of interest included a $250,000 suit of Southam Newspaper company against the officers and memrs of the International Typographical union because the *Vanuver Province* (B.C.) lost $200,000 in revenue and incurred 0,000 additional expenses when forced to suspend between ne 5 and July 23, 1946, as a result of a strike.

The communist *Toronto Tribune* (Ont.) had a six-month reer beginning May 1 as a daily, before reverting to weekly atus. (C. Cy.)

**Great Britain.**—The year 1947 was one of great hopes and d disappointment for British newspapers. With an increased pply of newsprint and the removal of sale restrictions, circuions rose considerably in the early months; but the fuel ergency in February, and the economic crisis later, both relted in setbacks. By the end of the year, with the supply of wsprint again reduced, circulations had once more become abilized.

During the fuel emergency, in order to save electric power, e publication of all periodicals and trade and technical papers as suspended for two consecutive issues, by an agreement beeen the ministry of fuel and power and the proprietors' assoation; and the daily newspapers reverted temporarily to their artime size.

In response to the government request for an immediate reuction in newsprint consumption to save dollar expenditure, e rations of newspapers were reduced from July 21, 1947. or the morning papers the cut was equivalent to a reduction one page per issue (two pages in tabloid newspapers) from e maximum paging then in force. The reduction could be fected either by reduced paging or reduced sale. These cuts ere estimated to effect a dollar saving of a little more than 1,000,000 in the first six months. The decision was severely iticized as endangering the freedom of the press, and 20 abour M.P.'s abstained from voting after a house of commons ebate.

The names of the chairman, Sir W. David Ross, provost of riel college, Oxford, and the 16 other members of the royal ommission to inquire into the control, management and ownerhip of the press were announced in March. The first meeting f the commission was held on April 30. The commission pubshed written memoranda of evidence but heard oral evidence ntirely in private.

In March the *Times* attained a sale of nearly 275,000. The ales of the *Daily Telegraph,* which in 1930 were less than 00,000, reached 1,000,000 in April. The *Daily Mail* and the *aily Herald* both exceeded 2,000,000 and the *Daily Express* ,000,000 copies a day. The *Evening News* with 1,600,000 laimed the highest net sale of any evening paper in the world.

The board of trade appointed a committee to advise on seection and production of new periodicals. Among new publiations were *Coal,* a monthly magazine prepared for the new ational coal board; the *Times Review of Industry,* which inorporated the *Times Trade and Engineering,* and *Hansard igest.*

Final steps were taken in March 1947, to convert Reuters ews agency into a world news agency under the ownership and ontrol of newspapers of the United Kingdom, Australia and ew Zealand.

J. W. Robertson Scott, founder and editor of the *Countryan,* retired and was succeeded by J. Cripps. Both Robertson cott and J. Bone, late London editor of the *Manchester Guardn,* were made Companions of Honour. Dr. L. P. Jacks retired rom the editorship of the *Hibbert Journal* which he had held nce its foundation in 1902. Sir Bertram Ford, managing director of the *Birmingham Post* and *Birmingham Mail,* retired after 33 years' service. Sir Walter Layton received a barony in the New Year honours and became Lord Layton.

**Europe.**—The activity of the press in many European countries was restricted by the shortage of newsprint. Even in Sweden, cuts up to 25% in consumption of newsprint for newspapers were imposed.

The German news agency, launched by the British military authorities for the supply of news, was taken over by the Germans during the year; it distributed between 30,000 and 40,000 words a day throughout the British zone, in which 45 newspapers were licensed. In January British newspapers and periodicals were on sale again in the British zone for the first time since 1939. A special edition of the *Manchester Guardian Weekly* was printed in Hamburg.

The British government protested to the Bulgarian government against the arbitrary closure of opposition newspapers and against the press law in Bulgaria, which gave wide powers to the minister of information. A strict censorship of British newspapers was imposed in Rumania. (*See* also ADVERTISING.)

(D. HN.)

## New York.

One of the original 13 states of the United States, popularly known as the "Empire state," New York covers an area of 49,576 sq.mi. of which 1,647 are water. With a population of 13,479,142 (federal census, 1940) and an estimated population of 14,207,052 exclusive of persons in institutions (New York state department of health, July 1, 1947), it is the most populous state. The foreign-born population in 1940 was 2,853,530. The urban population was 11,165,893. The 1947 population of principal cities estimated by the state health department and their percentage increase from 1940 included: Albany (state capital), 134,966 (up 3.4%); New York city 7,835,392 (up 5.1%); Buffalo 620,700 (up 7.8%); Rochester 338,492 (up 4.2%); Syracuse 225,423 (up 9.4%); Yonkers 143,560 (up 0.7%); Utica 103,694 (up 3.2%); Schenectady 96,893 (up 10.7%); Niagara Falls 91,915 (up 17.8%); Binghamton 90,391 (up 15.4%). The health department estimate showed a state-wide increase of 5.4% from 1940.

**History.**—Governor Thomas E. Dewey approved 908 bills passed by the 1947 legislature. Among the principal measures enacted were: continuation of a reduction in state personal income tax and 25% reductions in the corporation and unincorporated business tax rates, originally effected in 1946; the Young-Demo Merit Rating bill, permitting tax credits to employers estimated at $140,000,000 in the fiscal year ending June 30, 1948, based in part on employment experience records; an act prohibiting strikes by public employees; continuation of the state's stand-by rental control law for state regulation of residential rents in the event federal controls lapse; extension of commercial rent controls in New York city to July 1, 1948; measures making permanent certain temporary taxes on motor fuel, liquor, cigarettes, inheritances and estates, gross utilities receipts and unincorporated business; a measure channelling federal funds for airport development through the state department of commerce.

A $32,000,000 increase in state aid for education was appropriated to provide increases in pay of $300 each for 72,000 public school teachers, establishing a minimum annual salary of $2,000 for the period Jan. 1, 1947, to March 31, 1948. Another measure set a minimum salary schedule for teachers in New York city beginning at $2,500; in other cities of 100,000 population or over, starting at $2,200; and elsewhere, starting at $2,000. To enable localities to raise revenue to finance increased cost of teachers' salaries and for other purposes, the legislature granted new taxing powers to counties and cities over 100,000 population. This measure permitted the local legislative bodies to impose certain taxes on retail sales, motor vehicle use, amusements and other specified items.

The legislature passed for the second time a proposed constitutional amendment to provide $400,000,000 for a World War II veterans' bonus. This was approved by the voters at the November state-wide election, making possible individual bonus payments, ranging from $50 to $250, starting Jan. 1, 1948. Special taxes were to become operative to retire the debt thus incurred within a period of ten years. The special taxes were a one cent tax on each pack of cigarettes and a change in personal income tax reduction from 50% to 40% of the normal tax.

In the November election, the voters approved public housing propositions and five constitutional amendments. The housing propositions permit issuance of bonds up to $135,000,000 for loans to municipalities for slum clearance and low rent housing. This sum represents the balance of a $300,000,000 housing program previously authorized. Amendments approved by the voters permit more extensive use of the absentee ballot; authorize legislators to set their own salary by law; provide an alternate method of removal or retirement of judges and justices; create a new supreme court judicial district consisting of Queens, Nassau and Suffolk counties; authorize state construction and maintenance of ski trails on state forest preserve lands on Gore, South and Pete Gay mountains in the Adirondacks and Belle Ayre mountain in the Catskills.

New York state established an emergency housing program which had provided (to Oct. 1947) homes for 35,000 veterans in 214 veterans' emergency housing and educational projects located in 39 communities and at 52 colleges. When this $69,800,000 project should be completed, it would provide additional homes for 50,000 veterans and their wives and families. For disabled veterans who are paralyzed and paraplegics, the state constructed especially designed apartments at Marine park and the maritime base in New York city.

Besides the additional housing facilities provided for veterans at the schools and colleges, the state education department had a program of education aids for ex-service people. In 1947, approximately 100,000 veterans of World War II were attending schools and colleges in the state. On the recommendation of Governor Dewey, 4,800 war service scholarships were issued for colleges, business, professional and technical and trade schools in the state. These scholarships had a value of $350 a year for tuition and fees for four years. There were also 100 war orphan scholarships of $350 a year each for tuition and $100 a year for maintenance to resident children of deceased or disabled veterans.

Chief officers of the state during 1947 were: Thomas E. Dewey, governor; Joe R. Hanley, lieutenant governor; Frank C. Moore, comptroller; Nathaniel L. Goldstein, attorney general; Thomas J. Curran, secretary of state; Benjamin F. Feinberg, majority leader of the senate, and Oswald D. Heck, speaker of the assembly—all Republicans. United States senators: Robert F. Wagner, Democrat, and Irving M. Ives, Republican.

**Education.**—During the 1945–46 school year, New York state's educational system included: school districts, 5,112; common school districts, 4,215; union free districts, 415; central rural school districts, 319 (344 in 1947); cities and villages under separate superintendents, 162; grade pupils, 1,255,197; high school pupils, 576,664; and college and university students, 171,122 (regular), 51,021 (summer) and 52,203 (extension). During the year ending June 30, 1946, the approximate cost of maintaining public schools (including salaries of 73,079 teachers) was $378,143,894, excluding moneys raised by bonds.

Established to meet housing and college space difficulties, three state colleges (Sampson at Sampson, Champlain at Plattsburg and Mohawk at Utica), which comprise the Associated Colleges of Upper New York and operate as a single unit, had during 1947–48, 8,500 students, of whom about 7,200 were World War II veterans. There were more than 110 colleges and universities in the state.

**Social Insurance and Assistance, Public Welfare and Related Programs.**—During 1946 approximately 3,300,000 men, women and children received health and welfare services through 1,524 local public and private voluntary agencies and institutions under the supervision of the state department of social welfare, at a total cost of about $325,000,000. Of t sum, $197,000,000 came from public funds and $128,000,000 from p vate voluntary funds. During 1946 expenditures for aid to dependent cl dren totalled $30,956,336; for old-age assistance, $52,732,075; for aid the blind, $1,737,439; and for home relief and veteran assistan $26,967,005.

During 1947 the state operated 18 mental hospitals, 2 mental insti tions, 6 schools for mental defectives, 1 epileptic colony, 1 hospital criminal insane and 1 for conduct insane. There were 7 state prisons reformatories and 3 institutions for defective delinquents. State expen tures for prisons, reformatories, etc., for the fiscal year ending March 1947, were $15,863,886.36. The number of inmates on Oct. 31, 1947, w 15,949.

**Communications.**—New York state had 82,140 mi. of roads in 1946, which 11,799 were state highways (exclusive of cities and incorporat villages), 16,994 county and 53,347 town roads. The 40 railroads in t state operated more than 7,000 mi. of tracks. The state maintains a s tem of more than 500 mi. of canals including the Erie, 340; the Cha plain, 63; the Cayuga-Seneca, 92; and the Oswego, 24. Including t rivers and lakes which are part of the New York State Barge Canal s tem, the total length is more than 800 mi. Although no tolls are charg the canals and waterways yielded a revenue of $518,204.29 in 1946 fr the use of terminals, the sale of electric power and the operation of gra elevators. Airports had almost doubled in number in the two-year peri after V-J day. The New York state department of commerce reported July 1947 a total of 287 airports in the state.

**Banking and Finance.**—As of June 30, 1947, 114 state banks had to resources of $471,768,243 and deposits of $434,650,051; 145 trust co panies had total resources of $19,387,671,655 and deposits of $17,45 080,977; 5 private banks had total resources of $263,334,943 and posits of $226,387,577; 13 industrial banks had total resources of $17 026,132 and deposits of $151,486,012; and 131 savings banks had to assets of $10,629,941,202 and deposits of $9,583,259,401. As of Jan. 1947, 172 saving and loan associations had total resources of $433,52 286 and due to shareholders $381,926,104.

The comptroller's report for the fiscal year ended March 31, 194 showed that the state had an operating surplus of $58,712,842. Revenu for the year were $658,850,262.76 and expenditures $600,137,420.7 The surplus in the postwar reconstruction fund was $435,766,464.39. T state debt at the end of the fiscal year was $359,696,084.

**Agriculture.**—In 1946, the production of dairy products in the sta was $315,861,000. Sales of eggs, poultry and other livestock produc were $193,451,000, the second largest source of farm income in the sta The 1946 value of all farm crops was $232,560,000. Government pa ments amounted to $43,223,000. The grand total of farm cash receip was $785,095,000.

As of Jan. 1, 1947, New York's milk-cow population was estimated 1,439,000 head; total cattle in the state numbered 2,118,000 head. The were 15,333,000 chickens.

Total milk production in 1946 was 7,803,000,000 lb., third largest the country. Egg production was 181,166,000 dozen. The New York sta department of agriculture and markets in 1946 reported animal popul tion as follows: horses, 202,000; mules, 3,000; milk cows and heifers t years old and over, 1,439,000; heifers, one–two years for milk cow 274,000; hogs, 235,000; and sheep, 223,000. The number of turke raised was 756,000.

The farm value of vegetable crops for market in 1946 was $64,861,00 The estimated value of the 1946 production of apples, peaches, pea cherries and grapes—the major New York fruits—was about $58,293,00

According to the 1945 federal census, 83% of New York farms ha electricity in the farm dwellings, 59% had running water, 53% te phones and 89% radios. Nearly 120,000 farms reported having 145,00 automobiles. Motor trucks were reported on 57,000 farms.

*Estimated Value of Product and Number of Employees in Ten Leading Manufacturing Industries, New York State, 1946**

| Industry | Value of product (000's omitted) | Numbe employ |
|---|---|---|
| Apparel and other finished products made from fabrics and similar materials | $5,751,000 | 404,44 |
| Food and kindred products | 2,345,000 | 142,54 |
| Printing, publishing and allied industries | 2,155,000 | 147,32 |
| Chemicals and allied products | 1,589,000 | 91,90 |
| Machinery (except electrical) | 1,213,000 | 146,87 |
| Nonferrous metals and products | 1,125,000 | 65,49 |
| Iron and steel and products | 1,118,000 | 108,90 |
| Textile-mill products | 837,000 | 94,03 |
| Paper and allied products | 832,000 | 66,77 |
| Electrical machinery | 827,000 | 114,71 |

*Estimates by New York state department of commerce.

**Manufacturing.**—In the first half of 1947, the state's manufacturin firms were producing goods at an estimated annual rate of $20,000,000 000, compared with an output of $7,134,000,000 in 1939. By the end o 1947, the number of business firms operating in the state had reached a all-time high of 540,000. Estimated total employment in September, exclusive of agricultural workers, proprietors, domestics and personnel of th armed forces, was 5,440,400. The average weekly earnings in factorie for that month were $54.94, or $4.13 more than the average for Sept 1946.

Of the 118 war plants constructed in New York state by the federa government, at a total cost of $316,983,560, 69 had been sold as of Nov 25, 1947; 16 were leased, chiefly to firms which had operated them durin the war; 23 were under negotiation for sale or lease; and 10 remaine available. Several of the larger plants were owned or operated by concerns which moved into the state.

**Mining.**—In 1945, the latest year for which complete statistics we available, New York state produced $90,286,000 worth of primary mineral products. The value of the principal products listed in 1945 included petroleum $17,470,000; salt $10,327,013; stone (including limestone

33,781; cement (Portland) $9,009,454; pig iron $74,857,092; coke 070,238; and gypsum $1,262,989. (H. C. Cl.)

## w York City.

Unofficial estimates placed the population of New York city in 1947 at 7,835,392. second year of Mayor William O'Dwyer's term of office saw New York city expense budget inflated to a record $1,023,-,530 by increased costs of construction and government. s budget was second in size only to that of the federal ernment.

LLPOX SCARE after 12 cases and 2 resultant deaths caused 6,350,000 York city residents to be vaccinated during April-May 1947. New Yorkers shown waiting to be immunized at the Morrisania hospital

Large increases in the cost of operating the municipal transit system caused the city administration to ask the state for legislation to enable the board of transportation to fix a fare that would cover operating costs of the subways. This program also called for an increase in the real estate tax limit to 2.5%, or for the removal of education costs from the tax limitation.

In a plan developed at the suggestion of the mayor, the city's airport building program was turned over to the port of New York authority. The city also invited proposals from public and private agencies for the rehabilitation of the port of New York under a setup that would also save the capital cost to the taxpayers but, like the airports, continue to provide revenue to the city.

Again, with a view to economy, a three-member mayor's committee on administration was established, whose duty was to study all city departments and streamline their administrative procedures. A bureau of analysis of the budget was organized to make detailed studies for this committee.

To encourage new business to enter New York, the department of commerce was re-established with leading businessmen serving on a nonsalaried basis in advisory capacities.

Although conservative estimates said that 150,000 families still needed homes, 18,100 apartments were provided in 1947, and many developments, both public and private, neared completion. In addition, the city established by local law a Temporary Housing Rent commission seeking to regulate rents in hotels, apartment hotels and other housing no longer subject to federal controls.

As New York prepared for its golden anniversary celebration in 1948, commemorating the consolidation of the five boroughs into greater New York, construction had been started on 18 new schools. In addition, although hampered by constantly rising construction costs, a program of subway improvement was started whose aim was to lengthen station platforms and thus double the passenger capacity of local trains. Plans went ahead, too, for the purchase of 750 new subway cars and 1,155 buses and trolley coaches.

To prevent inflation from hampering the city's fiscal arrangements for construction, the mayor proposed to labour, management and suppliers in that industry that they reach a stabilization agreement under which final building costs could be more accurately estimated. As a result, 70% of the 250,000 construction workers in the New York area joined an agreement to stabilize wages until June 30, 1950.

On the whole, labour had a quiet year, with the city's labour relations division settling 52 disputes of which 26 were major.

On Dec. 26 the greatest snowstorm in New York's history smothered the city under a 25.8 in. blanket weighing 99,000,000 tons. Business and transportation were momentarily paralyzed, but the snow was rapidly removed. (*See* also MUNICIPAL GOVERNMENT.)

## New York University.

A coeducational institution occupying six centres in various parts of New York city and consisting of two liberal-arts colleges, three graduate schools, seven professional schools and colleges and a division of adult education, with programs of study embracing the liberal and fine arts, business, dentistry, education, engineering, law, medicine and public administration. Although bearing the name of both the state and the city, it is a privately-controlled institution with no religious or other affiliations. Its operating revenue in 1946–47 was $16,615,218, derived from student fees, endowments and gifts. The latter exceeded $2,667,-000, of which approximately $843,000 was for specialized training and research. The university was engaged during 1947 in two major fund-raising campaigns, the first for the $3,000,000 law centre to be erected at Washington square, and the second for the projected $15,000,000 medical centre in conjunction with the proposed rebuilding of Bellevue hospital by the city of New York. The land comprising the site for the medical centre was acquired during the year and several of the activities of the centre were initiated, notably the Institute of Rehabilitation and the Institute of Industrial Medicine. Other educational developments during the year included the new co-operative work-study program in the School of Retailing, the Investment Banking program in the Graduate School of Business Administration, the consolidation of the Institute for Applied Mathematics and Mechanics in the Graduate School of Arts and Science, and the specialized programs of training in book publishing and business paper publishing in the division of general education. The cumulative enrolment of the university for 1946–47, including the summer session of 1946, reached a net total of 59,466, of whom 25,435 were veterans. Degrees and certificates were awarded at the regular June commencement exercises to 5,507 candidates. (For statistics of endowment, enrolment, faculty, library volumes, etc., *see* UNIVERSITIES AND COLLEGES.) (H. O. V.)

**New Zealand, Dominion of.** A British dominion, consisting of a group of islands, lying in the South Pacific to the southeast of Australia. Area: dominion proper 103,416 sq.mi.; other islands 519 sq.mi.; pop. dominion proper (est. March 31, 1947): 1,793,225 (including Maoris 105,699); Cook and other Pacific islands 19,167; Tokelau Islands (census 1945) 1,388. Western Samoa, a trusteeship, has an area of 1,133 sq.mi. and a pop. (est. March 31, 1947) of 71,460. Chief cities (pop. est. April 1, 1947): Wellington (cap. with suburbs, 183,100); Auckland (with suburbs, 281,900); Christchurch (159,400); Dunedin City (87,700). Language: English; religion: Christian (1936 figures, excluding Maoris: Church of England 600,786; Presbyterian 367,855; Roman Catholic 195,261; Methodist 121,012). Ruler: King George VI. Governor-general: Lieut. Gen. Sir Bernard Freyberg. Prime minister: Peter Fraser.

**History.**—On June 26, 1947, Lieut. Gen. Sir Bernard Freyberg, the governor-general, emphasized that the peace settlements with Japan and Germany should not be dictated by the great powers, but that all the antiaxis belligerents should take part in the peacemaking. Peter Fraser, the prime minister, announced on March 5 the gift to Britain of £NZ.12,500,000, "in recognition of the magnificent, unprecedented effort of the United Kingdom and her people in maintaining freedom. . . ."

The first session of the new parliament, in which the government had a majority of four, was opened by commission on June 24, and Robert McKeen (Labour, Wellington South) was elected speaker. Daniel Giles Sullivan, minister of industries, commerce, supply and munitions, died on April 8, and Mabel Howard, who succeeded him, became New Zealand's first woman cabinet minister. James O'Brien, minister of transport and marine, died on Sept. 28, and was succeeded by Terence McCombs; shortly afterward the cabinet was reorganized and McCombs became minister of education, various other changes taking place.

The New Zealand delegation to the British Commonwealth conference on the Japanese peace treaty, held in Canberra in August, was led by Fraser.

The government announced on Aug. 14 its decision to abolish or reduce subsidies on a number of goods (fruit, tea, meat, bacon, sugar and imported raw materials), on sea and rail fares and on freight charges. The value of the subsidies affected was about £NZ.6,900,000.

**Western Samoa.**—In August, Walter Nash, the acting prime minister, announced a number of constitutional changes, including the appointment of a council of state of three Sa
*Fautua* (high advisers) and the replacement of the council
legislature with a Samoan majority. On April 22, the U
Nations Trusteeship council, of which Sir Carl Berendsen
New Zealand delegate, was elected vice-chairman, decide
send a mission of investigation to Western Samoa. The miss
consisting of representatives of U.S.A., Belgium and Chile
ported in October, with recommendations similar to the
Zealand proposals already announced.

**Education.**—Dec. 1943: state elementary schools 2,090, scholars
060; postprimary scholars 47,620. University of New Zealand stu
(1946) 10,700. Total cost of education (year to March 31, 1
£NZ.5,221,389.

**Finance.**—(In £NZ.) revenue, consolidated fund (est. 1947–48), £
860,000; expenditure £105,516,000. Revenue, social-security fund
1947–48) £39,727,000, including contribution from consolidated fun
£16,000,000; expenditure £40,039,000. Note circulation (June 1
£39,842,000. Reserve (in reserve bank): gold £2,802,000, exchange
933,000. Net overseas funds £105,068,000. Deposits in post office
trustee savings banks (March 31, 1947) £171,782,000. Gross indebted
of general government (March 31, 1947) £634,800,000. Exchange
£NZ.125 = £100 sterling. £NZ. = 324.2 U.S. cents.

**Trade and Communication.**—Imports (1946) £NZ.71,630,000; exp
(1946) £NZ.99,410,000. Communication: road, paved or surfaced 45
mi. (including main highways 12,431 mi.); not paved or surfaced 8
mi.; railways 3,504 mi.; passenger journeys (year to March 31, 19
28,869,000. Civil aviation: passengers carried on internal air lines (
to March 31, 1947) 110,700; on overseas services 13,300; freight (i
nal) 128,700 ton-miles, (external) 220,300 lb.; mail (internal) 74
ton-miles, (external) 307,400 lb. Shipping (1946): entered 2,141,000
cleared 2,633,000 tons. Motor vehicles licensed (June 26, 1947) 338,
Wireless licences 395,139.

**Agriculture.**—Production (1945–46): wheat 5,439,041 bu.; oats 2,7
877 bu.; barley 1,872,316 bu.; maize 350,188 bu.; peas 816,897
potatoes 140,252 short tons; onions 11,996 short tons; perennial
grass 20,642,061 lb.; Italian rye grass (including western wolths) 10,
178 lb.; cocksfoot 3,107,218 lb. Livestock (1946): horses 216,335;
tle 4,666,782; pigs 549,391; sheep shorn 30,475,740. Wool produc
(1945–46): 365,000,000 lb. (greasy); butter fat production (1945–
368,000,000 lb.

**Manufacturing.**—1943–44: number of establishments 6,202; total n
ber of employees 117,864; salaries and wages paid £NZ.34,433,075; v
of products £NZ.175,686,689; value of land, buildings, machinery
plant £NZ.90,740,357.

**Mineral Production.**—Production in 1944 included: gold 142,287
silver 328,281 oz.; (in short tons) arsenic 18; talc 28; asbestos
scheelite 160; fuller's earth 117; coal 3,086,567; iron ore 6,640; p
phate 21,924.

**NHA (National Housing Agency):** *see* HOUSING.

**Nicaragua.** A republic in Central America, situated betw
Honduras on the north and Costa Rica on
south. Area: 57,143 sq.mi., of which 3,475 sq.mi. is water. P
(off. est., Dec. 31, 1945) 1,095,488. Capital, Managua (19
pop., 132,154); other urban centres: Chinandega (24,41
Granada (36,953), Jinotega (37,934), León (48,862), Masa
(35,065) and Matagalpa (50,072). Language: Spanish. Religi
predominantly Roman Catholic. Presidents in 1947: Gen. An
tasio Somoza, Leonardo Argüello, Benjamín Lacayo Sacasa a
Victor M. Román Reyes.

**History.**—In 1947 a presidential election, a coup d'état, an
general reorganization by a new constituent assembly ended t
presidency but not the power of General Somoza, Nicaragu
political strong man since 1936.

The election, held Feb. 2, was policed by the national gua
and resulted officially in victory for proadministration Leonar
Argüello. The opposition candidate, Enoc Aguado, protest
and left the country to obtain foreign support. Popular demo
strations and press criticism were suppressed by the governme

Argüello, inaugurated May 1, almost immediately alienat
his chief benefactor (General Somoza) by attempting to plac
the opposition and to eliminate military influence in the gove
ment. On May 25, Somoza and a portion of the national gua
forced Argüello out of the presidential mansion and reconven
the congress. The congress, sanctioning the general's actio
declared Argüello deposed for inability to maintain public ord
and designated Benjamín Lacayo Sacasa president *pro te*
Argüello took refuge in the Mexican embassy until Nov. 30 a

in December while an exile in Mexico. The temporary ident named Somoza minister of war, dissolved congress and voked national elections for a constituent assembly to form w constitution and select a new president.

leanwhile, economic crises resulted from the political un- ainty, both agriculture and trade suffering acutely. To aggra- the situation, a ten-day eruption of the Cerro Negro vol- in July devastated an estimated 280 sq.mi. of farm land, ng an undisclosed number of persons and leaving thousands neless in and around León.

he constituent assembly, selected Aug. 3 by orderly voting, ed Victor M. Román Reyes president on Aug. 15. General noza was left in charge of the national guard. Sporadic re- s in September brought about more stringent sedition legis- on, and on Sept. 28 Gen. Emiliano Chamorro, leader of the servative party, was charged with fomenting subversive ac- ties and was exiled to El Salvador.

he majority of the American republics refused to recognize new administration, and Nicaragua was not invited to the er-American conference near Rio de Janeiro. (*See* INTER- ERICAN DEFENSE CONFERENCE.) On Dec. 24, Pres. Román ves invited the United States to activate its treaty granting ights to build and protect an interoceanic canal in Nicaragua.

**ducation.**—In 1946 there were 1,275 schools of all kinds with a total lment of 84,651 students. The illiteracy rate (approx. 60% of the l population in 1945) continued to fall during 1947 as a result of onal legislation obligating literate citizens to teach reading and writ- to illiterates. As of Jan. 1, 1947, there were 44 motion-picture thea- with a total seating capacity of 41,037.

**inance.**—The monetary unit is the córdoba, officially maintained in e at 20 cents U.S. The provisional budget for the 1946–47 fiscal year mmended expenditures amounting to 77,359,607.59 córdobas. The pub- debt on Jan. 1, 1947, amounted to 17,675,975.22 córdobas, internal, 21,073,343.30 córdobas, external. At the same date the banks held 91,775.47 in gold and $871,924.23 in foreign exchange; money in ulation totalled $14,511,512.12.

**rade and Resources.**—Exports for 1946 were valued at $18,131,880 3,962,728 in 1945); imports, $14,822,775 ($12,651,615 in 1945). ing the first seven months of 1947, exports were valued at $14,400,- and imports at $11,700,000. The U.S. took 78% and supplied 79% the 1946 trade. The leading exports were gold (6,338 kg. at $7,731,- ), coffee (196,276 bags at $4,316,432), lumber (19,611,504 bd.ft. at 6,864) and rubber (584,245 kg. at $384,245). Early estimates of the 7–48 coffee crop placed production at 250,000 bags (230,000 bags in 6–47).

**ommunications.**—In 1946 public railroads measured 238 mi.; improved hways 597 mi.; telephone lines 4,748 mi.; telegraph lines 4,704 mi. ere were 14 radio broadcasting stations. Registered motor vehicles in- ded 725 automobiles, 94 buses and 623 trucks. In 1947 both internal l external air service continued to expand.

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## ickel.

World production of nickel, as indicated in Table I, had by 1946 declined to about the 1939 level, not so uch from lack of demand, as from inability to meet demand.

Table I.—*World Production of Nickel*

(In short tons)

| | 1939 | 1941 | 1943 | 1945 | 1946 |
|---|---|---|---|---|---|
| ma. | 1,015 | ? | ? | ? | ? |
| nada | 113,053 | 141,129 | 144,009 | 122,565 | 94,833 |
| ba | — | — | 2,679 | 12,015 | 12,391 |
| and | ? | 107 | 9,888 | 4,079 | ? |
| eece | 1,473 | 204 | 545 | ? | — |
| an. | 966 | 2,547 | 1,778 | 717 | ? |
| Caledonia | 11,712 | 11,459 | 8,128 | 4,771 | 3,063 |
| way | 1,219 | 1,000 | 636 | 61 | ? |
| S.R. (est.) | ? | ? | 12,300 | 14,800 | ? |
| ed States | 394 | 660 | 642 | 1,155 | 352 |
| Total | 134,500 | 178,600 | 190,000 | 169,000 | 140,000 |

Table II.—*Nickel Supply in the United States*

(In short tons)

| | 1939 | 1941 | 1943 | 1945 | 1946 |
|---|---|---|---|---|---|
| duction | 394 | 660 | 642 | 1,155 | 352 |
| ondary recovery | 2,920 | 5,313 | 6,917 | 6,483 | 8,248 |
| orts* | 64,796 | 124,130 | 141,249 | 122,528 | 104,734 |
| orts* | 10,167 | 7,125 | 9,464 | 3,876 | 7,977 |
| sumption | ? | ? | ? | 96,252 | 80,105 |

ncludes gross weight (not nickel content) of ore, matte, oxide and alloys.

**United States.**—The United States is dependent on imports for practically its entire supply of nickel, with Canada as the chief source.

**Canada.**—Nickel output dropped from 122,565 short tons in 1945 to 94,832 tons in 1946, but recovered to 85,336 tons in the first nine months of 1947.

**Cuba.**—During World War II Cuba developed into the second largest producer, with 12,015 short tons of contained nickel in 1945 and 12,391 tons in 1946. (G. A. Ro.)

## Nicola, Eñrico de

(1877– ), Italian statesman, was born on Nov. 9, in Naples. After graduating from Naples university in 1895 with a law degree, he was admitted to the bar and won renown as a criminal lawyer. Elected Liberal member for Naples to the chamber of deputies in 1909, he was re-elected in 1913, 1919 and 1921. Undersecretary of state in the Orlando and Giolitti governments, De Nicola was elected in 1920 speaker of the chamber of deputies. He occupied this position when Mussolini was appointed prime minister and held it until the end of 1923. He was re-elected speaker in 1924 without being candidate; he refused to take his seat and retired from politics. Under the fascist regime he kept aloof from public affairs, but in 1932 he accepted an appointment as senator. In 1944, monarchist in sentiment, he acted as intermediary between King Victor Emmanuel III and the committee of national liberation, and it was he who formulated the decree by which Crown Prince Humbert became lieutenant general of the realm (June 28, 1944). On June 28, 1946, after the proclamation of the republic, the constituent assembly elected De Nicola provisional head of state, and he was re-elected for another year on June 25, 1947. He accepted with the reservation that he would not be a candidate once the constitution had been promulgated.

**Niger:** *see* FRENCH OVERSEAS TERRITORIES.
**Nigeria:** *see* BRITISH WEST AFRICA.

## Nitrogen, Chemical.

Imports of Chilean nitrate into the United States dropped from 849,888 short tons in 1945 to 529,677 tons in 1946. Ammonium sulphate recovered in the by-product coking of coal also dropped, from 764,293 tons in 1945 to 643,752 tons in 1946, while the ammonia content of other by-product recovery declined from 218,680 tons in 1945 to 185,929 tons in 1946. As an offset to these reductions the output of synthetic ammonia rose from 548,655 tons in 1945 to 725,537 tons in 1946.

There was such an insistent demand for fertilizer nitrogen from the areas devastated by World War II that the decreased needs for military uses were more than offset, resulting in a world shortage of nitrogen which was expected to last at least into 1948. (G. A. Ro.)

**NLRB:** *see* NATIONAL LABOR RELATIONS BOARD.
**NMB:** *see* NATIONAL MEDIATION BOARD.

## Nobel Prizes.

The Nobel prizes, five in number, were awarded annually beginning in 1901. The 1947 physics and chemistry prizes, amounting to $40,588 each, went to two British scientists: the physics prize to Sir Edward Victor Appleton, world authority on radio waves and the discoverer of the ionosphere and the Appleton layer, atmospheric belts which surround the earth at heights of 60 mi. and 120 mi.; the chemistry prize to Sir Robert Robinson, authority on the synthesis or building up of natural compounds, and codiscoverer of the artificial sex hormones, stilbestrol and hexestrol. The prize in medicine and physiology was divided between Drs. Carl F. and Gerty T. Cori, U.S. biological chemists, and Dr. Bernardo A. Houssay of Argentina. The Coris, husband and wife, are naturalized U.S. citizens, working at Washington university, St. Louis, Mo. They took their degrees and received their training in the German and Czech university schools at Prague. Dr. Houssay was formerly professor of physiology at the Buenos Aires National university but was deprived of his post during a political purge. The literature prize was won by the 78-year-old French writer, André Gide, whose works in English translation are issued by Knopf, and in French by Pantheon Books and Crofts. The 34th award of the peace prize was divided between the American Friends Service Committee of Philadelphia and the Friends Service Council of London. These two Quaker groups divided $40,946 between them. (B. Gm.)

## Noel-Baker, Philip John

(1889– ), British statesman, was born on Nov. 1 and was educated at Bootham school, York, and King's college, Cambridge. During World War I he served with the Friends' ambulance unit in France and Italy. Labour member for Coventry, 1929–31, and for Derby from 1936, he served as parliamentary secretary to the ministry of war transport in the coalition government, 1942–45. In the Labour government he was minister of state, 1945–46, and was appointed secretary of state for air, Oct. 1946.

In Jan. 1947 Noel-Baker visited royal air force establishments in Malta and Gibraltar. At the completion of his year of office as chairman of the Labour party, he presided over the annual conference in May, where he spoke of the Labour government's "bold new legislation and beneficent reforms." In the ministerial changes in October, Noel-Baker entered the cabinet as secretary of state for commonwealth relations. During the illness of Alfred Barnes, minister of transport, he was temporarily in charge of the transport ministry.

## Nokrashy Pasha, Mahmoud Fahmy

(1888– ), Egyptian politician, was educated at the University college of Nottingham, Eng. He taught school in Egypt and joined the government in 1920 as a subdirector in the agriculture ministry. He was minister of communications in 1930 and again in 1936–37. He also held the portfolios of interior, education and finance between 1938 and 1940.

In 1938, Nokrashy pulled out of the Wafd party, joining the Saadists (or dissident Wafdists). He became president of the Saadist party in 1945.

Following the assassination of Ahmed Maher Pasha, Nokrashy Pasha (then foreign minister) became prime minister of Egypt, Feb. 25, 1945. However, following a week of anti-British demonstrations in Cairo, during which several persons were killed, his government fell on Feb. 15, 1946. He returned as prime minister Dec. 9, 1946, after the downfall of Ismail Sidky Pasha's government.

In 1947, he unsuccessfully tried to obtain British consent to termination of the Anglo-Egyptian condominium over the Sudan, permitting the latter area to achieve independence "under the Egyptian crown." He took up his case before the United Nations Security council, delivering before that body (on Aug. 11) an impassioned 11,000-word speech asking the council to order Britain out of the Sudan and evacuate all British troops from Egyptian soil. The Security council took no action, however, and tabled the Egyptian complaint on Sept. 10.

## North Borneo.

Three separate territories (all in the northern part of the island of Borneo) were under British protection before World War II, viz.: the state of Brunei under its own sultan; Sarawak, governed by a white rajah (Sir Charles Vyner Brooke); and the state of North Borneo, administered through a governor by a chartered pany operating in London. Under arrangements made in full sovereignty over Sarawak and British North Borneo transferred, by the rajah and the chartered company res tively, to the British crown, and British North Borneo united with Labuan to form the new colony of North Bor Sarawak became a separate colony. Brunei retained its st as an independent sultanate under British protection. Are North Borneo (including Labuan): 29,417 sq.mi.; Sara 50,000 sq.mi.; Brunei, 2,226 sq.mi.; pop.: North Borneo cluding Labuan, est. 1946), 310,000; Sarawak (est. 1946), 6 000; Brunei (1946 est.), 40,786. Capitals: North Bor Jesselton (pop. 15,000); Sarawak, Kuching (pop. 25,0 Brunei, Brunei (12,000). Executive authority in North Bo and Sarawak is vested, under the new arrangements, in a ernor appointed by the British crown. Brunei is governed sultan, assisted by a state council and advised by a British dent. All three territories come under the general co-ordina and supervisory authority of the British governor-genera Malaya. Governors: North Borneo, E. F. Twining; Sara Sir Charles Arden Clarke (both appointed in 1946).

**History.**—The main effort of the civil government in eac these territories during 1947 was concerned with urgent habilitation measures. In Sarawak much attention was give problems of health and education, and steps were taken for establishment of new local government institutions. As rega North Borneo, arrangements were being made for the settle by arbitration, under the terms of the 1946 agreement, of amount of compensation to be paid to the British North Bor company for the transfer of its territory to the crown. Opp tion was raised during the year to the maintenance of an exp tax on rubber from North Borneo, first imposed by the Bri military administration during the period following the ejec of the Japanese. Negotiations on the subject were in prog between the colonial office and the Rubber Growers' associat Schemes sanctioned during the year, under the Colonial De opment and Welfare act, included grants for appointments North Borneo of a drainage and irrigation officer, a town p ner and a veterinary officer. Grants to an aggregate amount more than £250,000 were sanctioned for Sarawak. A furt grant of £21,500 was made for the investigation of coal depo in both territories.

**Finance and Trade.**—The normal unit of currency in all these Bri territories is the Straits dollar, linked to sterling. Prior to World War the Sarawak and British North Borneo governments issued their notes and subsidiary coinage. Revenue: North Borneo (1947 est.) £5 000; Sarawak (9 months) £494,000; Brunei (6 months) £75,000. penditure: North Borneo (1947 est.) £1,070,000; Sarawak (9 mont £815,000; Brunei (6 months) £103,996. Imports: North Borneo (19 £1,083,000; Sarawak (1946) *c.* £3,383,000. Exports: North Bor (1940) £2,386,000; Sarawak (1946) *c.* £2,683,000. The leading agri tural product of North Borneo is rubber. Other exported articles inclu timber, cutch (a tanning extract prepared from bark), dried fish and bacco. In Sarawak, as in North Borneo, rubber is the most import agricultural product, but the territory also contains oil deposits ( Miri oil fields). Apart from oil and rubber, articles of export incl gold, sago flour, pepper and copra. Brunei produces oil, rubber, sago rice. (*See* also BRITISH EMPIRE; NETHERLANDS INDIES.) (J. E. SH.

## North Carolina.

A south Atlantic coast state, popula known as the "Old North state" or "Tar Heel state," North Carolina is one of the original states of the union; area 52,712 sq.mi. (49,142 sq.mi. la 3,570 sq.mi. water); pop. (1940) 3,571,623 of which 974, (27.3%) were urban, 2,597,448 (72.7%) rural and 1,005, (28.2%) nonwhite. On July 1, 1944, the bureau of the cens estimated the civilian population of the state at 3,534,545. C ital, Raleigh (46,897); other cities: Charlotte (100,899); W ston-Salem (79,815); Durham (60,195); Greensboro (59,31 Asheville (51,310).

**History.**—Continuing high prices and income and econom sperity characterized North Carolina in 1947. The state slature meeting in Raleigh, Jan. 8–April 5, broke all records its appropriations of $155,615,959 for current expenses debt service for all state functions for the biennium 1947– It also appropriated $48,432,256 for permanent improve- ts to become available for projects upon the approval of governor and the Advisory Budget commission. The Post r Reserve fund was increased by $9,300,000 to a total of ,000,000 as a cushion against declining revenues. Emergency uses of $8,050,000 for teachers and state employees were ed for the fiscal year 1946–47 and regular average increases 20% for state employees and approximately 30% for school chers were voted for 1947–49.

The entire state medical care program as recommended by Medical Care commission and approved by the governor been so well publicized that it was adopted by the legisla- e without the expected opposition. It provides, among other ngs, for the establishment of a four-year medical school and ching hospital at the University of North Carolina in Chapel l. The launching of the medical care program was con- gent upon the availability of federal funds to the extent of -third of the costs of the projects.

Three state-wide liquor referendum bills were defeated, thus serving the state-wide county local-option system of liquor res. The local-option idea was extended beyond the county- t system by local acts permitting a few designated cities call A.B.C. store elections independently of the county and a general law providing for the holding of an election on question of the sale of wine or beer or both in any county. the sale is defeated in the county referendum, any town h a population of 1,000 or more may hold an election on question of the sale of wine or beer or both in the town. xes on beer and wine were increased.

An act was passed over strong labour opposition making it gal after July 1, to enter into a labour contract providing a closed shop, a union shop, the check-off of union dues the maintenance of union membership. A mild wages-and- urs bill was defeated. Other laws required public registration persons, firms and corporations engaged principally in the siness of influencing public opinion or legislation and made a felony to advise, advocate or teach the duty or necessity overthrowing the state's organized government by force.

State officers in 1947 were R. Gregg Cherry, governor; L. Ballentine, lieutenant governor; Thad Eure, secretary of te; Henry L. Bridges, auditor; C. M. Johnson, treasurer; yde A. Erwin, superintendent of public instruction; Harry cMullan, attorney-general; W. P. Stacy, chief justice.

**Education.**—In 1945–46 there were 3,418 public elementary schools h 19,794 teachers and principals and 689,348 enrolled pupils; 971 lic high schools with 6,100 teachers and principals and 133,771 en- led pupils; these schools were operated at a cost of $56,970,455, out three-fourths of which was contributed by the state government. erage of all teachers' salaries was $1,545. The state provided bus nsportation for 308,191 school children at an average cost of $11.93 pupil.

**Social Insurance and Assistance, Public Welfare and Related Programs.**— Nov. 1947, public grants amounting to $750,185 were made to 41,666 sons for old-age assistance; $278,302 to 8,025 families for aid to de- ndent children; $78,977 to 2,980 blind persons; and $43,177 to 3,066 es for general relief (by the county governments). During the year ling June 30, 1947, the total amount of public relief funds distributed s $11,459,301, and during the first 11 months of 1947 unemployment efits amounted to $5,537,094. In 1947 the state maintained 10 charita- institutions with 10,431 inmates on Nov. 1; 5 correctional institu- ns with 782 inmates; and state highway prison camps with 7,198 soners.

**Communications.**—In 1947 the state highway and public works com- ssion maintained 11,349 mi. of state highways, of which 10,062 mi. e hard-surfaced; and 50,845 mi. of county roads, of which 3,334 mi. e hard-surfaced. There were 4,581 mi. of railroads, 324 mi. of city routes, 10,277 mi. of passenger bus routes and 11,525 mi. of freight icle routes in 1944.

**Banking and Finance.**—On June 30, 1947, there were 59 national banks branches with assets of $471,065,000, and 332 state banks and nches with deposits of $1,223,676,791 and assets of $1,313,593,493. On Jan. 1, 1947, there were 150 building and loan associations operating under state charters with 142,462 shareholders and total assets of $117,645,155, and 26 federal savings and loan associations with total assets of $65,090,629. In 1946–47 state receipts were $407,247,812; disbursements $382,874,418. On June 30, 1947, the state gross bonded and net debts were $90,956,500 and $22,640,218 respectively The assessed value of property was $2,884,364,459 in 1945. In the state general fund there was a cash surplus of about $42,100,000 at the end of 1947.

Table I.—*Leading Agricultural Products of North Carolina, 1947 and 1946*

| Crop | 1947 (est.) | 1946 | Value, 1947 |
|---|---|---|---|
| Tobacco, lb. . . . . . . . . . . . . . | 915,460,000 | 927,425,000 | $386,285,000 |
| Cotton, bales . . . . . . . . . . . . . | 440,000 | 440,000 | 69,300,000 |
| Corn, bu. . . . . . . . . . . . . . . | 65,209,000 | 58,320,000 | 143,460,000 |
| Tame hay, tons . . . . . . . . . . . . | 1,207,000 | 1,283,000 | 35,003,000 |
| Peanuts, lb. . . . . . . . . . . . . . | 343,100,000 | 272,875,000 | 38,427,000 |
| Wheat, bu. . . . . . . . . . . . . . | 8,449,000 | 6,307,000 | 20,700,000 |
| Sweet potatoes, bu. . . . . . . . . . . | 7,360,000 | 7,320,000 | 15,824,000 |
| Irish Potatoes, bu. . . . . . . . . . . | 9,216,000 | 12,616,000 | 14,561,000 |
| Oats, bu. . . . . . . . . . . . . . . | 11,623,000 | 12,870,000 | 12,785,000 |
| Soybeans, bu. . . . . . . . . . . . . | 3,915,000 | 2,862,000 | 11,745,000 |
| Lespedeza seed, lb. . . . . . . . . . . | 33,600,000 | 40,900,000 | 4,368,000 |
| Peaches, bu. . . . . . . . . . . . . . | 2,905,000 | 3,160,000 | 4,212,000 |
| Apples, bu. . . . . . . . . . . . . . | 768,000 | 1,248,000 | 1,690,000 |
| Pecans, lb. . . . . . . . . . . . . . | 2,040,000 | 1,344,000 | 682,000 |

**Agriculture.**—The total value of agricultural production harvested from about 6,650,000 ac. in 1947 was approximately $782,000,000 of which tobacco accounted for $386,285,000 and cotton $69,300,000. North Carolina produced about 42% of all the tobacco and 70% of all flue-cured tobacco grown in the United States. The cash income of North Carolina farmers in 1946 was $633,394,000 from crops; $119,799,000 from livestock and livestock products; and $11,211,000 from government payments. The value of the lands and buildings on the 278,276 farms in 1940, 44% of which were operated by tenants, was $736,708,125.

**Manufacturing.**—In 1939 manufacturing establishments numbering 3,225 employed 270,210 wage earners at wages of $199,289,501 and made products valued at $1,421,329,578. The principal industries were tobacco products, cotton goods and furniture. Estimated industrial production in 1947 was about $2,000,000,000.

**Mineral Production.**—The mineral production for North Carolina in 1944 was $22,199,000. In quantity production of mica, feldspar and bromine, North Carolina ranked first among the states; but in value of all minerals produced, it ranked 32nd in 1944. The value of gold produced in 1943 was $4,585.

Table II.—*Principal Mineral Products of North Carolina, 1945, 1944, 1943 and 1942*

| Mineral | Value, 1945 | Value, 1944 | Value, 1943 | Value, 1942 |
|---|---|---|---|---|
| Stone . . . . . . . . . . . . | $3,044,135 | $5,975,951 | $5,376,600 | $3,774,472 |
| Clay products . . . . . . . . | — | 2,700,000 | 3,000,000 | 4,000,000 |
| Sand and gravel . . . . . . . | 1,503,422 | 1,405,917 | 1,823,516 | 2,491,820 |
| Feldspar (crude) . . . . . . . | — | 778,007 | 656,182 | 533,448 |
| Mica . . . . . . . . . . . . | 633,250 | 2,280,910 | 2,288,691 | 991,194 |

BIBLIOGRAPHY.—U.S. census; *Minerals Yearbook;* reports of state agencies; *Laws of North Carolina* (1947).

(A. R. N.)

## North Carolina, University of.

The University of North Carolina at Chapel Hill began its 154th session with an enrolment of 7,600 students, an increase of 80% above 1941. Three large dormitories were almost completed. Additional classroom facilities were provided by 28 temporary buildings, secured from the Federal Works administration. The chief items of new construction authorized by the state legislature were: a 50% increase in the library; a new medical school and teaching hospital of 400 beds; and expansion of the various utilities. Salary increases of 20% were also authorized.

Gifts during 1947 included the David C. and Martha Reeves Edwards Student Loan fund of $78,000, a bequest of $82,500 from Julian Price to assist in supplying a professorship of insurance and $280,000 from other sources. The Business foundation received approximately $1,000,000, the income from which is used to provide educational services and research for business and industry. On Nov. 29, the cornerstone was laid for the $2,000,000 Morehead Memorial building which would provide space for a planetarium and for an art collection.

The curriculums leading to graduate degrees in the school of public health were reorganized and the faculty strengthened. The school of pharmacy was authorized to offer the Ph.D. degree. Staff was added for expanding teaching and research in clinical psychology. A unit of the air officers reserve training corps was inaugurated. A new department of radio was authorized to give an undergraduate major leading to the A.B. degree. Of unusual significance in a state university was the beginning of a department of religion with plans to offer both elective courses and a major in the college of arts and sciences. (For statistics of endowment, enrolment, faculty, library volumes, etc., *see* UNIVERSITIES AND COLLEGES.)

**North Dakota.** A west north central state of the United States, admitted to the union Nov. 2, 1889. Popular name, "Flickertail State." Land area, 70,054 sq.mi.; water area, 611 sq.mi. Population (1940), 641,935; rural, 510,012; urban, 131,923. The bureau of the census estimated the population July 1, 1944, as 528,071. Capital, Bismarck (15,496). Chief cities, Fargo (32,580); Grand Forks (20,228); and Minot (16,577).

**History.**—The Garrison dam and Missouri-Souris irrigation projects were expected to increase the possible resources and population of the state appreciably. Federal agencies appropriated $22,785,545 to be spent in North Dakota in the year ending June 30, 1948. The Republican Organizing committee gained majorities in both house and senate of the 1947 legislature in the 1946 election. The chief state officers in 1947 were: governor, Fred G. Aandahl; lieutenant governor, C. P. Dahl; secretary of state, Thomas Hall; auditor, Berta E. Baker; treasurer, H. W. Swenson; attorney-general, Nels G. Johnson; superintendent of public instruction, G. B. Nordrum; commissioner of insurance, Otto Krueger; commissioner of agriculture and labour, Math Dahl; tax commissioner, John Gray; public service commissioners, C. W. McDonnell, S. S. McDonald, and Ben C. Larkin.

**Education.**—School teaching positions for the year ending June 1947 were 6,420; elementary 4,901; high school 1,519; enrolment 114,541 (elementary 85,912; high school 28,629); buildings, one-room and two-room 2,848; graded elementary 231; combinations (elementary and high school), 421; schools in session (1947–48), 3,500. Total enrolment in the state university, the state agricultural college and other state institutions of higher education, in the fall of 1947, was 12,091.

**Social Insurance and Assistance, Public Welfare and Related Programs.**—Public assistance, in the year to Nov. 30, 1947, was $6,190,988; average number aided per month, 11,971; types of aid: old-age, $4,145,998 with 8,912 persons; care of dependent and foster home children, $1,563,018 with 1,972 persons; blind $57,514 with 125 persons; general assistance, $424,458 with 962 persons. Cost of operating 4 charitable and 4 correctional institutions, biennium to June 30, 1949, $4,758,520. Average number of patients (1947): feeble-minded, 1,025; blind, 30; deaf, 88; tubercular, 230; correctional institutions, penitentiary, 218, state farm, 18, training schools, 1,175. Additional appropriations for improvements, repairs, new buildings and equipment, $1,674,370.

**Communications.**—Highway mileage, state, 7,223; rural, 107,413. Spent for construction of state highways (1947) $6,093,000, and for maintenance of state highways, $4,500,000. No additional amounts apportioned to counties. Railway mileage, 5,272.

**Banking and Finance.**—On June 30, 1947, 1 trust company and 110 state banks had resources of $311,959,931; deposits, $296,069,436. Resources, 41 national banks (4 with trust powers), $242,102,000; deposits, $230,975,000. On Dec. 31, 1946, 6 federal savings and loan associations had resources of $8,285,171; share capital of $7,201,998; 12 state building and loan associations, Dec. 31, 1946, had resources of $19,536,679 and share capital of $17,865,671. State treasury collections, year to June 30, 1947, $40,451,855; payments, $35,382,127; bonded debt, $17,350,250.

**Agriculture.**—Farm acreage in crops (1947), 17,082,000. Gross farm income (1947) of $619,491,400 averaged $10,500 per farm unit for 60,000 operators; of this livestock and its products made $216,660,000; crops, $381,650,400; and soil conservation payments, $21,181,000; additional crops of $125,109,300 were fed to livestock on the farms. Number of workers on farms in 1947 was 236,539, reduced from 252,052 in 1943.

*Leading Agricultural Products of North Dakota, 1947 and 1946*

| Crop | 1947 | 1946 |
|---|---|---|
| Spring wheat (other than durum), bu. | 105,868,000 | 107,460,000 |
| Durum wheat | 40,170,000 | 32,364,000 |
| Corn | 24,374,000 | 25,542,000 |
| Oats | 61,902,000 | 62,764,000 |
| Barley | 50,358,000 | 46,600,000 |
| Rye | 4,360,000 | 2,058,000 |
| Flax | 11,400,000 | 5,334,000 |
| Potatoes | 20,100,000 | 17,760,000 |
| Hay, tons | 3,281,000 | 2,736,000 |

**Manufacturing.**—Estimated number of employees in nonagricultural establishments in North Dakota (Sept. 1947), 219,000, an increase of 9% over 1940; and in manufacturing, 6,200 employees, an increase of over 1940; estimated yearly wages per worker in manufacturing, $2, Value of creamery butter, $34,750,000. There were approximately 15 places of business in North Dakota on Dec. 1, 1947, an increase of a 3,000 in 12 months.

**Mineral Production.**—Production of lignite coal, to June 30, 1947, 2,817,768 tons; value, $4,743,581. Employment, 509 miners, 285 ot New mines, 9; reopened, 17; closed, 35. Number of mines in operat 119. Natural gas, 24 wells, to Nov. 30, 1947, produced 364,630,000 cu yield from 16 wells, calendar year 1946, was 344,653,000 cu.ft.

(A. V. O.

**Northern Ireland:** *see* IRELAND, NORTHERN.
**Northern Rhodesia:** *see* RHODESIA, NORTHERN.

**Northwestern University.** An institution of hig learning at Evanston a Chicago, Ill. The university comprises the following divisio the college of liberal arts, the graduate school, the technologi institute and the schools of music, education, speech, comme and journalism, all located in Evanston (a suburb of Chicag on a campus bordering Lake Michigan; the medical, law a dental schools and the evening departments of the universi all on Chicago's near north side, on a campus six blocks fr the loop business district.

During the academic year ending Aug. 31, 1947, the u versity awarded 3,504 degrees and diplomas, and the gifts ceived totalled $1,582,318.

The enrolment of the university for the fall term of 19 totalled 24,254 students, consisting of 10,446 full-time studen and 13,808 part-time students enrolled in the evening divisio on the Chicago campus. The enrolment showed a 12% increa over that of the previous year, and veterans represented appro imately 50% of the total. The university would gladly ha restricted its enrolment to more normal figures, but such course was unthinkable in view of its obligation to do all could for the returning veterans.

Under trying conditions, the university was making eve effort to maintain the quality of its educational programs. Ab teachers were added to the staff. Late afternoon and eveni classes relieved congestion, and careful selection of studen made it possible to do good work under adverse conditions.

The large enrolment, however, created a financial problem f the simple reason that tuition represented only about 65% instructional costs. The increased enrolment did not bring i creased endowment. Its net effect was to impose an addition burden on the university's investment income, already too thin spread.

During the year the university completed a $3,000,000 buil ing, containing 208 apartments, which were immediately occ pied by faculty, staff and students. (For statistics of endov ment, enrolment, faculty, library volumes, etc., *see* UNIVERS TIES AND COLLEGES.)

**Northwest Territories.** The Northwest Territories com prise the mainland portion c Canada lying north of the 60th parallel of latitude betwee Hudson bay on the east and Yukon territory on the west, to gether with the islands lying between the mainland of Canad and the north pole, including those in James bay, Hudson ba and Hudson strait. Area, 1,304,903 sq.mi.; pop. (1941 censu 12,028, comprising 2,284 whites, 4,334 Indians, 5,404 Eskim and 6 others; estimated pop. (1947), 15,201. The seat of gov ernment is at Ottawa, Ont.

For purposes of organization and administration, the terr tories were divided into the provisional districts of Mackenzi Keewatin and Franklin by order in council dated March 1 1918. The Northwest Territories act (1927) provided for territorial government composed of a commissioner, a deput commissioner and five councillors appointed by the governor ncil. The Northwest Territories council in 1947 was com- ed as follows: commissioner, Hugh L. Keenleyside; deputy ımissioner, Roy A. Gibson; members of council: Stuart T. od, Robert A. Hoey, John G. McNiven, Louis de la C. lette, Harold B. Godwin; secretary, James G. Wright.

**ducation.**—The education of white, native and half-breed children in :kenzie district was carried on at day and residential schools oper- under the supervision of the dominion government by missions of Church of England in Canada and the Roman Catholic Church, and ublic schools situated at Fort Smith and Yellowknife, all of which ived financial assistance from the government. The new public school ellowknife, designed to provide greater educational opportunities for lren residing at other settlements in the territories, was completed occupied in 1947. A school inspector was appointed by the North- . Territories administration in 1946 to co-ordinate all educational ices in the territories, and improvements introduced during 1947 in- ed an extensive circuit system for the distribution of educational films the institution of special radio programs broadcast to the classrooms. imo children in the eastern arctic were given instruction at mission schools.

**ansportation and Communications.**—Inland water transportation on the :kenzie river system from railhead at Waterways, Alta., to points in :kenzie district was available during the open season of navigation. ular commercial air services, which also carried mail, were maintained ı Edmonton, Alta., to the principal settlements. Good progress had ı made at the end of the year on the construction of a new all-weather way from Grimshaw, Alta., to Hay River settlement on Great Slave . Medical centres, trading posts, missions, etc., in the eastern arctic served, in part, by R.M.S. "Nascopie," and following the wreck of vessel off Cape Dorset in July 1947, by auxiliary boat services from ıead at Churchill, Man., and by special charter vessel S.S. "North ıeer," from Montreal. Radio communication was maintained between ortant settlements and trading posts in the territories and outside ıts through government and private commercial radio stations.

**griculture, Lumbering and Fisheries.**—Limited agricultural and horticul- l operations were carried on at most of the settlements in Mackenzie r valley. Experimental substations operated by the department of culture at Fort Simpson and Yellowknife carried on field work during year. Sawmills in the vicinity of Slave river delta operated to meet demand for lumber at Yellowknife. Commercial fishing on Great e lake, inaugurated in 1945, produced a catch of 2,387,000 lb. (round ght) during the summer of 1946, and a catch of 251,965 lb. during 1946–47 winter season.

**ur Trade.**—The trapping of fine furs continued to provide the chief ıpation of the native population. The fur harvest for the year ended e 30, 1946, totalled 565,065 pelts, with an estimated value of $2,750,- . Fur trading was controlled by regulation, and was open only to se who had been issued permits and who had established permanent ts. Of the white residents, only those who, under the regulations, were uded in an established eligible list were permitted to hunt and trap, such individuals required an annual licence. Reindeer herding in the ckenzie delta region was continued in the interests of the native ulation.

**Aineral Production.**—Mineral development in 1947 included the produc- ı of gold, silver, pitchblende concentrates, from which radium and ura- m are extracted, and petroleum. Yellowknife continued to be the centre gold mining activity, with the Con-Rycon, Negus and Thompson- ndmark mines in production. Development work was continued at er properties in the district, with emphasis on prospecting and assess- nt work to hold claims already acquired in good standing. Mineral duction in the Northwest Territories during 1947 included 60,346 oz. gold, with an estimated value of $2,112,110; 16,192 oz. of silver, h an estimated value of $11,658; 244,194 bbl. of petroleum, with an imated value of $239,310. These are preliminary figures.

At the end of the year considerable work had been done on the new droelectric power development on Snare river, 94 mi. northwest of llowknife, designed to provide the power required by new mines in the llowknife district.

Production of pitchblende concentrates was continued at the mine of lorado Mining and Refining (1944) Ltd. at Port Radium on Great ar lake. The concentrates were shipped by air and rail to the com- ny's refinery at Port Hope, Ont., for reduction.

Crude oil production was continued by Imperial Oil Ltd. at Norman ells on Mackenzie river. Much of this oil was processed at the Norman ells refinery, and was then shipped by barge to Port Radium and to llowknife where consumption of petroleum products, including fuel oil, s maintained at a high level.

A building program on a scale hitherto unknown in the Northwest Ter- ories was carried on at Yellowknife settlement, and two-thirds of the ilding lots available within the settlement had been taken up at the l of the year.

Freight shipments to Yellowknife, from points north and south of the tlement, far exceeded in volume the shipments of any previous year. provements were made in navigation aids and landing fields available the use of aircraft operating in the Northwest Territories, and access ıds to airports at all principal settlements were maintained by the de- rtment of transport. The landing field at the Yellowknife airport, in- ding two 600 ft. x 5,200 ft. strips, with rolled gravel surfaces, was npleted in 1947. (R. A. G.)

**orway.** A democratic monarchy of northern Europe, bounded north by the Arctic ocean, east by Finland, e U.S.S.R. and Sweden and west by the North sea. Area 124,- 6 sq.mi.; pop. (Dec. 3, 1946, census, prelim. figs.) 3,123,883. apital, Oslo (1930 census, 253,124). Other principal cities with 1930 populations are Bergen (98,303); Trondheim (54,458) and Stavanger (46,780). Religion, Lutheran Christian. Ruler in 1947: King Haakon VII. Prime minister: Einar Gerhardsen.

**History.**—The major news of Norway in 1947 was the progress of the hard-fought battle of reconstruction. Imports were restricted, exports were stimulated, work stoppages were prohibited and the wartime compulsory arbitration of labour disputes was continued. By the end of 1946 total production was back to 90% of normal and the figure for Jan. 1947 rose to 109%.

Norwegians showed their hopefulness and vigour by planning a number of large-scale enterprises. Foremost of course was a rebuilding of the merchant and fishing fleet. In the first 10 months of 1947, 261 ships of 818,051 gross registered tons and a value of 660,000,000 kr. were added.

Food rationing was strict, and late in the year the amount of flour, sugar and fats allowed to bakeries was appreciably reduced. Meat continued to be very scarce in most of the country. Eggs continued to be very short.

International trade was encouraged in every way. The government made agreements for exchange of goods with Finland, Poland, the U.S.S.R. and other countries. Most significant were the arrangements made for tariff reductions in the series of trade treaties negotiated at Geneva with the U.S., Great Britain, France, the Benelux countries (Belgium, the Netherlands and Luxembourg), Brazil, Cuba, Australia, Canada, Chile, China and New Zealand. About 50% of Norway's exports to the U.S. were affected, on which the U.S. granted tariff reductions of about 50%; among the items concerned were whale oil and sardines. Norway in turn lowered its duties on automobiles from 40% to 30% and made adjustments on many other items. Parliamentary review was to precede application of the new rates.

Norway also made an agreement with Great Britain and Sweden (Nov. 18) to concert measures in financial exchange. This was a result of the Marshall Plan conference in Paris and the original agreement among Benelux, France and Italy.

Many of the measures described involved use of forceful social controls. The Norwegian government was frank in acknowledging that it took a popular mandate to the Socialist and Communist delegates to mean that the people favoured governmental oversight. But the Conservatives vociferously attacked the government at many points, and demanded a larger degree of individual freedom of action. The effectiveness of this attack—together with a trend rightward throughout western Europe—resulted in general losses to the left parties in the municipal elections of October. In a vote much larger than at the elections of 1945 the Conservatives increased their ballots by 56%, the Farmers by 49%, the Liberals by 32%, and the combined Labour parties by only 2.3%. The Communists lost votes absolutely as well as relatively. The Labour party lost 140 council seats and the Communists lost 150; the Conservatives gained 240. Although storting seats were not affected, the right won an impressive moral victory, all the more so because Premier Gerhardsen had declared that people would vote for or against the Labour government policy.

In international affairs Norway faced two delicate problems at the very beginning of the year. A dispute with Russia had been simmering since the fall of 1944 when Russia asked to become a partner with Norway in the defense of the island of Spitsbergen (Svalbard), and sole defender of Bear Island. Norway then had no choice but to be partly yielding, partly evasive, and passed a resolution to the effect that the defense of Spitsbergen was a joint concern of Norway and the Soviet Union. Russia forced the question into the open in Jan. 1947. On Feb. 15, the Norwegian storting met in secret session and voted 101 to 11 to deny the Russian request for bases. The 11 votes were all cast by Communists. Norway argued in its reply to the Soviet Union that conditions had changed with the ending of the war: one factor was the soviet-initiated vote for disarmament in the United Nations. Joint defense of an area under Norwegian sovereignty, it said, was contrary to the policy pursued by the Norwegian government since the liberation.

The other serious problem was in relation to Spain, which took umbrage at Norwegian leadership in the United Nations against General Francisco Franco and his government. Other states did little to back their acid remarks on Spain, and Norwegian restrictions on trade with Spain were annoying rather than effective. Hence, on Jan. 4 the Spanish government threatened to retaliate against Norway by excluding Norwegian ships from Spanish ports. After reviewing the entire situation in the storting Norway decided to negotiate directly with Spain for a settlement of the dispute in line with Norwegian interests.

Most spectacular of the year's Norse expeditions was the raft voyage across the Pacific, headed by 32 year old Thor Heyerdahl. On the 15 ton "Kon-Tiki" six scientist-navigators drifted from Peruvian shores to the Polynesian islands in a 4,300 mi. slow-motion passage, to prove that prehistoric South Americans could have drifted this same route and peopled the islands of the Southwest Pacific. They kept careful records of a variety of phenomena in the 101 days at sea.

**Finance.**—The monetary unit is the krone (20.16 U.S. cents in Sept. 1946 and remained quite stable throughout 1947). Along with rebuilding its fleet, and largely because of its expenditures for that, Norway's great problem was dollar exchange. Much of its gold reserves was used, its gold and foreign exchange dropping from $300,000,000 at the end of 1946 to $136,000,000 on Sept. 30, 1947. About $40,000,000 was left of a United States Export-Import bank credit, and there was a revolving credit of $16,000,000 set up by New York banks in 1946. In the spring of 1947 Norway also sold a $10,000,000 bond issue (3½%) in New York.

Norway sought only slight aid from the Marshall plan.

**Trade and Communication.**—For the first 10 months of 1947 imports amounted to 2,593,000 kr. and exports to 1,420,000,000. The October figure for imports was down to 247,600,000 kr., showing that import restrictions were taking effect. Exports consisted chiefly of the following items (for first 10 months 1947): fish and canned goods 372,500,000 kr., wood products 393,400,000 kr., metals 196,000,000 kr., fertilizers 84,000,000 kr., whale and cod oil 214,000,000 kr.

**Agriculture.**—Acreage tilled declined about 8.8% from 1942 (from 1939, 9.4%). The chief loss was in grain acreage. The number of pigs increased slightly (2,000) over 1946, but was 28.5% less than in 1939. Chickens increased 42.8% from 1946, but were still 40% less than in 1939. Horses were more numerous than in 1939, but 5.6% less than in 1946. Milk cows were 8% less than in 1939.

**Fisheries.**—The whaling season (from Dec. 1946 to April 1947) produced about 1,000,000 bbl. of whale and sperm oil (165,000 tons); with prices high this was expected to bring 250,000,000 to 300,000,000 kr. in foreign exchange. In the Lofoten fisheries a good catch of 146,000 tons of cod was valued at 55,000,000 kr., and the total cod take was 227,905 tons. Winter herring produced a record catch with a value of 79,000,000 kr.

**Manufacturing.**—As of 1944 there were 4,905 industrial establishments, with 153,436 workers, which produced goods valued at 2,363,282 kr. In 1947 the timber felled reached a record high and promised a paper output of 400,000 tons.

The general production index figure was 106 for June 1946, as compared with 105 for 1938 and 109 for 1939. Production committees, based on a U.S. wartime system, aided in maintaining high outputs. Employment by March 1946 was up to 170,900, only 2,100 less than in 1939, and remained at a high level through 1947, partly because of the government prohibition of work stoppages, partly because of national feeling and the needs of reconstruction.

**Mineral Production.**—Total mineral production, 1943, was valued at 49,575,000 kr. The chief products and the value of each were:

| | Weight | Value |
|---|---|---|
| Silver ore | 12,303,000 kg. | 709,000 kr. |
| Copper | 21,216,000 " | 9,406,000 " |
| Sulphur pyrites | 808,779,000 " | 23,252,000 " |
| Nickel | 15,679,000 " | 1,506,000 " |
| Titanium | 285,191,000 " | 8,830,000 " |
| Zinc and lead | 9,075,000 " | 1,403,000 " |
| Molybdenum | 386,000 " | 4,159,000 " |

(F. D. S.)

**Nose:** *see* Ear, Nose and Throat, Diseases of.

## Notre Dame, University of.

Quadrupling of its research program highlighted the 1947 program of the university. The expansion indicates the opportunities challenging universities through pure research developments and through the requirements of the government and industry. A peak enrolment of students conti to tax housing and academic facilities. Fifty new members added to the teaching staff in September.

The 1947 Laetare medalist was William G. Bruce, dis guished Milwaukee Catholic publisher, who became the recipient of the outstanding American award to Catholic laym

Academic highlights of the year were the opening of Medieval institute on Feb. 2; resumption of the universi summer session after a three-year wartime suspension; and first Natural Law institute, conducted by the College of I on Dec. 12–13.

Rev. J. Hugh O'Donnell, C.S.C., president of Notre Da during the war years (1940–46) died on June 12, 1947.

The 1947 commencement highlighted addresses by G George Kenney and Rt. Rev. Msgr. William Newton, bibl scholar, who received honorary LL.Ds. as did also I. O'Shaughnessy, St. Paul business leader and philanthropist; R J. Hugh O'Donnell, C.S.C., past president of the universi Mother Rose Elizabeth, C.S.C., superior general of the Sist of Holy Cross, and Most Rev. Lawrence Graner, C.S.C., D. alumnus-bishop of Dacca, Bengal, India.

Most significant development of the year for the universit future was the establishment of the University of Notre Da foundation. A university-alumni enterprise, it proposes to ordinate and stimulate fund-raising to enable the university meet effectively the opportunities offered it. Key to the foun tion program are 48 state governors and 200 city chairm organizing a program of public relations for the university the state and community levels.

Undefeated national cochampion, Notre Dame's football te attracted record crowds and publicity.

A new laboratory for advanced study of germ-free life begun.

(For statistics of endowment, enrolment, faculty, library v umes, etc., *see* Universities and Colleges.) (J. E. Ar.)

## Nova Scotia.

Most easterly of the three maritime pr inces of Canada, Nova Scotia entered union in 1867. Its area is 21,428 sq.mi., of which 325 sq. are lakes; pop. (1941) 577,962; (1947 est.) 621,000. The ca tal is Halifax, pop. (1943) 126,480; other cities are Sydn (1941) 28,305, Glace Bay 25,147.

**History.**—Liberal Premier Angus L. Macdonald continu in office and reported the largest peacetime surplus of $122,6 for the fiscal year ending Nov. 30, 1947. Lieut. Col. Hon. H. Kendall resigned as lieutenant governor and John Alexand Douglas McCurdy (first man to make an aeroplane flight in t British empire on Feb. 23, 1909) was appointed. The minimu age limit of industrial workers was raised from 14 to 16. T 1947 provincial Trade Union act made union officials respon ble for their activities, established fines for illegal striki and placed restrictions on employers to prevent discriminati The first general maritime coal strike after 1925 lasted 1 days. Miners lost $5,000,000 in wages and coal production w cut by 1,000,000 tons.

**Education.**—Total enrolment in educational institutions the 1944–45 school year was 133,107. In 1946, 250 of t province's 2,236 schools were without teachers. Faced with similar problem when the 1947 school year began, the gover ment increased schoolteachers' pay about 35%, and grant school boards $700,000 to meet the increases.

**Transportation.**—The government commenced a paved highway progra aimed at covering 800 new miles by 1950. A $1,000,000 causeway connect Cape Sable Island with the southern tip of the mainland w begun. After a hiatus of nearly a century, the province's ancient cro and-lion flag flew on 12 Nova Scotia-owned freighters.

**Agriculture.**—Agricultural sales in the first six months of 1947 totall $14,663,000 (same period 1946: $13,366,000). Livestock (cattle, hors ı, swine) stood at 445,000 in 1946 (1944: 498,000). The 1947 apple was estimated at 1,125,000 bbl.

**sources and Industry.**—Mineral production reached a high of $35,391,- in 1946, about $3,200,000 more than 1945. Increased production of and gypsum were the principal factors. After spending two years $1,000,000, the Sun Oil company abandoned drilling near Amherst. ı Jan. 1, 1946, to July 1, 1947, 52 new industries began operation in ı Scotia.

**oduction.**—The gross value of 1945 production was $338,522,173. net value was $182,724,409, which was 3.01% of Canada's total. capita production was $294.24. (C. Cy.)

**sery Schools:** *see* Education.

**sing:** *see* Hospitals.

**megs:** *see* Spices.

**rition:** *see* Food Research; Vitamins.

**ts.** The U.S. pecan crop of 1947 was estimated at 100,209,000 lb., compared with the short crop of 76,706,000 lb. vested in 1946 and an average of 107,784,000 lb. during –45. The crop of improved varieties was 42,887,000 lb., above the previous year but 10% below average. The lling crop was much better, being 45% above 1946 and 2% ve average. The improved varieties were grown mostly in southeast, 51% in Georgia alone, while the seedlings or varieties were grown in Texas and Oklahoma. The 1947 was short in Mississippi and Louisiana, where the Septem- hurricane caused severe loss. Florida also suffered from storms.

Valnut production was estimated at 64,800 tons, a smaller than in 1946 but above average. Dry weather during tember in California reduced the yield and produced smaller s. The Oregon crop was estimated at 5,800 tons compared the record 8,900 tons harvested in 1946. Damage from ht reduced the output.

he almond crop of California was estimated at 29,200 tons 3% below the record high crop of 37,800 tons harvested in 6. This crop was 65% above the average harvest.

ilbert production in Oregon and Washington was estimated 3,900 tons, a new record, compared with a production of 0 tons in 1946, the record to that year. The 1947 crop was out double the average of 4,310 tons for the two states. egon produced 7,800 tons and Washington 1,100 tons. (*See* Coconuts.) (J. C. Ms.)

*U.S. Pecan Production, 1947 and 1946*

(In thousands of pounds)

| | Improved varieties | | Wild varieties | |
|---|---|---|---|---|
| State | 1947 | 1946 | 1947 | 1946 |
| gia | 22,572 | 13,000 | 3,983 | 3,000 |
| ama | 6,175 | 6,642 | 1,265 | 2,098 |
| s | 3,100 | 3,400 | 17,900 | 19,100 |
| Carolina | 2,200 | 1,180 | 350 | 226 |
| homa | 2,000 | 1,100 | 22,500 | 5,900 |
| h Carolina | 1,734 | 1,224 | 306 | 120 |
| da | 1,670 | 2,650 | 1,104 | 1,876 |
| ssippi | 1,305 | 1,920 | 1,595 | 2,430 |
| iana | 1,300 | 2,250 | 3,000 | 6,750 |
| nsas | 654 | 250 | 3,196 | 950 |
| ouri | 60 | 16 | 1,440 | 484 |
| is | 17 | 3 | 683 | 137 |

**asaland.** A British protectorate in central Africa surrounded by northern Rhodesia, Tanganyika the Portuguese Mozambique. Area: 47,949 sq.mi., including 353 sq.mi. of water; pop. (1945 census) 2,050,051, (1946 ) 2,230,955, including 3,100 Asiatics, and 2,400 Europeans. pital: Zomba. Governor: G. W. T. Colby. Public finance 44): revenue (including grants in aid) £1,029,282; expendi- e £857,194; public debt £3,779,161. Foreign trade (1945): orts £1,876,063; imports £1,620,882. Chief exportable prod- s: tobacco, tea, cotton, beans, groundnuts, tung oil, sisal.

**lon:** *see* Rayon and Other Synthetic Fibres.

**Oats.** The U.S. oat crop of 1947 was estimated at 1,215,970,000 bu., a decline from the 1,497,904,000 bu. record crop of 1946. The average of 1936–45 was 1,161,282,000 bu. Lower production in 1947 was mainly due to an 11% drop in acreage to 38,648,000 ac. from the 43,205,000 ac. harvested in 1946 and also a decline in average yield per acre to 31.5 bu. from 34.7 bu. in 1946. Unfavourable weather in April and May delayed planting and kept growers from seeding full acreages in most of the heavy producing north central states. Dry, hot weather reduced yields on late planted areas.

*U.S. Oats Production in Leading States, 1947, 1946 and 10-year Average, 1936–45*

(In thousands of bushels)

| State | 1947 | 1946 | 10-yr. average | State | 1947 | 1946 | 10- yr. average |
|---|---|---|---|---|---|---|---|
| Iowa | 180,609 | 211,575 | 189,046 | North Carolina | 11,623 | 12,870 | 6,722 |
| Minnesota | 163,332 | 197,506 | 153,589 | Montana | 10,478 | 10,912 | 11,086 |
| Wisconsin | 120,758 | 124,758 | 92,318 | Oregon | 10,132 | 9,782 | 9,527 |
| Illinois | 117,005 | 165,256 | 129,381 | Arkansas | 9,641 | 7,650 | 6,418 |
| South Dakota | 95,511 | 100,398 | 62,789 | Idaho | 7,568 | 7,216 | 6,958 |
| North Dakota | 61,902 | 62,566 | 52,008 | Colorado | 6,900 | 5,610 | 5,255 |
| Nebraska | 61,672 | 71,708 | 45,603 | Washington | 6,812 | 6,144 | 7,762 |
| Kansas | 40,455 | 40,556 | 35,492 | Tennessee | 6,095 | 6,492 | 3,055 |
| Michigan | 38,150 | 71,890 | 45,662 | Alabama | 5,083 | 5,537 | 3,821 |
| Missouri | 30,107 | 57,133 | 43,861 | California | 4,860 | 5,700 | 4,479 |
| Indiana | 30,320 | 55,068 | 42,145 | Virginia | 3,456 | 4,260 | 2,786 |
| Oklahoma | 30,276 | 24,780 | 26,572 | Louisiana | 3,348 | 2,640 | 2,621 |
| Texas | 30,248 | 36,366 | 33,236 | Maine | 2,625 | 2,840 | 3,576 |
| Pennsylvania | 19,865 | 30,033 | 25,078 | Kentucky | 2,415 | 3,213 | 1,667 |
| South Carolina | 19,630 | 20,097 | 13,352 | Wyoming | 5,049 | 4,666 | 3,495 |
| Ohio | 19,058 | 62,235 | 39,970 | Utah | 2,112 | 1,763 | 1,735 |
| Georgia | 16,100 | 16,404 | 11,347 | Maryland | 1,216 | 1,254 | 1,098 |
| New York | 13,338 | 32,360 | 22,989 | New Jersey | 1,000 | 1,440 | 1,335 |
| Mississippi | 12,480 | 10,571 | 7,785 | | | | |

The world's oat crop was not as good in 1947 as in the preceding three years; it was estimated at 4,120,000,000 bu. compared with a prewar average of 4,363,000,000 bu., 1935–39. Yields were lower in Europe than in previous years, although the acreage was well maintained and was approaching the prewar level. The crop in France, Germany and the United Kingdom reflected the effects of unfavourable weather. (J. C. Ms.)

**Obituaries.** The following is a selected list of prominent men and women, of the United States and other countries, who died during the year 1947.

**Abadía Méndez, Miguel** (June 5, 1867–May 15), Colombian politician.

**Agate, James Evershed** (Sept. 9, 1877–June 6), British drama critic.

**Ajalbert, Jean** (1863–Jan. 14), French writer.

**Albers, Homer** (Feb. 28, 1863–Jan. 9), U.S. lawyer, educator.

**Allen, Sir William (James)** (Oct. 1866–Dec. 20), Northern Ireland politician.

**Anderegg, Rupert Andrew** (1894?–July 18), U.S. flood control expert, educator.

**Anderson, William Gilbert** (Sept. 9, 1860–July 7), U.S. athletics director.

**Andrae, Tor Julius Efraim** (1885–Feb. 24), Swedish clergyman, politician.

**Anglesey, Charles Henry Alexander Paget,** 6th Marquess of, (April 14, 1885–Feb. 21), British peer.

**Anspacher, Louis Kaufman** (March 1, 1878–May 10), U.S. writer.

**Argüello, Leonardo** (1875–Dec. 15), Nicaraguan politician and physician, was born in León, Nicaragua, and studied medicine in León and Europe. Dr. Argüello participated in the revolution of 1912 and subsequently was deputy to the national congress and held several cabinet posts. He was an unsuccessful candidate for president in 1936, but nominated again in 1946, he was elected Feb. 1, 1947, and was inaugurated May 1. However, 25 days later he was deposed by Gen. Anastasio Somoza, former president and powerful political leader. Argüello fled to the Mexican embassy where he was given asylum for six months. Finally on Nov. 20, he was permitted to leave with his family for Mexico City where he died.

**Armstrong, Warwick Windridge** (May 22, 1879–July 13), Australian cricketer.

**Ashley, Clifford Warren** (Dec. 18, 1881–Sept. 18), U.S. marine artist, author.

**Ashley, Raymond Harman** (March 29, 1881–Dec. 1), U.S. chemist, educator.

**Asquith, Herbert** (March 11, 1881–Aug. 5), British novelist, poet.

**Atcheson, George, Jr.** (Oct. 20, 1896–Aug. 16), U.S. government official and diplomat, was born in Denver, Colo. He served in the army during World War I as an aeronautics instructor and was graduated from the University of California, Berkeley, with a B.A. degree in 1919. He entered the U.S. foreign service in 1920 and spent the next two decades in various diplomatic posts in the orient. In 1942 he was dispatched to Chungking as counsellor of the U.S. embassy, but he clashed with Ambassador Patrick J. Hurley over policy. Hurley accused Atcheson of "disloyalty," and while the latter was removed from his post on grounds of insubordination, he was subsequently cleared of the disloyalty charges.

Atcheson's next assignment, in Sept. 1945, was that of political adviser to Gen. Douglas MacArthur, supreme commander of allied occupation forces in Japan, who made him the U.S. member of the Allied four-power council in Tokyo.

An army plane, in which Atcheson was en route from Tokyo to Washington, D.C., sank after an emergency landing in rough seas west of Honolulu.

Atcheson was one of the four persons who were missing after the craft went down and he was presumed dead.

**Atwater, Helen Woodward** (May 29, 1876–June 26), U.S. home economist.

**Aung San, U** (1914?–July 19), Burmese national leader, was imprisoned when an undergraduate at Rangoon university for subversive activities. Shortly after the outbreak of World War II, he escaped to Japan, where he received military training. During the Japanese occupation he negotiated with the British and, as a result, the Burmese National army attacked the Japanese on April 26, 1945, and assisted the Allies. From the political movement accompanying this armed resistance was formed the Anti-Fascist Peoples' Freedom league, uniting most parties under Aung San's leadership. Soon after the liberation, Aung San refused office in the executive council, unless his party was given a large majority of seats. On Sept. 26, 1946, a new council with powers of interim government was formed, with the governor as chairman and Aung San as deputy chairman and counsellor for defense and external affairs. Aung San demanded that steps be taken toward Burma's constitutional independence and headed a delegation which visited London in Jan. 1947, where a wide measure of agreement was reached with the British government. In the election for a constituent assembly, held in April and boycotted by extremists and dissidents from his policy, his party won 196 out of 202 seats. Five men armed with Sten guns and rifles broke into the council chamber at Rangoon while the executive council was in session and assassinated Aung San and six other members.

**Ayres, Louis** (Aug. 25, 1874–Nov. 30), U.S. architect.
**Backe, Herbert** (1896–April 6), German politician.
**Bacon, Charles Sumner** (July 30, 1856–July 10), U.S. obstetrician.
**Bacon, Sir Reginald (Hugh Spencer)** (1863–June 9), British naval officer.
**Bagg, Halsey Joseph** (Oct. 23, 1889–April 14), U.S. research biologist.
**Baily, William Lloyd** (Dec. 26, 1861–April 6), U.S. architect, ornithologist.

**Bainbridge, William Seaman** (Feb. 17, 1877–Sept. 22), U.S. surgeon and cancer authority, was born in Providence, R.I., and in 1893 was graduated from the College of Physicians and Surgeons of Columbia university. He spent several years in postgraduate work in European hospitals.

In the United States, Dr. Bainbridge won wide renown as the first U.S. surgeon to use spinal analgesia. He also developed new surgical methods for use in cancer cases and a special technique for removal of cancer-infected breasts.

He was professor of operative gynaecology of the New York Post-Graduate Medical school, professor of surgery at New York Polyclinic Medical school and hospital, and surgeon and secretary of the research committee of the New York Skin and Cancer hospital.

He served in World War I as ship's operating surgeon and as medical observer with Allied field armies. Later he became consulting surgeon of the 3rd naval district and attending specialist in surgery with the U.S. public health service of the New York city area.

Author of *The Cancer Problem* (1914), Dr. Bainbridge also wrote numerous monographs on cancer and surgical subjects. He died at Danbury hospital, Bethel, Conn.

**Bajpai, Sir Seetla Prasad, Rai Bahadur** (April 19, 1865–Feb. 1), Indian jurist.
**Baldwin, Edward Robinson** (Sept. 8, 1864–May 6), U.S. physician.
**Baldwin, Elbert** (1894?–Dec. 6), U.S. economist.

**Baldwin of Bewdley, Stanley Baldwin, 1st Earl** (Aug. 3, 1867–Dec. 14), British statesman and thrice prime minister, was born at Bewdley, Worcestershire, the only child of Alfred Baldwin, M.P., and was educated at Harrow and Trinity college, Cambridge. For his early life see *Encyclopædia Britannica.*

After nine months out of office, Baldwin's second term as prime minister, which saw Britain's return to the gold standard, the general strike of May 1926 and the passing of the Trades Disputes act, 1927, began in Nov. 1924, when the Conservative party was returned in the house of commons. The general elections of June 1929 returned a Labour government, but in Aug. 1931 a National government was formed in which Baldwin was lord president of the council. From Sept. 1932 to 1934 he held the additional post of lord privy seal.

On the resignation of J. Ramsay MacDonald in June 1935, he became prime minister for the third and last time, for on May 28, 1937, he retired—a sick man needing a long rest. During his last period as premier, the grave constitutional crisis arose, which ended in the abdication of King Edward VIII and the accession of the duke of York as King George VI.

His services to the state were recognized by the conferment of the titles of Earl Baldwin of Bewdley, Viscount Corvedale and a knighthood of the Order of the Garter. He died at his home near Stourport-on-Severn, Worcestershire.

**Barbeau, Antonio** ( ?–June 14?), Canadian neurologist.

**Barcroft, Sir Joseph** (1872–Mar. 21), British physiologist, was educated at Bootham school, York, the Leys school, Cambridge and at King's college, Cambridge university, where he was made a fellow in 1901. His work was classical in three major fields: the physical chemistry of oxyhaemoglobin, the distribution of the blood between the storage depots and the circulation; and the physiology of foetal life. His work in World War I made him a leading authority on defense against war gases. He was elected a fellow of the Royal society in 1910, was appointed a C.B.E. in 1918; was elected president of the physiological section of the British association in 1920; Fullerian professor of physiology at the Royal institution, 1923–26; and was professor of physiology at Cambridge university, 1926–37. He was knighted in 1935. From 1941 he was director of the unit of animal physiology under the Agricultural Research council. Many learned societies and universities honoured him, and in 1943 he received the Copley medal, the Royal society's highest honour. He was editor of the sixth edition of *Huxley's Physiology*, joint editor of the *Cambridge Comparative Physiology* and was a departmental editor (physiology) of *Encyclopædia Britannica*. He died at Cambridge.

**Barnard, William Nichols** (April 24, 1875–April 3), U.S. educator.
**Batchelder, Charles Foster** (July 20, 1856–Sept. 3), U.S. naturalist.
**Bauer, Charles Christian** (Nov. 17, 1881–March 15), U.S. tax authority.
**Baxter, Bruce Richard** (Aug. 18, 1892–June 20), U.S. Methodist bishop.

**Beaman, Bartlett** (July 20, 1891–Nov. 14), U.S. army officer.
**Beatty, Bessie** (Jan. 27, 1886–April 6), U.S. radio commentator.
**Beaumont, Henry** (June 7, 1902–Feb. 21), U.S. educator, psychologist.
**Beedy, Carroll Linwood** (Aug. 3, 1880–Aug. 30), U.S. congressman.
**Belcher, George Frederick Arthur** (Sept. 19, 1875–Oct. 3), British cart
**Belloc, Marie Adelaide** (Mrs. Lowndes) (1868?–Nov. 14), British n
**Belmont, Perry** (Dec. 28, 1850–May 25), U.S. diplomat.
**Belson, J. Harry** (1906?–March 13), Canadian chess champion.
**Bench, John J.** (1905?–Dec. 9), Canadian senator.
**Benlliure y Gil, Mariano** (Sept. 8, 1862–Nov. 9), Spanish sculptor.

**Bennett, Richard Bedford Bennett, 1st Viscount, of Mickleham i** County of Surrey and of Calgary and Hopewell, in Canada (J 1870–June 26), was prime minister of Canada 1930–35. Born at Ho N.B., and educated in local schools, he took a law degree at Dalhous versity, Halifax, and built up a successful law practice, first at Cha N.B., and later at Calgary, Alta. He entered politics in 1898 as a m of the legislature of the Canadian Northwest Territories. From 1911– represented Calgary in the Canadian parliament. For a short time, in he was minister of justice and attorney general, but was not thereaft litically active until 1925 when he re-entered parliament and in 1926 b minister of finance. In the following year he became leader of the Co ative party, a post which he held until 1938. In 1930 he became minister, and attended the 1930 Imperial conference in London whe came out in favour of the principle of empire preferences. Apart fro tending to negotiations in Washington with President Herbert Hoo 1931, he played an important part at the Ottawa Empire conference of in which the system of empire preferences was greatly strengthene represented Canada at the World Economic conference in London in at the League of Nations in 1934 and again in London at the celebra of King George V's silver jubilee in 1935. In that year, he resigne premiership after the Conservative party was defeated in the general tion, and in 1936 visited Australia and New Zealand. In 1938 he r from public life in Canada and settled at Mickleham, Surrey, Eng During World War II he served in an advisory capacity to Lord Beaver at the ministry of aircraft production. He was created a viscount in and died at Mickleham. *See* also *Encyclopædia Britannica.*

**Benton, James Webb** (July 9, 1892–Oct. 22), U.S. diplomat.
**Beresford, John Davys** (March 7, 1873–Feb. 1), British novelist.

**Bernard, Tristan** (Sept. 17, 1866–Dec. 7), French playwright, humoris novelist, was born in Besançon. For his early career, see *Encyclo Britannica.* Abroad, Bernard was noted principally for his plays, b home he was perhaps even more famed as a humorist.

Bernard left Paris for Cannes to escape the German occupation d World War II. But his caustic comments on the occupation offende conquerors and, arrested on the Riviera in Sept. 1943, he was intern Drancy until the liberation.

Among his later works are *l'Enfant prodigue de Vésinet* (1921), *Le V imprevu* (1928), *Aux abois* (1933), *Paris Secret* (1933), *Visites nocturnes* ( and *Robins des bois* (1935).

Bernard died at his home in Paris.

**Berreta, Tomas** (Nov. 22, 1875–Aug. 2), Uruguayan soldier and polit was born near Arroyo Miguelete, Uruguay, the son of an Italian li emigré. He participated in the revolutions that shook Uruguay bet 1896 and 1904, tied his fortunes to those of Pres. José Batlle y Ordoñe became chief of Batllista armed forces.

In the ensuing years, Berreta became an important figure in the go ment. He was a national deputy, 1922–29, and a member of the Nat Council of Administration from 1929 until its dissolution by Pres. Ga Terra in 1933.

An opponent of the Terra regime, Berreta was banished but later permitted to return to Montevideo, where he once more assumed a lea role in the government. In 1942 he was elected to the council of state later became minister of public works. He reached the peak of his poli career in 1946, when as candidate of the liberal Colorado party, he defe Luis Alberto de Herrara for the presidency. In Feb. 1947, the new presi elect visited Pres. Harry S. Truman in Washington. At the time, he phasized that his purpose was not to engineer a loan but to tighten bon Uruguayan-U.S. friendship.

Berreta, who was inaugurated March 1, 1947, died in Montevideo an emergency operation.

**Bidwill, Charles W.** (1896?–April 19), U.S. sports promoter.

**Bilbo, Theodore Gilmore** (Oct. 13, 1877–Aug. 21), U.S. politician, was in Juniper Grove, Miss. At the age of 19, he became an active Baptist preacher. He was admitted to the Tennessee bar in 1908.

Elected to the Mississippi state senate in 1908, Bilbo was accused years later of taking a bribe to vote for a candidate to the U.S. senate, later asserted he had taken the gift to "trap" the giver.

Bilbo's explanation was received with skepticism by his colleagues voted a resolution into the state journal calling for his ouster.

The Mississippi politician, however, toured the back country, and, florid oratory, convinced his constituents that he was being victimized issue also helped him win election as lieutenant governor in 1911 and governorship in 1915 and again in 1927.

In 1934 Bilbo was elected to the U.S. senate and was re-elected in and 1946. In the upper house, he denounced the anti-lynching bill an Committee on Fair Employment Practice measure. He spoke for "w supremacy," urged deportation of all Negroes to Africa and (in 1946) mitted membership in the Ku Klux Klan.

In Dec. 1946, however, senate committees investigated charges that used intimidation to keep Negroes from the polls in Mississippi and tha used his office to get financial favours from war contractors. During inquiry into the bribe charges, Bilbo admitted receiving certain gifts parently for the purpose of promoting the candidacy of Wall Doxey fo senate, but claimed there was nothing "improper" in these actions. the senate refused to permit Bilbo to take the oath of office in Jan. 194 did not expel him. He died in New Orleans, La.

**ley, George Richard Lane-Fox,** 1ST BARON (Dec. 15, 1870–Dec. 11), itish politician.
**k, Charles Clarke** (July 29, 1858–Dec. 23), U.S. jurist.
**, Arthur** (Sept. 2, 1869–Feb. 4), British army officer.
**e, Maurice Adin** (Dec. 1, 1882–Dec. 14), U.S. horticulturist.
**kfort, Isaac Moses** (Feb. 5, 1846–July 6), U.S. educator.
**n, Jean-Richard** (1884–March 15), French writer, politician.
**ne, Samuel George** (May 19, 1868–July 17), U.S. author.

**ard, Pierre** (Oct. 3, 1867–Jan. 24), French painter, was born at Fontenay-x-Roses, near Paris. He attended the Académie Julian and was erward inscribed at the École des Beaux-Arts but did not attend ere. He was a civil servant until 1899 when he resigned in order to vote himself to painting. He had first been attracted to decorative art, signing the covers of musical scores, screens and posters, and illustrating oks. About 1890 he began to execute coloured lithographs and in 1895 hibited stained-glass windows. His first paintings were exhibited at the lon des Indépendants in 1891. An important exhibition at Durand-Ruel's llery in 1896 made his work generally known.

Bonnard was a post-impressionist whose most characteristic pictures were interiors with figures, although he painted many landscapes and still life bjects. Together with his friend, Jean Edouard Vuillard, he was often scribed as an "intimist." Early in his career he was for a short time sociated with the "Symbolist" painters led by Paul Gauguin in Brittany. olour was his chief means of expression, in which he was influenced by erre Renoir, his design and drawing owing something to Hilaire Degas and enri de Toulouse-Lautrec. In his charming and affectionately-treated in-riors the quiet forms are resolved into colours whose brilliant and subtle tterns give them life.

The Tate gallery in London possesses four paintings by Bonnard and his ork is represented in most large modern collections.

**ner, Lucius Messenger** (Aug. 22, 1878–June 26), U.S. hotel manager.
**h, Fenton Whitlock** (May 12, 1869–July 26), U.S. jurist.
**, Carl Oscar** (March 3, 1879–May 8), U.S. artist.
**ater, Sir Frank H.** (April 3, 1866–Nov. 10), British politician.
**erman, Charles William** (Jan. 22, 1851–June 11), British trades union ficial, politician.
**es, Robert E.** (Feb. 18, 1899–Nov. 10), U.S. educator.
**lbury, Samuel** (April 30, 1883–Aug. 29), U.S. medical author.
**lley, Frederick Van Ness** (April 12, 1898–May 24), U.S. congressman.
**lley, Walter Parke** (July 7, 1862–Sept. 14), U.S. research chemist.
**nham, William Gibbons** (July 13, 1874–July 8), U.S. baseball executive.
**ner, Olaf Martinius** (Feb. 9, 1869–Jan. 3), U.S. portrait painter, educator.
**ges, H. F. G.** (1902?–Aug. 10), Canadian cabinet minister.
**k, Sir Osmond de Beauvoir** (Jan. 5, 1869–Oct. 14), British naval officer.
**oks, Eugene Clyde** (Dec. 3, 1871–Oct. 18), U.S. educator.
**wn, Sir William (Barrowclough)** (1893–Feb. 11), British government of-cial.
**vne, Charles** (Sept. 28, 1875–Aug. 16), U.S. physician, congressman.
**vne, Charles Albert** (Aug. 12, 1870–Feb. 3), U.S. chemist.
**vning, Sir Montague Edward** (Jan. 18, 1863–Nov. 4), British naval officer.
**is, Henry Frederick** (Nov. 24, 1889–Jan. 20), U.S. naval officer.
**ant, William Letchworth** (1871–June 10), U.S. palaeontologist, author.
**k, Sir Percy Carter** (1871–Oct. 3), British organist, music professor.
**ington, Joseph** (Sept. 5, 1855–Oct. 21), U.S. jurist.

**ard, Robert Lee** (Jan. 15, 1861–Sept. 11), U.S. army officer, was born at oungsboro, Ala. For his early career, see *Encyclopædia Britannica.* Gen-al Bullard was commander of the U.S. 2nd army during World War I and d the celebrated counterattack in the second battle of the Marne (July 18) hat turned defeat into victory.

In 1925 Bullard retired from active service with the rank of lieutenant eneral. He became head of the National Security league, advocated that reparedness was the best insurance against war, contributed articles on omestic and world affairs to the Hearst papers and, in 1935, alleged that communists" were undermining the country's relief program.

General Bullard died at the Fort Jay hospital, Governors Island, N.Y.

**gess, Ellis Beaver** (Nov. 19, 1869–Dec. 20), U.S. Lutheran churchman.
**gess, William Starling** (Dec. 25, 1878–March 19), U.S. naval architect, ngineer.
**nham, Frederick Russell** (May 11, 1861–Sept. 1), U.S. explorer.
**russ, Julian Ashby** (Aug. 16, 1876–Jan. 4), U.S. educator.
**ton, Sir Pomeroy** (1868?–Oct. 15), British journalist.
**e, John Crichton-Stuart,** 4TH MARQUESS OF (June 20, 1881–April 25), Brit-sh peer.

**ler, Nicholas Murray** (April 2, 1862–Dec. 7), U.S. educator and publicist, as born at Elizabeth, N.J. For his early career, see *Encyclopædia Britan-ica.* Dr. Butler was associated with Columbia university for 60 years—he last 44 as president of the institution. Throughout his lifetime, he worked ndefatigably for world peace and his efforts to promote international under-tanding were recognized in 1931 when he was named co-winner of the Nobel eace prize.

Although a lifelong Republican, he aligned himself against the so-called noninterventionists" in the party, and upheld the Rooseveltian foreign olicy in the critical years preceding U.S. entry into World War II.

He was the author of *The Path to Peace* (1930), *Looking Forward* (1932), *etween Two Worlds* (1934), *Family of Nations* (1938), *Across the Busy Years* 1939), *Why War* (1940) *Liberty, Equality, Fraternity* (1942), and *The orld Today* (1946).

After his retirement from the university in 1945, Dr. Butler became totally lind and he died in New York city, N.Y.

**loux, Cecil John** (May 24, 1883–Aug. 17), British church historian.
**thness, Norman Macleod Buchan,** 18TH EARL OF (April 4, 1862–March 5), Scottish peer.

**decote, Thomas Walker Hobart Inskip,** 1ST VISCOUNT (March 5, 1876–Oct. 1), British lawyer, educated at Clifton and King's college, Cambridge. He as called to the bar in 1899, and joined the western circuit where with his amily's Bristol connections he soon developed a large practice. He made wo unsuccessful attempts to enter parliament in 1906 and 1910, and during orld War I was at the admiralty where he became head of the naval law branch. In 1918 he was elected Unionist member for Bristol Central, and in 1922 commenced his first term of office as solicitor general. With the fall of the government in Jan. 1924 he went out of office, only to return in November again as solicitor general. During 1928-29 he was attorney general until the general election when he lost his seat in the commons. Again solicitor general, 1931-32, having been elected for Fareham (Hants.), and attorney general, 1932-36, when he was appointed to the newly created post of co-ordination of defense.

As World War II approached he was succeeded by Admiral of the Fleet Lord Chatfield, and became dominions secretary. In Sept. 1939 he became lord chancellor, until May 1940 when for six months he returned to the dominions office. In October he was appointed lord chief justice of England. Because of ill-health he resigned in Jan. 1946. He always took a keen interest in the affairs of the church, and in 1927 and 1928 attracted public opinion in the debates on the revised prayer book and his efforts led to its eventual rejection. He was a member of the assembly of the Church of England and president of the National Church league. He took silk in 1914, and was raised to the peerage as Viscount Caldecote of Bristol in 1939. He died at Godalming, Surrey.

**Caldwell, Otis William** (Dec. 18, 1869–July 5), U.S. educator.
**Callahan, William Washington** (1864?–Aug. 6), U.S. jurist.
**Cameron, Arnold Guyot** (March 4, 1864–July 29), U.S. editor, author, educator.
**Campbell, Robert Fishburne** (Dec. 12, 1858–April 3), U.S. churchman.
**Campbell, Wallace Ronald** (Feb. 3, 1882–Aug. 10), Canadian motorcar executive.
**Capart, Jean** (1877?–June 16), Belgian archaeo'ogist, Egyptologist.

**Capone, Alphonse** ("SCARFACE AL") (Jan. 17, 1899–Jan. 25), U.S. gangster, earned the reputation as "public enemy No. 1" during the turbulent prohibition era (1920–33). He was born in Naples, Italy, was brought up in Brooklyn, N.Y., and did not get beyond the fourth grade in school.

By the time Capone was 19, he was reputed to have committed several robberies and was suspected of two murders.

He went to Chicago, Ill., to work for Johnny Torrio, owner of vice dens and distributor of bootleg whiskey, and soon became Torrio's right-hand man and partner. Torrio and Capone "muscled into" territory controlled by rival gangsters in the city and suburbs. They developed an enormous bootleg business and gained control of gambling, prostitution, dance halls and dog tracks.

In a gang war for undisputed control over the Chicago underworld area, the Capone gang slew Dion O'Bannion, a rival gang leader, in 1924. Torrio retired from the "business" in 1925, and Capone was left in control. The climax of the gang war was the St. Valentine's day massacre of 1929, during which Capone "troopers," disguised as policemen, slew seven members of the Moran gang in a Chicago garage.

In 1929, Capone entered the political arena and openly endorsed the candidacy of "Big Bill" Thompson for mayor.

The profits that flowed from Capone's activities were huge. Although the municipal authorities were powerless to bring him to trial for the 300-odd murders which he was said to have inspired, the federal government arrested him on charges of evading income taxes. Tried in Oct. 1931, he was convicted, sentenced to 11 years in federal prison and fined $50,000 and $20,000 for costs.

Capone was released in 1939, broken physically and mentally, a victim of paresis. He retired to his estate at Miami Beach, Fla., where he died.

**Carey, Eben James** (July 31, 1889–June 5), U.S. educator and anatomist, was born in Chicago, Ill. He received his degree of doctor of science at Creighton university, Omaha, Neb., in 1920 and his medical degree from Rush Medical college in Chicago, in 1925.

After six years on the faculty at Creighton, as an assistant professor of anatomy, he went to Marquette university, Milwaukee, Wis., in 1920 as director and professor of anatomy, becoming dean of Marquette's medical school in 1933.

Dr. Carey won international recognition for his research work on bone, muscles and nerves and in his later years he devoted much of his research to poliomyelitis under grants financed by the National Foundation for Infantile Paralysis.

He received numerous medals and awards from such institutions as the American Medical association, the Radiological Society of North America and the American Congress of Radiology. In 1939 Dr. Carey reported his discovery that vibration of a protoplasmic jelly inside the muscles is the secret of strength. He was the author of *Studies in Anatomy* (1924).

Dr. Carey died in Milwaukee, Wis.

**Carey, Harry** (Jan. 16, 1878–Sept. 21), U.S. stage and screen star, was born in New York city, N.Y., and was christened Henry De Witt Carey, 2nd. He grew up in the Bronx, played football on the New York university team and studied law at New York Law school. He gave up law for drama, entered motion pictures in 1908 and went to Hollywood three years later where he became one of the "kings of the saddle" of the silent film "horse operas."

The eastern born-and-bred star won great popularity in his western roles with his impersonation of the western drawl and bowlegged gait. Furthermore, he fitted in with the youthful preconception of what a "typical" cowboy looked like.

After the advent of the talking film, Carey's star declined temporarily but rose again when he was given the leading role in *Trader Horn* (1929).

Among later pictures in which he was either starred or featured were *Valiant is the Word for Carrie, Mr. Smith Goes to Washington, The Shepherd of the Hills, Sundown* and *Air Force.*

In 1940 he appeared on Broadway in *Heavenly Express.* He also played in the 1941 revival of Eugene O'Neill's *Ah, Wilderness!* and in *—But Not Goodbye* in 1944.

He died at his home in Brentwood, Calif.

**Carey, William Gibson, Jr.** (July 3, 1896–Oct. 4), U.S. industrialist.

**Carlson, Evans Fordyce** (Feb. 26, 1896–May 27), U.S. marine corps officer, was born at Sidney, N.Y., the son of a Congregationalist minister. Carlson joined the army at the age of 16, saw service in the Philippines and Hawaii and was honourably discharged in 1915 as a top sergeant.

He was recalled to service during the Mexican border troubles, and during World War I he went overseas with the American expeditionary force. Upon the end of the war he had attained a captaincy and had been decorated by Italy and France. He also was cited by Gen. John J. Pershing.

Soon wearying of civilian life, he joined the marine corps as a private in 1922. The following year, he was commissioned as a second lieutenant and later served in China and Nicaragua. At the height of Japanese aggression in China, Carlson was appointed a military observer by Adm. Harry E. Yarnell, in which capacity he made a 2,000-mi. trip into the interior areas of China. He found much to praise in the tactics and fighting ability of the guerrilla forces and penned his experiences and observations in two books, *Twin Stars of China* and *The Chinese Army* (1940).

Carlson subsequently resigned from the marines and revisited China in 1940 and 1941 as a civilian. Convinced that Japanese policy in the far east would eventually lead to war with the United States, he rejoined the marines in 1941 as a major and set up a special raiding unit of 1,000 picked men, patterned in some respects on the guerrilla units he had observed in China.

Thoroughly schooled in guerrilla tactics, "Carlson's Raiders," as the force was known, made its first successful hit-and-run raid on Japanese-held Makin Island in Aug. 1942. Later, it participated in operations on Guadalcanal, the Gilbert Islands and Saipan. Carlson was promoted to lieutenant colonel in 1944, and became a brigadier general upon his retirement in July 1946.

After the war, Carlson joined the Progressive Citizens of America, of which he became national vice-chairman. He died at a camp on Mt. Hood, Ore.

**Carmichael, Archibald Hill** (June 17, 1864–July 15), U.S. congressman.
**Carpenter, Ford Asham** (March 25, 1868–Nov. 10), U.S. meteorologist, aeronaut.
**Carrington, William John** (Feb. 4, 1884–July 24), U.S. Kiwanis executive.

**Cather, Willa Sibert** (Dec. 7, 1876–April 24), U.S. author, was born at Winchester, Va. For her early career, see *Encyclopædia Britannica.* Miss Cather was pre-eminently famous for her early novels, including *O Pioneers!* (1913), *My Antonia* (1918), *A Lost Lady* (1923) and *Death Comes for the Archbishop* (1927). Among her later works are *Lucy Gayheart* (1935) and *Not Under Forty* (1936), a collection of essays. Her last published novel was *Sapphira and the Slave Girl* (1940). In her later years, Miss Cather avoided publicity and rarely appeared in public. In 1944, she received the gold medal of the National Institute of Arts and Letters for the high quality of her works.

She died at her home in New York city, N.Y.

**Catt, Carrie Chapman** (Jan. 9, 1859–March 9), U.S. suffragist leader, was born at Ripon, Wis. For her early career, see *Encyclopædia Britannica.* Militant champion of women's rights, Mrs. Catt was in the forefront of the suffragist leaders who brought about passage of the 19th (woman-suffrage) amendment. After ratification of the act in 1920, she devoted her considerable forensic and organizational talents to the cause of world peace; as head of the National Committee on the Cause and Cure for War, she agitated for disarmament and urged the United States to join the League of Nations. The outbreak of World War II led to the committee's dissolution and its replacement by the Women's Action Committee for Victory and a Lasting Peace, of which Mrs. Catt was made honorary chairman. She received numerous awards and medals for her services to women and for her crusading efforts in behalf of racial tolerance and international understanding. Mrs. Catt died in New Rochelle, N.Y.

**Chadwick, Hector Munro** (?–Jan. 2), British philologist.
**Chadwick, Roy** (1894–Aug. 23), British aircraft designer.
**Chambliss, Alexander Wiles** (Sept. 10, 1864–Sept. 30), U.S. jurist.

**Champetier de Ribes, Auguste** (1882–March 6), French lawyer and politician, played a not inconsiderable role in the political life of France's Third republic. A lawyer by profession, he was first elected a member of the French chamber of deputies (lower house) in 1924. He joined the political group known as *démocrates populaires* who, although steeped in Catholic tradition, represented in their social views the extreme left of the Conservative right. He moved to the senate (upper house) in 1934 where he led his group, and he held office in several governments, as minister of pensions and under-secretary for foreign affairs, the latter in Paul Reynaud's cabinet of 1940. In that cabinet, the last of the Third republic, he opposed the capitulation of June 1940. As an opponent of the Vichy regime that followed, he was arrested by the Germans in 1942, but escaped from prison and joined the French underground movement in the Pyrenean district which he had represented in the chamber. In the political regrouping which followed the liberation of French territory in 1944, he became a leading member of the new Catholic left, the *mouvement républicain populaire* (M.R.P.). He was France's chief prosecutor at the Nuernberg war crime trials until his election to the presidency of the Council of the French Republic, the new upper house under the French constitution of 1946. He held this office until his death in Paris.

**Chandler, Frank Wadleigh** (June 16, 1873–June 13), U.S. educator.
**Chase, Frederick Starkweather** (July 2, 1862–Dec. 5), U.S. industrialist.

**Chase, Harold (Hal)** (Feb. 13, 1883–May 18), U.S. baseball player, was born at Los Gatos, Calif. Starting his diamond career with Pacific coast teams, he went to the big leagues in 1905 as a first baseman for the New York Yankees in the American league. In late 1910 he managed the Yankees, but in 1913 he was traded to the Chicago White Sox.

Chase jumped the American league to play with Buffalo in the newly-formed Federal league during 1914 and 1915, but in the following year he was back in the major leagues as a member of the Cincinnati National league club. During his last year in big league baseball (1919) he played with the New York Giants.

Both a good fielder and batter, Chase was regarded by many as one of the best first basemen in baseball history.

While with the New York Giants in 1919, Chase was mysteriously dropped from the club. It was recalled that earlier that year he had been absolved temporarily of charges made by Christy Mathewson of the Reds that there were "irregularities" in his play with the Cincinnati team during the '17 and '18 seasons.

Arrested in 1921 in connection with the scandal involving the Chicago White Sox baseball team, he was subsequently cleared, although no m league team would hire him thereafter. He closed his career playing managing small teams in the Arizona state league.

He died at Colusa, Calif.

**Cheyney, Edward Potts** (Jan. 17, 1861–Feb. 1), U.S. educator.
**Chidester, Floyd Earle** (Oct. 13, 1884–June 19), U.S. biologist, author.
**Chilston Aretas Akers-Douglas,** 2nd Viscount, of Boughton Malhe (Feb. 17, 1876–July 25), British diplomat.

**Christian X** (1870–April 20), king of Denmark, of whom a biographical count will be found in the *Encyclopædia Britannica,* was the son of K Frederik VIII. His childhood was spent about the happy court of his gra father, Christian IX, where there was a steady flow of visitors from Europe. His father had three sisters, one who married Edward VII England, the second who married Alexander II of Russia, and the t who married the Duke of Cumberland. An uncle became King Georg of Greece, and a brother King Haakon VII of Norway.

Christian became crown prince in 1906 on the death of his grandfat and king in 1912 on the death of his father. During his reign the Da West Indies were sold to the U.S., much to his sorrow. Still more deeply he regret the separation of Iceland, but he recognized the Icelanders' r to decide for themselves. On the more pleasant side, he saw northern Sle united with Denmark after the plebiscite of 1920. But the most import events of his reign were the two world wars. In 1914 and the years wh followed he steered Denmark on a neutral course; in the years follow 1939 he was forced to see Denmark occupied by German troops and himse prisoner in his own land (after 1943).

The stanch and beloved king was a man of complete integrity and gr courage, and was a steadying and powerful influence in the country. people respected him fully, loved to watch their 6 ft. 5 in. sovereign ride horse early in the morning through the streets of Copenhagen, and expres their deep partriotism in homage to the king. During his reign the incipi republican spirit died out, for here stood a monarch more democratic t many a president or premier.

Christian X had a heart attack on Easter Sunday and died two we later, at the age of 76. He was buried at Roskilde cathedral.

**Churchill, Winston** (Nov. 10, 1871–March 12), U.S. novelist, was born in Louis, Mo. For his early career see *Encyclopædia Britannica.* It was until publication in 1899 of *Richard Carvel,* an historical novel, that Churc attained fame; this work was said to have sold in excess of 1,000,000 cop It was followed in 1901 by *The Crisis,* the heroine of which is a descend of Richard Carvel, the hero of the former volume. In 1917 Churchill g up his career because he "got tired of writing novels," lived in virtual se sion on his New Hampshire estate and did not produce another book u 1941 when *The Uncharted Way,* a psychological analysis of Christianity, w published.

Churchill was not related to Winston Churchill, the British statesm but was frequently mistaken for him. It was said that early in their care the two Churchills came to a *modus vivendi* to avoid further confusion. T Britisher, who was three years younger, bowed to his U.S. namesake's s iority and agreed to insert the initial "S" between his two names.

Winston Churchill, the American, died in Winter Park, Fla.

**Clark, Calvin Montague** (Jan. 30, 1862–March 1), U.S. theologian.
**Clark, Hubert Lyman** (Jan. 9, 1870–July 31), U.S. zoologist.
**Clarke, Sir Basil** (1879–Dec. 12), British journalist.
**Clayton, Sir Hugh Byard** (1877–Sept. 27), British colonial official.
**Cleary, Michael Joseph** (Sept. 23, 1876–Feb. 22), U.S. insurance executive
**Clementi, Sir Cecil** (Sept. 1, 1875–April 5), British colonial governor.
**Clopton, Malvern Bryan** (Oct. 8, 1875–April 21), U.S. surgeon.
**Cobbett, Louis** (1862–March 10), British pathologist, bacteriologist.
**Cochran, John Joseph** (Aug. 11, 1880–March 6), U.S. politician.

**Cohen, Morris Raphael** (July 25, 1880–Jan. 28), U.S. educator and philo pher, was born at Minsk, Russia. When he was 12 years old, his pare migrated to the United States and settled in New York city. There he tended public schools, receiving his B.S. degree from City college in 19 Six years later, he took his Ph.D. degree at Harvard university. In 1902 joined the staff of City college as mathematics teacher, becoming profes of philosophy in 1912.

His classes were considered among the most popular on the campus a his lectures an "intellectual adventure," as attested by the numerous quests of students to "sit in." He retired in 1938 as professor emeritus a joined the faculty of the University of Chicago as professor of philosop leaving the latter institution in 1942 to devote his remaining years to writi He was the author of *Reason and Nature* (1931), *Law and the Social Or* (1933), *Preface to Logic* (1944) and *Faith of a Liberal* (1945). He was author of *An Introduction to Logic and the Scientific Method* (1934) and *The Cambridge History of American Literature,* vol. 3 (1922); he also was t editor of the *Modern Legal Philosophy Series* and the *Jewish Social Stud* At the time of his death five of his books were in the process of publicati They included: *The Meaning of Human History, A Dreamer's Journey* (au biography), *Juristic Studies, Studies in Philosophy and Science* and *Reflecti of a Wondering Jew*; a sixth book, *A Source Book in Greek Science,* was writ in collaboration with I. E. Drabkin. Dr. Cohen died in Washington, D.

**Colcord, Lincoln Ross** (Aug. 14, 1883–Nov. 16), U.S. author.
**Coleman, Frederick W. B.** (May 17, 1874–April 2), U.S. diplomatist.
**Collins, Sir William Henry** (1873?–Nov. 30), British industrialist.
**Colonna, Prince Marcantonio** (July 25, 1881–March 9), Italian member pontifical court.

**Cook, Sir Joseph** (1860–July 30), Australian statesman, was born at Silverda Staffordshire, England, and worked in a coal mine at the age of nine. In 1 he emigrated to New South Wales where he became secretary of the Mine association. He helped to create the Labour party in New South Wales a entered the state legislative assembly in 1891, but later joined the free tr party. In 1894 he became postmaster general and later held the portfolio mines and agriculture. He entered federal politics, when in 1901 he w elected for Parramatta, and succeeded to the leadership of the Free Tr party. In 1909 he was minister of defense. Cook, as leader of the Libe party, returned to office in 1913 as prime minister, but resigned in 1914. was sworn of the privy council in 1914 and served during World War I aister for the navy and later as treasurer. In 1918 he went to England as nember of the imperial war cabinet and was appointed a Knight Grand oss of St. Michael and St. George. He attended the peace conference in rsailles in 1919. He returned to London in 1921, where until 1927, he was h commissioner. In 1922 he was senior Australian delegate to the third embly of the League of Nations and Australian delegate to the Genoa ference. (*See* also *Encyclopædia Britannica.*)

**dge, Marcus Allen** (Oct. 6, 1865–Jan. 23), U.S. politician.
**araswamy, Ananda Kentish** (April 22, 1877–Sept. 9), Ceylon-born art ert, author.
**ey, Ira Clifton** (Oct. 25, 1864–Nov. 2) U.S. publisher.
**si, Filippo** (Aug. 8, 1876–Feb. 1), Italian papal envoy.
**si, Salvatore** (April 24, 1864–March 3), Italian journalist.
**rave, John O'Hara** (July 11, 1864–Sept. 19), U.S. journalist.
**on, George Gordon** (Oct. 15, 1858–March 4), British historian.

**tauld, Samuel** (1876–Dec. 1), British business man and patron of arts, s educated at Rugby school. He then began his connection with the fam- silk-weaving business, and after training at Krefeld, Ger., he soon became nager of the company's dyeing and finishing factory at Bocking, Essex. 1904 the business was registered as a public company, and two years later gan manufacturing rayon yarn by the viscose process. By 1915 he was cted to the board, and in the following year a joint managing director. the death of H. G. Tetley in 1921 he became chairman of the company, ich had by then become one of the largest textile concerns in the United ngdom producing silk and rayon yarns.

At his home in Portman square, London, he built up a notable art collec- n, and on his wife's death in 1931 he transferred the house to the Univer- y of London as the Courtauld institute.

In 1923 he gave £50,000 for the purchase of paintings, and the Tate llery was enriched by this gift with paintings by P. A. Renoir, H. G. E. gas, V. van Gogh, P. Cézanne and A. Sisley. He was a trustee of the Tate llery, 1927–34 and 1935–37; at the time of his death in London he was a istee of the National gallery.

**Theodore Sullivan** (Aug. 17, 1894–May 10), U. S. educator.
**tree, Ernest Granville** (Nov. 23, 1883–May 30), U.S. surgeon, urologist.
**e, Frederick Evan** (March 2, 1869–Nov. 21), U.S. jurist.
**ston, Claudia** (?–June 26), U.S. author, editor.
**t, Henry Page Croft,** 1ST BARON (June 22, 1881–Dec. 7), British politician.
**by, Franklin Muzzy** (Jan. 16, 1875–June 29), U.S. industrialist.
**ninshield, Frank** (FRANCIS WELCH) (June 24, 1872–Dec. 28), U.S. editor.
**ther, Samuel** (1880?–Oct. 27), U.S. writer.
**hy, Joseph Michael** (Sept. 12, 1878–Oct. 25), U.S. meat packing execu- e.
**iffe-Owen, Sir Hugo** (Aug. 16, 1870–Dec. 14), British industrialist.
**ey, Michael Joseph** (Oct. 12, 1879–May 16), U.S. Catholic archbishop.
**ick, Max Cohen** (Sept. 1, 1877–May 23), U.S. religious leader.
**ing, Harold Beveridge** (April 6, 1873–Oct. 31), Canadian pediatrician.

**er, Elliott Carr** (July 30, 1888–Aug. 16), U.S. surgeon, was born in Bangor, e., and received his medical degree from Harvard university in 1913. uring World War I Dr. Cutler was head of the first Harvard medical unit Paris and by the end of that conflict he held the rank of a major and was charge of a base hospital.

Returning to civilian life in 1919, Dr. Cutler became an instructor in sur- ry at the Harvard Medical school and resident surgeon of the Peter Bent righam hospital. He left Harvard in 1924 to become professor of surgery at estern Reserve Medical school, Cleveland, O., and director of surgery at leveland's Lakeside hospital. In 1932 he succeeded Dr. Harvey Cushing as oseley professor of surgery at Harvard and chief surgeon at the Peter Bent righam hospital.

Credited with many innovations in surgery, Dr. Cutler in 1923 performed hat was said to be the first successful operation on the valves of the human eart.

Dr. Cutler served in World War II, attaining the rank of brigadier gen- al, and was chief consultant in surgery and later chief of professional serv- es, office of the chief surgeon, in the European theatre of operations. In 945 he was appointed consultant to the Veterans' administration. In 1939 r. Cutler and Dr. Robert Zollinger published an *Atlas of Surgical Opera- ons*, a surgery manual.

He died at his home in Brookline, Mass.

**ney, Richard Heath** (March 29, 1860–May 16), U.S. educator.
**ty, Ernest** (1891?–Oct. 30), Canadian organist.
**on, Alexander Martin** (July 28, 1874–Nov. 26), U.S. Salvation Army ficer.
**ewski, Herman** (1883?–June 2), Russian-born composer.
**k, Sidney** (1874–Oct. 11), British author, journalist.
**is, Harry** (1873?–Aug. 11), U.S. baseball player.
**is, Jackson** (Sept. 25, 1882–April 15), U.S. educator.
**is, James John** (Oct. 27, 1873–Nov. 22), U.S. politician.
**and, Clyde Osmer** (Dec. 27, 1872–March 27), U.S. artist.

**nett, Mary Ware** (April 4, 1872–July 25), U.S. suffragist and writer, was orn in Worcester, Mass. Educated at the School of Applied Design of the oston Museum of Fine Arts, she became a general designer. Mrs. Dennett rtually abandoned her career as an artist in the early 1900s to join the ffragist movement, becoming secretary of the National Suffrage associa- on in New York from 1910 to 1915 and acting president of the Twilight eep association, 1913–14.

She also crusaded for free and unfettered dissemination of sex information d birth control literature and was one of the three founders of the National irth Control league. In 1916 she took an active role in peace movements, anaged "anti-preparedness" mass meetings in the midwest and served with omen's groups campaigning to re-elect Pres. Woodrow Wilson for a second rm.

Her propagandizing in behalf of birth control brought Mrs. Dennett into e national spotlight in 1925 when she was convicted and fined $300 for ving sent through the mails an educational pamphlet on sex, which she ad written for the guidance of her two sons. The case aroused widespread interest after Mrs. Dennett announced that she would rather go to jail than pay the fine. The conviction was reversed in 1930 by a circuit court of appeals.

In her later years Mrs. Dennett helped found the World Federalists in 1941, serving as chairman of the organization until 1944 when failing health compelled her to resign.

She died at Valatie, N.Y.

**Deverell, Sir Cyril John** (Nov. 9, 1874–May 12), British army officer.
**De Vore, Harry S.** (July 27, 1891–Oct. 14), U.S. educator, churchman.
**Dewar, Peter Menzies** (1871?–June 3), British whiskey distiller.
**Diaz, Salvador Bueitrago** (1883?–April 5), Nicaraguan politician.
**Digges, Dudley** (1879?–Oct. 24), U.S. actor.
**Ditzen, Rudolf** (HANS FALLADA) (July 21, 1893–Feb. 6), German novelist.
**Dodd, Charles J.** (1873?–July 24), U.S. jurist.
**Drake, Joseph Horace, Sr.** (May 18, 1860–Aug. 4), U.S. educator.
**Drane, Herbert Jackson** (June 20, 1863–Aug. 11), U.S. congressman.
**Ducane, Sir John (Philip)** (May 5, 1865–April 5), British army officer, colonial official.
**Dunbar, Seymour** (Oct. 9, 1866–April 18), U.S. historian.
**Duncan, Luther Noble** (Oct. 14, 1875–July 26), U.S. educator.
**Dunnells, Clifford George** (July 8, 1875–April 15), U.S. educator, civil engineer.
**Dupree, Minnie** (Jan. 19, 1875–May 23), U.S. actress.

**Durant, William Crapo** (Dec. 8, 1861–March 18), U.S. industrialist and financier, was born in Boston, Mass. His family moved to Flint, Mich., where he attended school until he was 17 years old, later working as a grocery clerk, millhand, patent medicine salesman and real estate agent. Durant and J. Dallas Dort, a hardware clerk, joined forces in 1886 and borrowing $2,000 from friends, they secured control of a wagon works. The Durant-Dort carriage company met with astounding success, producing as many as 150,000 buggies in a peak year.

In 1904 Durant went into the motor car business. Obtaining control of a tottering plant that produced only 28 cars yearly, he got the patent rights to the Buick automobile, capitalized the Buick Motor Car Co. in 1905 for $10,000,000 and reaped a fortune.

Three years later (1908), Durant purchased the Cadillac, Oakland, Oldsmobile and Northway motor car companies and together with the Buick company formed the General Motors Co. At the time, the giant merger was derided as "Durant's folly," but in the second year of operation it showed a profit of $10,500,000.

Ousted from controlling position in the company in 1910, he regained it with the help of the Du Ponts in 1915 and added Chevrolet (which he had organized earlier) to General Motors but finally lost control of the combine after the 1920 postwar depression.

In 1921 he re-entered the automotive field with a new enterprise, the Durant Motors, Inc. When he retired in 1926 from the motor car business, he had amassed a new fortune estimated at $20,000,000. But he lost all of it in the Wall street crash of 1929 and in the ensuing depression years. He later became a real estate broker in Newark, N.J., owner of a bowling alley in Flint, and was fairly well-to-do at the time of his death in New York city.

**Du Shane, Donald** (June 5, 1885–March 10,) U.S. educator.
**Dutton, Emily Helen** (Sept. 29, 1869–June 18), U.S. educator.

**Edison, Mina** (MRS. THOMAS ALVA EDISON) (July 6, 1865–Aug. 24), second wife, and widow, of U.S. inventor Thomas Alva Edison, was born in Akron, O., and attended schools in her native city and in Boston. She married Edison on Feb. 24, 1886.

Distinguished in her own right, Mrs. Edison was a daughter of Lewis Miller, co-founder of the Chautauqua institution, of which she was a trustee and active member for more than a score of years. She was also a leader of the U.S. temperance movement, and stumped for Herbert Hoover during the latter's first presidential campaign in 1927.

Mrs. Edison occasionally stirred up heated controversy with her outspoken opinions on contemporary issues. A case in point was a broadcast in 1930 in which she declared that U.S. women ought to return to their "homemaking" and quit trying to be career women, a statement that roused considerable indignation among U.S. feminists.

Four years after the death of her inventor husband, she married (in 1935), Edward Everett Hughes, a retired steel executive and one of her childhood friends. In 1940 she was widowed again and resumed the name of her first husband.

She died in New York city, N.Y.

**Eigenmann, Rosa Smith** (1858?–Jan. 12), U.S. ichthyologist.
**Elkus, Abram I.** (Aug. 6, 1867–Oct. 15), U.S. diplomat, lawyer.
**Elliott, Harriet Wiesman** (July 10, 1884–Aug. 6), U.S. educator and government official.
**Ellis, Edgar Clarence** (Oct. 2, 1854–March 15), U.S. lawyer, politician.
**Elsa, Princess of Liechtenstein** (Jan. 6, 1875–Sept. 28), widow of Prince Franz I.
**Emerson, Rollins Adams** (May 5, 1873–Dec. 8), U.S. geneticist.
**Emmett, Arthur Donaldson** (Dec. 19, 1878–June 11), U.S. scientist, vitamin authority.
**Engel, Edward J.** (July 28, 1874–March 30), U.S. railway president.
**Ennis, William Duane** (Jan. 6, 1877–Oct. 14), U.S. educator, engineer.
**Epp, Franz Xaver Ritter von** (Oct. 10, 1868–Feb. 7), German politician, army officer.
**Estrada, Juan M.** (1871?–July 11), Nicaraguan politician.

**Eugen, Prince** (Aug. 1, 1865–Aug. 17), Swedish prince and duke of Närke, son of King Oscar II and Queen Sophia, and younger brother of King Gustavus V of Sweden, was born at the chateau of Drottningholm. He studied at Uppsala university and entered the army as a commissioned officer but, showing little taste for either a military career or life in the royal court, he left Stockholm to study painting in Paris.

In the French capital, Prince Eugen specialized in landscapes and soon came to be regarded as a competent painter. He rarely sold his canvasses and generally donated them to museums, schools, or friends.

More famous than his own work was his private collection of art works housed in his estate at Valdemarsudde, Sweden, where he died.

**Evans, Curtis Alban** (April 20, 1879–May 3), U.S. surgeon, educator.

**Evans, Sir Thomas John Carey** (1884–Aug. 25), British surgeon.

**Evers, John J. ("Johnny")** (July 23, 1881–March 28), U.S. baseball player, was born in Troy, N.Y. He started his professional baseball career with the Troy minor league team and joined the Chicago Cubs of the National league in 1902 as a second baseman. Small, wiry, and weighing hardly more than 90 lb., Evers was not an impressive batter. But what he lacked in hitting power, he more than made up in fielding ability and baseball guile.

A member of the celebrated "Tinker-to-Evers-to-Chance" infield combination of the Chicago team, Evers was in large measure responsible for depriving the New York Giants of the championship in the celebrated Cub-Giant game on which the pennant depended, at the end of the 1908 season. On that occasion the alert Evers noticed that Fred Merkle, Giant first baseman, had forgotten to tag second base. Calling frantically for the ball, Evers tagged the base, which made Merkle automatically out. Merkle's "boner" necessitated a replay of the game, which the Cubs won.

At the peak of his career, Evers brought up his weight to about 130 lb. While still unable to hit the ball with much power, he proved an able place hitter and a daring base runner. He played with the Cubs from 1902 to 1914, with the Boston Braves between 1914 and 1917 and wound up his active playing days with the Philadelphia National league team in 1917. Thereafter, he served as coach with several teams, managed the Chicago White Sox in 1923 and was assistant manager of the Boston Braves in 1929. Subsequently he was associated with the Albany minor league team and operated a sporting goods store. He died in Albany, N.Y.

**Fairburn, William Armstrong** (Oct. 12, 1876–Oct. 1), U.S. inventor, industrialist.
**Fairlie, John Archibald** (Oct. 30, 1872–Jan. 23), U.S. educator.
**Farnsworth, Charles Hubert** (Nov. 29, 1859–May 22), U.S. speech and music educator.
**Farthing, John Cragg** (Dec. 13, 1861–May 6), Canadian Anglican cleric.
**Fay, William George** (Nov. 12, 1872–Oct. 27), Irish actor, producer.
**Fedorenko, Yakov Nikolayevich** (1896–March 27?), soviet army officer.
**Feldman, Herman** (March 20, 1894–Oct. 16), U.S. educator.
**Ferris, David Lincoln** (Dec. 31, 1864–June 9), U.S. Episcopal bishop.
**Ffoulkes, Charles John** (June 26, 1868–April 22), British armour and heraldic expert.
**Finletter, Thomas Dickson** (Oct. 20, 1862–Feb. 4), U.S. jurist.
**Fish, Walter George** (June 3, 1874–Dec. 21), British newspaper editor.
**Fisher, Edwin** (1883–Jan. 27), British banker.

**Fisher, Irving** (Feb. 27, 1867–April 29), U.S. political economist, was born at Saugerties, N.Y. For his early career, see *Encyclopædia Britannica*. Dr. Fisher, who taught at Yale university for more than 45 years, retired as emeritus professor of political economy in 1935.

Champion of the 100% money system, Dr. Fisher campaigned to standardize the dollar and to require banks to maintain an actual money reserve of 100% for all funds liable to transfer by check, the assumption being that the chief inflations and deflations were of check-book money.

Commenting on economic problems that arose after the close of World War II, Dr. Fisher on his 80th birthday derided as "naive" the assumption that the inflationary trends of early 1947 resulted solely from the "vicious spiral" of wages and prices inflated by organized labour, and warned against repeating the error of 1920 when a deflation was employed to liquidate an inflation. Dr. Fisher died in New York city.

**Fitzalan of Derwent, Edmund Bernard Fitzalan-Howard,** 1st Viscount (June 1, 1855–May 18), British peer, third son of Henry Granville, earl of Arundel, who succeeded as 14th duke of Norfolk in 1856. He was educated at the Oratory school, Edgbaston, where he came under the influence of Cardinal Newman; in later years he was regarded as the leading and representative Roman Catholic layman in England. In 1875 he received a commission in the 11th Hussars, and in the following year took the name and arms of Talbot in compliance with the will of the 17th earl of Shrewsbury, who had made him heir of his estates in 1856. He was known as Lord Edmund Talbot for the greater part of his life; in 1921 he was raised to the peerage as Viscount Fitzalan of Derwent and reverted to his real surname of Fitzalan-Howard.

In 1894 he entered parliament as a Unionist member for Chichester, a seat which he held until he was raised to the peerage. His influence in the house grew during the years after 1906, when the Unionist party was in opposition, and in 1913 he became Unionist chief whip. In 1921 he was appointed viceroy of Ireland under the act of 1920, and held office while the Irish Free state was set up in the same year. He died at Windsor, England.

**Fitzgerald, Desmond** (1890?–April 9), Eire government official.
**Fitzgerald, Walter James** (Nov. 17, 1883–July 19), Alaskan clergyman, educator.
**Fitzgerald, William Joseph** (March 2, 1887–May 6), U.S. congressman.
**Flagg, Ernest** (Feb. 6, 1857–April 10), U.S. architect.
**Flett, Sir John Smith** (1869–Jan. 28), British geologist.

**Forbes, George William** (March 12, 1869–May 18), New Zealand statesman, was born at Lyttelton, New Zealand, and educated at the Boy's High school, Christchurch, N.Z. He entered active politics in 1908, when he was elected to the New Zealand parliament. In 1912 he became the Liberal party's chief whip. When the party declined, he became in 1925 leader of the National party. The new party and other Liberals merged in 1928 into the United party which carried the elections, Forbes becoming minister of lands and agriculture. In 1930, he became leader of the United party, in succession to Sir Joseph Ward whom, a little later, he succeeded as prime minister and minister of external affairs. Forbes attended the Imperial conference in London in 1930 and pleaded for increased empire trade and reinforced empire preferences. He also represented his country at the World Economic conference in London in 1932 and, again, at King George V's silver jubilee in 1935. His party relinquished power in the same year and Forbes led it in opposition until 1936. In that year he handed over the leadership of the party, though he continued to sit in parliament until 1943.

**Ford, Henry** (July 30, 1863–April 7), U.S. motor car manufacturer, was born on a farm near Dearborn, Mich. For his early career, see *Encyclopædia Britannica*. He started the Ford Motor Co., which in the 1920s grew to become one of the great industrial empires of the era. At the peak of his career, Ford was believed to have been worth $2,000,000,000.

The depression that followed the Wall street crash of 1929 made th deep inroads into the Ford fortune, and in one depression year it wa mated that he had lost about $68,000,000. The Ford interests also considerable sum in attempting to stave off the Detroit banking cr Feb. 1933 although the amount was never publicly divulged.

An ardent foe of the New Deal and organized labour, Ford fought attempts to organize his plants. However, after the United Auto Workers (C.I.O.) secured 70% of the votes in an election held National Labor Relations board auspices in June 1941, Ford signed con with the union and acquiesced to the majority of its demands.

Ford, who had retired as active head of the Ford Motor Co. in leaving his son, Edsel, in the presidency, resumed active manageme 1943 after the latter's death. In late 1945 he retired anew, handing ov controls of the company to his grandson, Henry Ford II. Henry Ford died in his home at Dearborn, Mich.

**Forster-Cooper, Clive** (April 3, 1880–Aug. 23), British zoologist.
**Forteviot, John Dewar,** 2nd Baron (March 17, 1885–Oct. 24), British i trialist.
**France, Wesley George** (June 19, 1892–Dec. 4), U.S. research chemist.

**Frazier, Lynn Joseph** (Dec. 21, 1874–Jan. 11), U.S. politician, was bo Steele county, Minn., the son of a midwestern farmer. He attende University of North Dakota, Grand Forks, N.D., from 1897 to 1901.

In 1916 he ran for governor of North Dakota on the Republican ti support of the Non-Partisan league gave him victory and he was re-el in 1918 and 1920, but a coalition of Republicans and Democrats def him on his try for a fourth term in 1921.

The following year (1922), he was elected to the U.S. senate, again the aid of the Non-Partisan league, and he was re-elected in 1928 and After his first year in the upper house, the Republicans alleged Frazier had repudiated their policy and read him out of the party.

During his 18-year tenure in the senate, Frazier was regarded a farmer's champion and helped introduce the various Frazier-Lemke dealing with farm mortgages. While the first of the measures was dec unconstitutional by the supreme court in 1935, the second was uphel third was defeated in congress on grounds that it would lead to inflati

Frazier also gained notice for his ardent support of the prohibition am ment and the cash bonus for veterans of World War I. In foreign poli was a confirmed noninterventionist and before the outbreak of World II, he proposed a constitutional amendment that would bar the U.S. participating in armed conflicts.

He lost his bid for a fourth senate term in 1940. He died after a lo ness, at a hospital in Riverdale, Md.

**Frolich, Finn Haakon** (Aug. 13, 1868–Sept. 5), U.S. sculptor, artist.
**Funck-Brentano, Frantz** (July 15, 1862–June 13), French historian.

**Fyffe, Will** (1885–Dec. 14), Scottish comedian, was born in Dundee, Scot The preparation for his career as one of the most popular character c dians of British stage and screen began when, at the age of seven, he a in a stock company started by his father. Later, as a young man, he to with other companies, always acting "straight" parts. He made his d as a comedian in a touring revue; his character sketches became so po that in 1921 he scored an immediate success at the London Pavilion and given a place in the next Royal Variety performance. From that tim ward his popularity was ensured. He added to it in the 1930s by appear serious screen parts; the most successful was that of the Scottish shephe *Owd Bob*, in which he showed the strong acting ability that underla music-hall achievements. His services in the entertainment of the troo World War II were rewarded by his being appointed a C.B.E. (Comma Order of the British Empire). He died in St. Andrews hospital after an dent.

**Gaffney John Jerome** (March 5, 1891–Nov. 21), U.S. naval officer.
**Gardner, Oliver Max** (March 22, 1882–Feb. 6), U.S. politician, govern official.

**Garvin, James Louis** (1868–Jan. 23), British journalist and editor, wa 35 years the influential editor of the London Sunday paper *Observer*. D his early youth in Cheshire, his mother who intended him for a career i civil service, succeeded, at the cost of much sacrifice, in providing him courses in science and the languages. Garvin began to earn a living in ness as bookkeeper and foreign correspondent clerk. He had mast French and Spanish, to which two languages he later added German. entered journalism at the age of 17 with a letter he sent to the editor o *Eastern Morning News* at Hull. The paper printed it as a special si article, and other contributions followed. At the age of 23, he became p reader of the *Newcastle Chronicle* and later a member of that paper's edit staff. But not before he started, in 1900, to contribute regular article *The Fortnightly Review*, the London Liberal monthly, did his writings r wider circles. Many of these articles were devoted to foreign affairs published under various pseudonyms of which "Calchas" became known. After an introduction to the proprietor of the London *Daily graph*, he became leader writer on that paper. For a short time, he ed *The Outlook*, a weekly paper of some influence, but of insecure finances. great opportunity came in 1908 when Lord Northcliffe, who had bought Sunday paper *Observer* in 1905, but failed to make a success of it, took into partnership and made him editor. Garvin turned it into one of the influential and one of the most successful British Sunday papers. Until despite a change of ownership in 1915, Garvin's long leaders were of siderable importance both in reflecting opinion held in circles close to government of the day, and, conversely, in shaping that opinion. W Garvin left the *Observer* in 1942, for a time he transferred his leader to *Sunday Express*, but finally returned to the *Daily Telegraph* with a wee article on world affairs.

Garvin's activities were not, however, confined to editing the *Obse* From 1926 to 1932, he was, with Franklin Hooper of New York, j editor of the 14th edition of *Encyclopædia Britannica*. He also wrote a b on British empire problems under the title *Economic Foundation of Empire* (1914) and a *Life of Joseph Chamberlain* in four volumes, of wh three had appeared at the time of his death.

**Geiger, Roy Stanley** (Jan. 25, 1885–Jan. 23), U.S. marine corps officer, rn in Middleburg, Fla. He studied law at Stetson university, DeLand, a., graduating in 1907, but instead of taking up a legal career, he enlisted the marine corps. Commissioned as a 2nd lieutenant in 1909, he served in ba, Panamá, the Philippines, China, Haiti and Nicaragua. Geiger took up ght training and was the 5th marine officer to win his wings. He commanded squadron in the 1st marine aviation group in France during World War I d was awarded the navy cross. Later, he served as director of marine iation (1931–35) and in the autumn of 1941, he was commanding general the 1st marine air wing.

In World War II Geiger held many important commands in the Pacific eatre. At Guadalcanal (1942), he organized and led the 1st marine air ng and had over-all command of aviation units of the combined services. e was awarded the gold star for his distinguished service in that campaign. ter, he was recalled to Washington to take up his former post as head of arine aviation. Returning to active duty in Nov. 1943, Geiger participated the amphibious operations during the battle for Bougainville, succeeding . Gen. Alexander A. Vandegrift as commander of army and marine rces in that area. In the summer of 1944 he commanded the expeditionary rce that reconquered Guam and the following April, headed marine corps visions in the Okinawa landings. Promoted to the rank of lieutenant neral in June 1945, Geiger was made commander of the Pacific fleet marine rce later that month (June 22, 1945). His last assignment was as com- ander of the fleet marine force. General Geiger, who was expecting to re- e Feb. 1, 1947, died at Bethesda, Md.

**rge II** (July 20, 1890–April 1), king of the Hellenes, was born at Tatoi ar Athens, the eldest son of King Constantine, and succeeded to the rone for the first time in 1922. Deposed on March 25, 1924, after a series uprisings, he spent the next 11 years in exile until his recall by the Greek sembly in 1935. For his biography, see *Encyclopædia Britannica*. On t. 28, 1940, the day that Italy began the invasion of Greece, George as- med command of the army. On April 23, 1941, when nazi troops approach- Athens, George fled with his government to Crete. A month later he left r Cairo, and finally reached London, via South Africa, on Sept. 22, 1941, here he established his government-in-exile. With the approach of Ger- any's defeat, the resistance movement in Greece showed itself opposed to eorge's unconditional return to the throne, and in Dec. 1944 he consented the appointment of Archbishop Damaskinos as regent. A plebiscite was ld in Sept. 1946 which resulted in a majority in favour of his return, and the end of September he resumed his reign for the third time. He died ddenly in Athens and was succeeded by his brother Paul.

**lach, Charles L.** (Sept. 14, 1895–May 5), U.S. congressman.

**son, Sir John Watson** (Aug. 9, 1885–March 19), British civil engineer.

**ord, Charles L.** (March 15, 1871–Aug. 23), U.S. congressman.

**ert, Samuel T.** (Aug. 29, 1881–March 4), U.S. business executive.

**. Mac Donald** (1884–Jan. 14), British artist, architect, cartographer.

**espie, William** (Nov. 3, 1870–Sept. 13), U.S. mathematician.

**ser, Rudolph W.** (1888?–Sept. 4), U.S. zoologist.

**ichen, Lady Helena** (1873?–Jan. 28), British painter, sculptor.

**ver, Robert Hall** (Oct. 17, 1871–March 23), U.S. clergyman.

**dschmidt, Victor Moritz** (1888–March 20), Norwegian mineralogist.

**nberg, Moses** (Feb. 8, 1866–Feb. 12), U.S. chemist.

**dland, Walter Samuel** (Dec. 22, 1863–March 12), U.S. editor, publisher d politician, was born at Sharon, Wis. A student at Lawrence college, ppleton, Wis., he later taught in district schools and studied law in his are time. He was admitted to the Wisconsin bar in 1885 and set up practice Wakefield, Mich. But two years later, he decided upon a venture in the wspaper business and founded the *Wakefield Bulletin*. In succeeding ears, he was associated with a number of small-town Wisconsin newspapers owner, publisher or editor.

During his lifetime, Goodland was active in Republican politics. He was ayor of Racine, Wis., 1911–15; a delegate to several national conventions; ember of the state senate, 1926–30, 1930–34 and was elected lieutenant vernor for the 1938, 1940 and 1942 terms.

Upon the death of Governor-elect Orland Loomis, Goodland became act- g governor of Wisconsin on Jan. 3, 1943, and was elected governor for the 945–47 term. His tenure was marked by a program of strict economy, and e also gave his support for greater aid to the state's welfare and educational stitutions. He died at Madison, Wis.

**dspeed, Charles Barnett** (Feb. 8, 1885–Feb. 23), U.S. civic leader, poli- ician.

**re, Howard Mason** (Oct. 12, 1887–June 20), U.S. politician and govern- ent official was born at Clarksburg, W.Va., and was graduated from West irginia university, Morgantown, W. Va., in 1900 with a B.A. degree. As- istant secretary of agriculture in President Calvin Coolidge's cabinet uring 1923–24, he was appointed in Nov. 1924 secretary of agriculture, hich post he held until March 4, 1945, when he was sworn in as governor f West Virginia.

Gore died in Clarksburg.

**tt, Edgar Nathaniel** (May 2, 1887–July 17), U.S. aeroplane manufacturer.

**ttlieb, Leon A.** (Nov. 15, 1878–Jan. 13), U.S. Yiddish author, journalist.

**udy, Frederic William** (March 8, 1865–May 11), U.S. type designer, was orn in Bloomington, Ill. He developed his interest in typography while orking in a Chicago bookshop and spent long hours in studying type. After everal unsuccessful ventures in printing establishments, he began designing is own type faces.

In the early 1900s, he and his wife founded their own type firm, the Village ress, in Park Ridge, Ill., a Chicago suburb. The venture was not a success nancially, and the Goudys moved east, finally locating their press in an ld mill in Marlboro, N.Y.

Devoting all of his efforts after 1913 to pure design, Goudy made the illage Press one of the most celebrated presses in the country. Its editions, xtremely limited in number, were set in types of his own design.

The outstanding artistry of Village Press issues soon established oudy as one of the great contemporary masters of type designing. He reated more than 100 type faces, many of which were ranked by experts ith the most beautiful ever moulded. Among these were *Goudy Old Style*, *Goudy 30*, *Village*, *Bertham*, *Kennerly* and *Forum*, as well as a new Hebrew type face made for the University of Palestine.

Unfortunately, the mill which housed his Marlboro plant burned to the ground in 1939 and with it were destroyed 75 or more of his original type designs.

Goudy, who received many national and international awards for his work in beautifying modern typography, wrote the following books: *The Alphabet* (1918), *Elements of Lettering* (1921), *Typologia* (1940) and an autobiography, *A Half-Century of Type-Design and Typography* (1946).

He died at his home in Marlboro, N.Y.

**Gower, Pauline Mary de Peauly** (1911?–March 2), British aviatrix.

**Grant, George Washington** (1870?–April 4), U.S. sports promoter.

**Gray, Finly H.** (July 24, 1864–May 8), U.S. congressman.

**Greene, Roger Sherman** (May 29, 1881–March 27), U.S. physician.

**Greer, Sir Harry** (Sept. 18, 1876–March 20), British M.P., industrialist.

**Greig, Sir Robert Blyth** (March 23, 1874–Nov. 29), British agricultural authority.

**Gretton, John Gretton,** 1ST BARON OF STAPLEFORD (Sept. 1, 1867–June 2), British peer.

**Grzesinki, Albert Carl Wilhelm** (1879–Dec. 31), German politician, police official.

**Gustavus Adolphus,** PRINCE OSCAR FREDERIC ARTHUR EDMOND (April 22, 1906–Jan. 26), hereditary prince of Sweden, was born in Stockholm, the eldest son of Crown Prince Gustavus Adolphus and his first wife, Princess Margaret of Connaught. A versatile athlete, the prince was a member of the Swedish Olympic equestrian team at the 1936 games in Berlin. He was an outstanding steeplechase rider and a champion fencer and was chairman of various motor and aviation as well as athletic organizations. On Oct. 20, 1932, he married Princess Sibylle of Saxe-Coburg-and-Gotha, a second cousin. (Both were descendants of Queen Victoria and Prince Albert.) Prince Gustavus Adolphus was killed in an aeroplane crash near Copenhagen. His death placed his nine-month-old son Prince Carl Gustavus, second in line of succession to the throne of Sweden.

**Hagan, James** (?     –Sept. 1), U.S. playwright.

**Hahn, Reynaldo** (Aug. 9, 1874–Jan. 27), French composer.

**Hallett, George Hervey** (Dec. 30, 1870–Aug. 12), U.S. educator, mathematician.

**Halliday, John** (Sept. 14, 1880–Oct. 17), U.S. actor.

**Hamilton, Sir Ian Standish Monteith** (Jan. 16, 1853–Oct. 12), British army officer, was born at Corfu and educated for a military career at Wellington and Sandhurst. He served with distinction with his regiment on active service in India, Africa and Burma, and in several staff appointments in India until 1898. He fought in the South African War and was later appointed chief of staff to Lord Kitchener. He returned to England having been appointed a K.C.B. and promoted to lieutenant general. He was later appointed adjutant general at the war office and in 1910 was promoted to G.C.B. On the outbreak of World War I he was given a command in England, and in 1915 was sent to command the expedition to the Dardanelles. He was recalled in Oct. 1915 and received no further command. In 1919 he received the G.C.M.G. and many foreign orders. After retiring in 1920 he became chief representative of the British legion in the metropolitan area. From 1932–35 he was lord rector of Edinburgh university. He was for many years the colonel of his old regiment, the Gordon Highlanders.

His publications included: *A Staff Officer's Scrap Book* (1906-07), *The Millennium?* (1918), *Gallipoli Diary* (1920), *When I Was a Boy* (1939), *Listening for the Drums* (1944); and in 1942 he wrote *Jean*, a memoir of his wife whom he had married in 1887. He died in London. (*See* also *Encyclopædia Britannica.*)

**Hammer, Trygve** (Sept. 6, 1878–June 28), U.S. painter, sculptor.

**Hannah, John** (Nov. 27, 1921–June 7), British aviation hero of World War II.

**Harbord, James Guthrie** (March 21, 1866–Aug. 20), U.S. army officer, was born in Bloomington, Ill. For his early career, see *Encyclopædia Britannica*. Gen. Harbord, who was Gen. John J. Pershing's chief of staff during World War I, retired from the army with the rank of lieutenant general. He was president of the Radio Corporation of America from 1923 to 1930 and chairman of the board from 1930 until his death in Rye, N.Y.

**Harcourt, George** (Oct. 11, 1868–Oct. 1), British painter.

**Harding, Arthur McCracken** (Sept. 3, 1884–Dec. 24), U.S. educator.

**Hardt, (Friedrich Wilhelm) Ernst** (May 9, 1876–Jan. 9?), German author.

**Harewood, Henry George Charles Lascelles,** 6TH EARL OF (Sept. 9, 1882–May 24), British peer.

**Harley, John Hunter** (1865–Jan. 11), British author, journalist.

**Harper, George McLean** (Dec. 31, 1863–July 14), U.S. educator, was born in Shippensburg, Pa., and was educated at Princeton university (receiving his Ph.D. degree in 1891) and at the Universities of Göttingen and Berlin.

After a brief fling at journalism in 1884 as copy reader and reporter for a New York paper and as an assistant editor on *Scribner's* magazine (1887–89), he returned to Princeton in 1889 as a French instructor. By 1895 he held the Woodhull chair in the romance languages department, and in 1900 he was appointed Holmes professor of belles-lettres and English language and literature. A quarter of a century later, he was made Woodrow Wilson professor of literature, retiring as professor emeritus in 1932. A close friend and supporter of President Wilson, Dr. Harper edited Wilson's speeches for publication in 1918.

Dr. Harper's works include: *Masters of French Literature* (1901), *The Life of Charles Augustin Sainte-Beuve* (1909), *William Wordsworth, His Life, Works and Influence* (1916), *John Morley and Other Essays* (1920), *Wordsworth's French Daughter* (1921), *Dreams and Memories* (1922), *Spirit of Delight* (1928) and *Literary Appreciations* (1937).

He died at Princeton, N.J.

**Harris, Sir (Charles) Alexander** (June 28, 1855–March 26), British colonial official.

**Harris, Paul Percy** (April 19, 1868–Jan. 27), U.S. lawyer.

**Hartog, Sir Philip Joseph** (March 2, 1864–June 27), British educator.

**Hawes, Harry Bartow** (Nov. 15, 1869–July 31), U.S. politician.

**Haynes, George Henry** (March 20, 1866–Oct. 30), U.S. educator.

**Hecht, Selig** (Feb. 8, 1892–Sept. 19), U.S. biophysicist and authority in the field of vision, was born in Glogow, Austria, and was taken to the United States in childhood. He was graduated with a B.S. degree from City college, New York City, N.Y., in 1913, and obtained his Ph.D. degree from Harvard university in 1917.

Until his appointment to the faculty of Columbia university, New York City, in 1926, Dr. Hecht was a national research fellow in physical chemistry and physiology and did work at laboratories in the U.S., England and Italy.

An authority in a wide range of scientific fields, Dr. Hecht was a member of the American Society of Naturalists, the American Society of Zoologists, the American Physiological society and the Optical Society of America.

His fame rested principally on his work in measuring the minimum number of light quanta detectable by the human eye and his research in colour discrimination and the theory of colour vision. For his work in the field of optics, he was awarded the Frederic Ives medal in 1941; he also received the Townsend Harris medal the following year for his scientific accomplishments.

During World War II, Dr. Hecht worked on vision problems for the armed forces and in 1946, he was made a member of the Emergency Committee of Atomic Scientists, headed by Dr. Albert Einstein. In the latter capacity, Dr. Hecht lectured on atomic energy, and his work *Explaining the Atom* (1947) was lauded by critics as a lucid exposition of nuclear energy for the layman.

He died of coronary thrombosis at his home in New York City, N.Y.

**Heinrichs, Jacob** (March 2, 1860–Aug. 30), U.S. missionary, educator.
**Hellinger, Mark** (March 21, 1903–Dec. 21), U.S. writer, film producer.
**Hellman, Milo** (March 26, 1872–May 11), U.S. orthodontist and anthropologist.
**Hely-Hutchinson, Victor** (Dec. 26, 1901–March 11), British composer, pianist, conductor.
**Henderson, Lucius** (1860?–Feb. 18), U.S. actor, producer.

**Henson, Herbert Hensley** (Nov. 8, 1863–Sept. 27), bishop of Durham from 1920 to 1939, was born at Broadstairs. In the year that he took his degree at Oxford he was elected to a fellowship at All Souls; after seven years in a large industrial parish in Barking, Essex, and five in charge of St. Mary's hospital, Ilford, he was nominated to a canonry of Westminster and the rectory of St. Margaret's, where he became a defender of modernism. In 1917, in spite of the protests of those who considered him too extreme a modernist, he was appointed as bishop of Hereford, and in 1920, after establishing himself as a successful bishop at Hereford, he was translated to the famous see of Durham. At the age of 76 he retired, but in 1940 was reinstated by the prime minister as a canon of Westminster. He died at his home near Ipswich. (*See* also *Encyclopædia Britannica.*)

**Herbert, Henry** (1878?–Feb. 20), U.S. actor.
**Hermine, Princess** (Dec. 17, 1887–Aug. 7), wife of Kaiser Wilhelm II.
**Hetzel, Ralph Dorn** (Dec. 31, 1882–Oct. 3), U.S. educator.
**Hickman, Emily** (July 12, 1880–June 12), U.S. historian, educator.
**Higgins, Edward John** (1864–Dec. 14), British leader of Salvation Army.
**Hill, Arthur Dehon** (June 25, 1869–Nov. 29), U.S. lawyer.

**Hill, Grace Livingston** (April 16, 1865–Feb. 23), U.S. novelist, was born in Wellsville, N.Y., the daughter of a Presbyterian minister. She studied at the Cincinnati Art school and Elmira college, Elmira, N.Y. Mrs. Hill wrote novels for a hobby until the death of her husband in 1899 left her with two small children and no income. She then converted her "hobby" into a livelihood. A prolific writer, she turned out more than three books a year. In her lengthy career as an author, she produced more than 100 novels and her publishers reported that more than 4,000,000 copies of her works had been sold in the U.S. alone. Many of these books were highly sentimentalized and carried sugar-coated "moral" messages. At one point in her career she quit a publisher who had asked her to "soften" or diminish the quantity of moralizing in her books. One of her most widely-read novels was *The Enchanted Barn* (1918). Among her other works are *A Chautauqua Idyl* (1887), *Marcia Schuyler* (1908), *The War Romance of the Salvation Army* (1918), *The Challengers* (1932), *The Sound of the Trumpet* (1943) and *All Through the Night* (1945). Under the pseudonym of Marcia Macdonald she wrote *The Honor Girl* (1927), *Found Treasure* (1928), *Out of the Storm* (1929) and *The White Lady* (1930). Mrs. Hill died at her home in Swarthmore, Pa.

**Hodges, Frank** (April 30, 1887–June 3), British politician, labour leader.
**Hoffenstein, Samuel** (1890?–Oct. 6), U.S. writer.
**Hogarth, Alfred Moore** (June 29, 1876–March 12?), British entomologist.
**Hogate, Kenneth Craven** (July 27, 1897–Feb. 11), U.S. publisher.
**Holland, Sir Thomas Henry** (Nov. 22, 1868–May 15), British geologist, mineralogist.

**Homer, Louise** (April 28, 1871–May 6), U.S. operatic singer, was born Louise Dilworth Beatty in Sewickley, Pa., near Pittsburgh. For her early career, see *Encyclopædia Britannica.* Mme. Homer, who made her debut in Vichy, France, in 1898, became one of the stars of the Metropolitan Opera Company in New York.

Retiring from the Metropolitan after the 1918–19 season, she played with the Chicago Civic Opera in 1920, the San Francisco and Los Angeles Opera companies in 1926 and again returned to the Metropolitan in 1927, continuing thereafter to give recitals throughout the country. During her later years, she resided in Winter Park, Fla., where she died.

**Hooley, Ernest Terah** (1858?–Feb. 11), British financier.

**Hopkins, Sir Frederick Gowland** (June 30, 1861–May 16), British biochemist, was born in Eastbourne, East Sussex, England, and was educated at private schools. For his early career, see *Encyclopædia Britannica.* A pioneer in vitamin research, Sir Frederick and Dr. Christiaan Eijkman were joint winners of the Nobel Prize for physiology and medicine in 1929.

Although best known for his studies in vitamins, Sir Frederick, together with Sir Walter Fletcher, made important contributions to the understanding of chemical changes accompanying muscular contractions; he also isolated the glutathione substance, an important factor in power of living tissues to use oxygen.

He was elected president of the Royal society in 1930 and of the British Association for the Advancement of Science in 1933. On his retirement in 1943 at the age of 82, he attributed the long span of his working largely to his vitamin-buttressed diet. He died at Cambridge, Eng

**Horta, Baron Victor** (1861?–Sept. 8), Belgian architect.
**Houghton, Will H.** (1887?–June 14), U.S. clergyman.
**Howard, Sir Albert,** (Dec. 8, 1873–Oct. 20), British agricultural scienti
**Howe, Arthur Millidge** (June 28, 1867–Oct. 13), U.S. editor.
**Howell, Williamson S., Jr.** (1891?–May 22), U.S. diplomat.
**Hubbard, John W.** (1863?–June 3), U.S. industrialist.
**Huberman, Bronislaw** (Dec. 19, 1882–June 16), U.S. violinist.

**Huch, Ricarda** (July 18, 1864–Nov. 17), German poet and historical no was born at Brunswick, Germany. For her early career, see *Encyclo Britannica.* Considered by critics as one of Germany's greatest w writers, Frau Huch received the Goethe prize in 1931. Among her works were studies of Garibaldi; of the Italian revolutionary Count Fe Confalonieri, who was condemned to life imprisonment for his particip in the Piedmontese revolt of 1821; and of Martin Luther. She di Frankfort-on-Main, Germany.

**Huhner, Max** (June 30, 1873–Nov. 8), U.S. urologist.
**Hunloke, Sir Philip** (1868–April 1), British yachtsman.
**Huntington, Ellsworth** (Sept. 16, 1876–Oct. 17), U.S. geographer.
**Huntoon, Louis Doremus** (Jan. 28, 1869–Feb. 22), U.S. mining engineer, e tor.
**Hutchings, Richard Henry** (Aug. 28, 1869–Oct. 28), U.S. psychiatrist.
**Isham, Mary Keyt** (Aug. 20, 1871–Sept. 28), U.S. psychoanalyst, neurol
**Jackson, Sir (Francis) Stanley** (Nov. 21, 1870–March 9), British cricketer politician.
**Jaggard, William** (1867?–April 27), British Shakespearean authority.
**James, Henry** (1879–Dec. 13), U.S. author.
**Jelf, Sir Arthur Selborne** (Oct. 10, 1876–Feb. 26), British colonial official.
**Jennings, Herbert Spencer** (April 8, 1868–April 14), U.S. zoologist, genet
**Jervey, James Postell** (Nov. 14, 1869–March 12), U.S. army officer, ma matician.
**Jewell, Edward Alden** (March 10, 1888–Oct. 11) U.S. art critic.
**Job, Thomas** (Aug. 10, 1900–July 31), U.S. playwright, educator.
**Johns, Joshua L.** (Feb. 27, 1881–March 16), U.S. lawyer, banker, politicia
**Johnson, Irving Peake** (Nov. 5, 1866–Feb. 28), U.S. clergyman.
**Johnson, Treat Baldwin** (March 29, 1875–July 28), U.S. chemist, educator.
**Johnston, George Napier** (Aug. 1867–April 3), Canadian army officer.
**Jones, Grinnell** (Jan. 14, 1884–June 23), U.S. educator, chemist.
**Jordan, Elizabeth** (1867?–Feb. 24), U.S. author.
**Kaplanoff, Prince Irban-Khan** (1887?–Oct. 10), Russian tzarist army off
**Kaufman, Herbert** (March 6, 1878–Sept. 6), U.S. author, editor.
**Kay, Sir Robert Newbald** (Aug. 6, 1869–Feb. 24), British M.P., church lea
**Keeble, Glendinning** (Feb. 24, 1887–July 20), U.S. educator.
**Kennet, Lady Kathleen** (?–July 25), British sculptress.
**Kenward, Sir Harold** (1894?–Aug. 28), British motorcar manufacturer.
**Keppel, Sir Colin (Richard)** (Dec. 3, 1862–July 9), British naval officer.
**Kerrigan, J. Warren** (1880?–June 9), U.S. motion-picture actor.
**Ketcham, Victor Alvin, Sr.** (Aug. 7, 1883–July 20), U.S. educator.
**Keyser, Cassius Jackson** (May 15, 1862–May 8), U.S. educator, mathe cian.
**Khan, Sir Shafa'at Ahmad** (1893–July 18), Indian political leader.
**Kilvert, Margaret Cameron** (Dec. 21, 1867–Feb. 4), U.S. author.
**King, Caroline Blanche** (1867?–Dec. 2), U.S. editor, author.
**Kirby, C. Valentine** (1875–Sept. 27), U.S. art educator.
**Kirk, Raymond V.** (May 3, 1901–May 27), U.S. Catholic leader, educator
**Knight, Howard Roscoe** (June 23, 1889–Oct. 7), U.S. social worker.
**Kraus, Rene Raoul** (Nov. 3, 1902–July 16), Austrian writer, politician.

**La Guardia, Fiorello H.** (Dec. 11, 1882–Sept. 20), U.S. politician, was in Manhattan's lower east side, of Italian-Jewish parentage. He pa his boyhood in an army post in Arizona where his father, an army b master, was stationed and finished high school in Prescott, Ariz.

At the age of 19, La Guardia worked in U.S. consulates in Buda Hungary, and Trieste, Austria, and was consular agent at Fiume, Hung when he was 22. Returning to New York soon afterward, he worked as a terpreter at Ellis Island, meanwhile studying law.

In 1916, La Guardia was elected to the U.S. house of representative the Republican ticket. During World War I, he served with the U.S. a air forces on the Italian front, was wounded twice, was promoted to rank of major and received the Italian war cross.

On his return home, La Guardia in 1919 was elected president of York's board of aldermen, but gave up the post in 1922 to run again for house of representatives, to which he was elected. In congress he ali himself with Republican liberals and the La Follette progressives and w he was re-elected in 1924, it was as the nominee of the Socialist and Prog sive parties.

La Guardia was defeated by Tammany and old-line Republicans in first try for the New York mayoralty in 1929, but in 1934, he was ele on a Republican-Fusion ticket and was re-elected in 1937 and 1941. He not run for re-election in 1945.

The new mayor broke Tammany's grip in the city and succeeded lar in giving New York an honest administration. But his efforts were colourful and the peppery and aggressive "Little Flower," rushing to fire tongue-lashing politicos, made excellent newspaper copy not only in York but all over the country.

La Guardia was director of the Office of Civilian Defense during W War II, and from March to Dec. 1946 he was director-general of the Un Nations Relief and Rehabilitation administration. He died at his hom Riverdale, the Bronx, N.Y.

**Lamotte, Arthur** (1871?–July 17), U.S. explosives expert.
**Langdon, William Chauncy** (April 21, 1871–April 11), U.S. historian, lib tist.
**Langworthy, William Franklin** (1864?–July 23), U.S. biologist.
**Larimore, Earle** (Aug. 2, 1899–Oct. 23), U.S. actor.

**Larkin, James** (1878–Jan. 30), Irish labour leader, was born in Liverp and worked as a dock labourer. In 1906 he successfully organized the d workers of Belfast. He increased demands for better pay and conditi and his campaign eventually led to his trial and sentence for sedition in 191 ublin. Soon afterward released, he visited England but was not welcomed English labour leaders. He spent most of World War I in the United ates. In 1917 he was found guilty of criminal anarchy, was imprisoned d, in 1922, deported. On his return to Ireland he raised a dockers' strike. e visited Moscow in 1924 but later denied that he was communist. He was ected to the Dail in 1927 but his seat was made vacant because he had been clared bankrupt in 1925. He was again elected in 1937 and took his seat, s bankruptcy being soon afterward annulled. Though still titular head of e Workers' Union of Ireland, in his later years he had ceased to be active. e died in Dublin.

**am, George W.** (1870?–Feb. 25), Canadian educator.

**es, Lewis Edward** (Sept. 13, 1883–April 23), U.S. penologist, was born Elmira, N.Y., son of Harry Lewis Lawes, an employee of the state reformatory.

Running away from home at the age of 17, he joined the army. Upon mpleting his "hitch" three years later, he returned to New York state and, llowing in his father's footsteps, became a guard at Clinton prison, Dannemora, N.Y. He later worked at the Auburn and Elmira penal institutions, as superintendent of New York city's reformatory on Hart's Island and in 19 Gov. Alfred Smith appointed him chief warden of Sing Sing prison in ssining, N.Y.

At Sing Sing, Lawes initiated the principle that prisons should rehabilitate ther than punish its inmates, a concept then regarded as novel and danrously radical. He destroyed class distinctions among prisoners and forced l inmates to wear the same prison uniform regardless of their status or ealth in the outside world. He also instituted prison theatricals, installed fety devices in prison workshops, encouraged athletics, particularly basell and football, and arranged moving picture performances. Later he ranged to have each cell equipped with individual radio earphones.

Lawes was sternly opposed to capital punishment and was honorary esident of the American League to Abolish Capital Punishment. His putation as a constructive penologist grew rapidly and he served as delate at several international prison congresses in Europe. Retiring as arden of Sing Sing in 1941, Lawes thereafter devoted himself to lecturing d writing. Among his works are *Man's Judgment of Death* (1923); *Life d Death in Sing Sing* (1928); *20,000 Years in Sing Sing* (1932); *Cell 202, ng Sing*; *Invisible Stripes*, *Meet the Murderer* (1940) and *Stone and Steel* 941).

He died at his home in Garrison, N.Y.

**rence, Arabella Susan** (1871–Oct. 24), British politician.

**erc de Hautecloque, Jacques Philippe** (1902–Nov. 28), French soldier, was rn in 1902 near Amiens and studied at the military school of Saint-Cyr. n leaving it in 1924 he became a cavalry officer, but later returned as an structor. At the outbreak of World War II he served in France as a capin; he was wounded and taken prisoner in 1940, but escaped to England to in the Free French movement under General Charles de Gaulle. He was most immediately sent to the Cameroons and then to the Chad territory. is famous march from Fort Lamy in Equatorial Africa to join the British h army for the attack on the Mareth line in 1943 distinguished him as one the outstanding young commanders of the war. After the North African mpaign he went to England to raise and train the French 2nd armoured vision, which took part, under his command, in the invasion of Normandy June 1944. Again he made a spectacular march, this time leading the vision into Paris. Later, as part of the French army, troops of the same vision were the first to enter Strasbourg on Nov. 23, 1944; General Leclerc as governor of the city early in 1945. In the same year he was appointed mmander-in-chief of French Indo-China, and officially changed his name om Philippe, Vicomte de Hautecloque, to Leclerc de Hautecloque, using s wartime pseudonym. He died in an aircraft accident in French North frica, where from April 1947 he had held the appointment of inspector the forces of land, air and sea.

**mte du Noüy, Pierre** (1883?–Sept. 22), French scientist.

**of Fareham, Arthur Hamilton Lee,** 1st Viscount (Nov. 8, 1868–July 21), Brith statesman, was born at Bridport, England. He had a military education at e Royal Military academy, Woolwich, served in the royal artillery and later ecame professor of strategy and tactics at the Royal Military college of anada. He was military attaché with the U.S. army during the Spanishmerican War of 1898 and later served as military attaché in Washington. aving retired from the army in 1900, he was elected Unionist (Conservave) member of parliament for Fareham, Dorset.

He became private secretary to the secretary of state for war and, in 902, civil lord of the admiralty, a post he held until Nov. 1905. During orld War I, he served as staff colonel with the British expeditionary forces France. In 1915 he joined the ministry of munitions then under David loyd George. He continued to serve in Lloyd George's administration s director general of food production, 1917–18, minister of agriculture and sheries 1919–21, and first lord of the admiralty, 1921-22. He retired from ctive political life in 1922 upon the resignation of Lloyd George. In 1917 e presented Chequers, his country house in Buckinghamshire, to the nation, s the official country residence of the British prime minister; in 1921 the ouse and the estate of about 1,500 ac. were put at the government's disposal. 1940 he published a volume of memoirs under the title *A Good Innings*.

**Gallienne, Richard** (Jan. 20, 1866–Sept. 14), British poet and critic.
**man, Philip** (Nov. 9, 1861–March 21), U.S. investment banker.

**nard, Benjamin (Benny)** (April 7, 1896–April 18), U.S. pugilist, was born as enjamin Leiner, and grew up in the slums of Manhattan's east side. He ntered the professional boxing ring in 1912. Agile in footwork and a talnted defensive fighter, Leonard defeated Freddie Welsh, British world's ghtweight champion, in a nondecision fight in 1915. Rematched with the riton two years later (1917), he upset predictions that his "powder-puff" unch would result in his defeat and knocked out the champion.

Leonard successfully defended his crown for eight years, meeting all omers. His most famous ring encounters were with Lew Tendler, whom he et twice, and with Johnnie Dundee, perennial contender, who battled Leoard eight times. His fights with Tendler were regarded as ring classics and endler later claimed that on one occasion he was "talked out" of the ampionship by Leonard.

Abiding by his mother's wishes, Leonard retired from the ring in 1925, undefeated. Having lost most of his fortune in the 1929 crash, he attempted a comeback as a welterweight in 1932. But Leonard's age and long absence from the ring tripped up his ambitions and he was knocked out by Jimmy McLarnin, welterweight champion.

During World War II, Leonard served as a lieutenant commander in the U.S. maritime service. He died suddenly of a heart attack while refereeing a bout in a New York city arena, April 18.

**Leonard, Veador** (1888?–Sept. 11), U.S. physician, research chemist.
**Lerch, Archer Lynn** (Jan. 12, 1894–Sept. 11), U.S. army officer.
**Letts, Ira Lloyd** (May 29, 1889–Nov. 24), U.S. jurist.
**Lever, Sir (Samuel) Hardman** (April 18, 1869–July 1), British financial authority.
**Lewin, Kurt** (Sept. 9, 1890–Feb. 12), U.S. educator, psychologist.
**Lewis, Ernest Irving** (Feb. 11, 1873–July 1), U.S. government official, journalist.
**Lillie, Frank Rattray** (June 27, 1870–Nov. 5), U.S. zoologist.
**Lion, Leon M.** (March 12, 1879–March 28), British actor, author, producer.
**Lloyd, Francis Ernest** (Oct. 4, 1868–Oct. 17), U.S. botanist.
**Lloyd, Sir John Edward** (May 5, 1861–June 20), British historian.
**Lofting, Hugh** (Jan. 14, 1886–Sept. 26), Anglo-U.S. writer.
**Lonergan, Augustine** (May 20, 1874–Oct. 18), U.S. lawyer, politician.

**Loring, John Alden** (March 6, 1871–May 8), U.S. naturalist, was born in Cleveland, O. Educated at the Owego Free academy, Owego, N.Y., he also studied at zoological gardens in Europe.

He was field naturalist for the U.S. biological survey from 1892 to 1897 and curator of animals at the New York Zoological park from the latter year to 1901. He was also field naturalist for the U.S. National museum at which time he was commissioned to collect specimens of European birds and mammals. Travelling throughout the continent on this mission, he collected 913 mammal specimens, two of which were at that time unknown to scientists.

Accompanying President Theodore Roosevelt during the latter's expedition and hunting trip to Africa in 1909–10, as field naturalist representing the Smithsonian institution, he penned his adventures and experiences in *Through Africa with Roosevelt*.

He died in Owego, N.Y.

**Lowrey, Bill Greene** (May 25, 1862–Sept. 2), U.S. educator, congressman.

**Lubitsch, Ernst** (Jan. 29, 1892–Nov. 30), U.S. motion picture director, was born in Berlin, Germany. After receiving his early training under Max Reinhardt, Lubitsch became an actor in the pioneer cinema days. Later, however, he found that his forte was directing and by 1918 he had become one of the best-known of the continental directors.

Unfettered by romantic traditions, Lubitsch turned out in European studios such sturdy film fare (for his epoch) as *Passion* and *Gypsy Blood* and developed such actors as Emil Jannings and Pola Negri, whom he later introduced to U.S. audiences.

In 1922, he went to the United States at the invitation of Mary Pickford to direct one of her productions. He thereafter remained in the U.S., soon becoming one of Hollywood's top directors.

In March of 1947, Lubitsch was awarded a special "Oscar" at the annual presentation of awards by the Academy of Motion Picture Arts and Sciences for his "contributions to the industry in twenty-five years as a director."

Among his better-known productions were: *Madame Dubarry*, *The Marriage Circle*, *The Student Prince*, *The Patriot*, *Love Parade*, *Monte Carlo*, *The Smiling Lieutenant*, *Merry Widow*, *Ninotchka*, *Design for Living*, *Bluebeard's Eighth Wife*, *Shop Around the Corner*, *Heaven Can Wait*, *Desire*, *Royal Scandal* and *Cluny Brown*.

He died at his home in Bel Air, Calif.

**Lucas, Robert H.** (Aug. 8, 1888–Oct. 13), U.S. politician.

**Lytton, Victor Alexander George Robert Lytton,** 2nd Earl of (Aug. 9, 1876–Oct. 25), British diplomat and government official, was born in Simla, India. He was educated at Eton and Trinity college, Cambridge, and married Pamela Chichele-Plowden in 1902. He was appointed civil lord of the admiralty in 1916, and thereafter held numerous responsible government positions. He was undersecretary of state for India (1920–22), governor of Bengal (1922–27) and viceroy and acting governor of India (1925).

Lord Lytton headed the Indian delegation to the League of Nations assemblies in 1927 and 1928, later was appointed British delegate to the league, and in Jan. 1932 was named chairman of the League of Nations commission which went to Manchuria to investigate the controversy between China and Japan. The report of the Lytton commission included proposals for a solution to the problem which were adopted by the league assembly, and this led to the withdrawal of Japan from league membership.

Lord Lytton was the author of *Life of Edward Bulwer, First Lord Lytton* (1913), *Old Treasure* and *New Treasure* (1934), *Anthony Viscount Knebworth—A Record of Youth* (1935), *The Web of Life* (1938), *Pundits and Elephants* (1942) and *Love Incarnate* (1945). He died at his home in Knebworth, Hertfordshire, Eng.

**McAfee, Joseph E.** (April 4, 1870–March 14), U.S. educator.
**McCartan, Edward** (Aug. 16, 1879–Sept. 20), U.S. sculptor.
**McCollum, Earl** (June 7, 1889–Feb. 4), U.S. newspaper publisher.
**McConathy, Osbourne** (Jan. 15, 1875–April 2), U.S. musician.

**MacGill, Helen Gregory** (1870?–Feb. 27), Canadian jurist and welfare worker, was born in Hamilton, Ont., and was educated at the University of Toronto. The only woman in her class, she received her M.A. degree in 1888. In her early career, she was a newspaper reporter, and one of her assignments took her to Japan to write a series of articles on social conditions in that country. Later, she returned to the United States to continue her newspaper work, and carried on a campaign for reform of state institutions and for laws to improve the conditions of women and children in industry. At the time of the death in 1900 of her first husband, Dr. F. C. Flesher, she was employed on a large St. Paul daily. She was remarried in 1902 to J. H. MacGill, a former classmate, and moved to Vancouver to practise law. In 1917, Mrs. MacGill became the first woman in British Columbia ever to hold the dual position of juvenile court judge and justice of the peace. She held this post until 1929, and was reappointed to it in 1934. Named a member of the British Columbia Minimum Wage board in 1918, she helped draft the board's first regulations. She was also chairman of the Greater Vancouver Mothers

Pension board, 1920-21. Mrs. MacGill, who retired as judge of the Vancouver juvenile court in Jan. 1945, died in Chicago.

**McGovney, Dudley Odell** (June 23, 1877–Oct. 15), U.S. educator, law authority.
**Machado, Manuel** (1874–Jan. 19), Spanish poet.
**Machen, Arthur** (1863–Dec. 15), British author.
**Mackay, J. Harold** (1875?–March 18), Canadian photographer.
**McKeever, Emmet G.** (1893?–July 9), U.S. oil industrialist.
**Mackensen, Hans-Georg Viktor von** (1883–Oct. 20?), German diplomatist.
**Mackinder, Sir Halford John** (Feb. 15, 1861–March 6), British geographer, parliamentarian, economist.

**McLaughlin, Andrew Cunningham** (Feb. 14, 1861–Sept. 24), U.S. historian and educator, was born in Beardstown, Ill. Graduated from the University of Michigan in 1882, he taught history there until 1906 when he joined the University of Chicago as chairman of the history department, a post he held until 1927.

Upon retiring from active academic life, Dr. McLaughlin devoted several years to writing his opus, *A Constitutional History of the United States*, which appeared in 1935 and which won the Pulitzer prize the following year. Among his other publications are *A History of the American Nation* (1899), *The Confederation and the Constitution* (1905), *The Courts, the Constitution and Parties* (1912), *America and Britain* (1918) and *Steps in the Development of American Democracy* (1920).

Dr. McLaughlin was at various times president of the American Historical association, managing editor of the *American Historical Review* and director of the Carnegie institution's bureau of historical research. He died at his home in Chicago, Ill.

**McLean, Evalyn Walsh** (Aug. 1, 1886–April 26), U.S. society woman, was born in Colorado, the daughter of an Irish millwright who discovered one of the richest gold veins in the state. She inherited the fortune left by her father, and in 1907 married Edward Beale McLean, heir of the family that published the *Cincinnati Enquirer* and the *Washington Post*.

In 1909, McLean gave his wife the Hope diamond, a 44½-carat Indian blue stone which is believed to be a portion of the Regent or Pitt diamond that was stolen with other crown jewels during the French Revolution.

Legend has it that ownership of the Hope diamond brings disaster and tragedy to its possessors. Accordingly, Mrs. McLean's divorce, the death of her eldest son in an auto accident, the death of her daughter from an overdose of sleeping tablets, subsequent confinement of her husband in a mental institution and sundry other misfortunes that befell the family were attributed by some to the Hope "jinx." While Mrs. McLean during her lifetime refused to give credence to the popular superstition surrounding the stone, wearing it on many occasions, a provision of her will stipulated that the gem was to be left in trust for her grandchildren; it would therefore not be worn for at least 20 years after her death.

She died at her home in Washington, D.C.

**McMurtrie, Edith** (?–May 30), U.S. painter, art teacher.

**MacNair, Harley Farnsworth** (July 22, 1891–June 22), U.S. educator and authority on far eastern affairs, was born in Greenfield, Pa., and received his Ph.D. degree from the University of California in 1922. Dr. MacNair was on the faculty of St. John's university in Shanghai for 20 years, starting as an instructor and rising to dean of the department of history and government. In the early 1920s he was dean of the East China summer school, a contributing editor of two important English language reviews on China and was a member of the editorial staff of the *Chinese Recorder*.

Returning to the U.S., he joined the University of Washington, Seattle, Wash., as associate professor of far eastern government and diplomacy, and became professor of far eastern history and institutions at the University of Chicago in 1928.

An authority on China and far eastern affairs, Dr. MacNair was a consultant for the far eastern section of the Office of Strategic Services during World War II.

Among his books are: *China's New Nationalism and Other Essays* (1925), *China's International Relations and Other Essays* (1926), *China in Revolution* (1931), *Modern Far Eastern History* (1934) and *The Real Conflict Between China and Japan* (1938). Dr. MacNair died in Chicago, Ill.

**McNaugher, John** (Dec. 30, 1857–Dec. 11), U.S. theologian.
**MacNeil, Hermon Atkins** (1866–Oct. 2), U.S. sculptor.
**McNicoll, Sir Walter Ramsay** (May 27, 1877–Dec. 25), Australian army officer.
**McQuillan, Hugh** (1898?–Aug. 26), U.S. baseball player.
**Maidstone, Leslie Owen,** SUFFRAGAN BISHOP OF (Feb. 4, 1886–March 2), British clergyman.
**Malisoff, William Marias** (March 14, 1895–Nov. 16), U.S. biochemist.
**Manchester, William Angus Drogo Montagu,** 9TH DUKE OF (March 3, 1877–Feb. 9), British peer.
**Mann, Albert Russell** (Dec. 26, 1880–Feb. 21), U.S. educator, agricultural economist.
**Mannheim, Charles** (1893–Jan. 9), Hungarian sociologist.
**Mansfield, Joseph Jefferson** (1861?–July 12), U.S. congressman.
**Marlow, Georges** (1872–April 10?), Belgian poet.
**Marquet, Albert** (March 27, 1875–June 14), French painter.
**Marston, William Moulton** (May 9, 1893–May 2), U.S. psychologist.
**Martin, Francis** (Oct. 3, 1878–June 1), U.S. jurist.
**Martinez Sierra, Gregorio** (May 6, 1881–Oct. 1), Spanish writer.
**Martini, Arturo** (Aug. 11, 1889–March 22), Italian sculptor.
**Mathers, Frederick Francis** (Oct. 17, 1871–April 14), Nova Scotian government official.
**Mattirolo, Oreste** (Dec. 7, 1856–Dec. 5), Italian botanist.
**Maurey, Max** (1870?–Feb. 27), French playwright.
**Maxwell, George Lawrence** (July 11, 1896–Jan. 3), U.S. educator.
**Michener, Edward** (Aug. 18, 1867–June 16), Canadian politician.
**Mildmay of Flete, Francis Bingham Mildmay,** 1ST BARON (April 26, 1861–Feb. 8), British sportsman, M.P.
**Miles, Vincent Morgan** (Oct. 16, 1885–Aug. 20), U.S. government official.
**Mitchell, Abe** (1887?–June 11), British golfer.

**Mitscher, Marc Andrew** (Jan. 26, 1887–Feb. 3), U.S. naval officer, was born in Hillsboro, Wis. A graduate of the U.S. Naval academy at Annapolis,
(1910), he took up naval aviation in Oct. 1915, and in 1919 attempte
first naval transatlantic flight, but was forced down in the Azores. I
years preceding World War II, he continued his association with the n
aviation section and by 1941 had risen to the rank of rear admiral.
following year, he commanded the aircraft carrier "Hornet" from w
Gen. James Doolittle's army bombers took off to bomb Tokyo, April 18, 1

Adm. Mitscher participated in most of the important naval engagem
in the Pacific war theatre, including the Midway battle (June 1942) an
Battle for the Solomons (1943). In 1944 he was given command of
Force 58, then described as "the most powerful and destructive naval
in the history of sea warfare." During that year, Mitscher's force took
in the Marshall Islands invasion, the attack on Truk, the Marianas inva
and the battles of the Philippine sea and Leyte gulf. On May 11, 1945,
Mitscher, who was directing naval-air operations off the Ryukyus, narr
escaped death when two Japanese Kamikaze planes crashed on the de
the carrier "Bunker Hill," his flagship, taking the lives of at least 373
members.

Relieved of his active command in July 1945, he was returned to W
ington as deputy chief of naval air operations. The following Decemb
was promoted to the rank of a full admiral and on Sept 21, 1946, he
made commander in chief of the U.S. Atlantic fleet. He died at the No
Naval Station hospital, Norfolk, Va.

**Moldenhauer, Paul** (Dec. 2, 1876–Feb. 19?), German economist, politicia
**Monahan, Peter Joseph** (1882–May 6), Canadian Catholic cleric.
**Monroe, Paul** (June 7, 1869–Dec. 6), U.S. educator.

**Monsky, Henry** (Feb. 4, 1890–May 2), U.S. Jewish leader, was born in Om
Neb. Graduated from Creighton university, Omaha, in 1912 with an L
degree, he was admitted to the Nebraska bar the same year. He joine
B'nai B'rith lodge, eventually becoming international president of
Jewish fraternal order. He was also a member of the board of truste
Father Flanagan's "Boys' Town" in Nebraska and chairman of the Juv
Delinquency board set up by Tom Clark, U.S. attorney general.

An ardent Zionist, Monsky was one of the leaders in the campaign
establishing a national Jewish homeland in Palestine. As chairman of
Interim committee of the American Jewish conference, he pleaded
establishment of such a state in testifying before the Anglo-American C
mittee of Inquiry in its Washington sessions in early 1946.

In 1945 Monsky served as consultant to the United States delegatio
the United Nations conference in San Francisco. He died of a heart at
in New York city, N.Y.

**Montgomery-Massingberd, Sir Archibald (Armar)** (Dec. 6, 1871–Oct.
British army officer.

**Monzie, Anatole de** (1876–Jan. 11), French lawyer, politician and autho
**Moody, Paul Dwight** (April 11, 1879–Aug. 18), U.S. educator, churchma

**Moore, Grace** (Dec. 5, 1901–Jan. 26). U.S. operatic and concert singer,
born in Jellico, Tenn. At the age of 17, she sang in a concert with
celebrated Giovanni Martinelli. Though critics gave her high praise,
appearance did not provide her with an immediate entree into opera.

In 1926 she went to Europe where she studied under Richard Barthel
and Mary Garden. After appearing at La Scala in Milan, she was sig
to appear at the Metropolitan opera in New York. Her debut in the
of Mimi in *La Bohème* in 1928 was widely publicized in advance. Cri
acclaim emphasized the sparkle and vivacity of her acting.

Remaining with the Metropolitan for three seasons, she gave not
performances in the role of Juliet in *Romeo and Juliet*, of Marguerit
*Faust*, Michaela in *Carmen* and in the title role of *Manon Lescaut*.
July 15, 1931, she was married to Valentin Parera.

After a disappointing first venture in motion pictures, Miss Moore sc
a box-office success in *One Night of Love*. Her subsequent films were
well received.

In 1935 Miss Moore appeared in London and gave a command perfo
ance for Queen Mary, and during World War II, she toured U. S. a
camps under the auspices of U. S. O. Camp Shows, Inc.

In July 1946 Miss Moore went to Europe on a prolonged tour. It
during this itinerary that she boarded a plane at the airport near Co
hagen, Denmark, intending to fly to Sweden. The plane, however, cras
shortly after its take off and Miss Moore and 21 other occupants were kil

**Moore, John Bassett** (Dec. 3, 1860–Nov. 12), U.S. jurist, was born in Smyr
Del. For his early career, see *Encyclopædia Britannica*. One of the co
try's leading authorities on international law, Moore was professor of in
national law and diplomacy at Columbia university from 1891 to 192
member of the Permanent Court of Arbitration at The Hague (1912–
and a judge of the Permanent Court of International Justice (1921–28).
confirmed pessimist regarding the chances for maintaining universal pe
Dr. Moore argued in 1933 that the cost of guaranteeing peace was so gr
that unless a nation were willing to sacrifice all its manpower and resour
in the effort, it had better adhere to its own neutrality.

Author of numerous works in his field, Dr. Moore wrote *Pending Neut
ity Proposals, Their False Conceptions and Misunderstandings* (1936). T
*Digest of International Law*, a monumental eight-volume work of which
was editor, was published in 1937.

He died at his home in New York city, N.Y.

**Mora, Jo (Joseph Jacinto)** (Oct. 22, 1876–Oct. 10), U.S. sculptor, author
**Morales, Carlos Alberto** (April 26, 1888–Dec. 11), Nicaraguan politician.
**Morgan, William A.** (1872?–May 27), U.S. financier, industrialist.
**Morriss, Hilda** (1888?–June 12), U.S. author.
**Mortimer, Stanley Grafton** (Dec. 11, 1890–April 5), U.S. racquets player

**Mottistone, John Edward Bernard Seely,** 1ST BARON OF (May 31, 1868–Nov.
British soldier, politician and author, was educated at Harrow and Trin
college, Cambridge. For his early career, see *Encyclopædia Britann*
After retiring from the army and active politics, Lord Mottistone produ
a number of books including *Adventure* (1930), *Fear and Be Slain* (19
*Launch* (1932), *For Ever England* (1932), *My Horse Warrior* (1934)
*Paths of Happiness* (1938). He died at his home in London.

**Moulton, Warren Joseph** (Aug. 30, 1865–May 7), U.S. educator, theologi
**Muller-Ury, Adolfo** (March 28, 1864–July 6), U.S. artist.

**nson, Edward Lyman** (Dec. 27, 1868–July 7), U.S. army medical officer.

**rray, Sir (George) Evelyn (Pemberton)** (July 25, 1880–March 30), British overnment official.

**sser, John Herr** (June 9, 1883–Sept. 5), U.S. physician, educator.

**gano, Osami** (1880–Jan. 5), Japanese naval officer, was born in June at Kochi, Japan. After graduating from the naval academy in 1900, he atended the naval staff college. In 1913 he was a language officer in the J.S., where he studied law at Harvard university and took courses at the Var college. As naval attaché in Washington, 1920–23, he participated in he Washington Naval conference of 1921–22 and later represented his ountry at other international conferences, including the London Naval onference in 1935–36, and the Geneva Naval Limitations conference. At he London meeting, Nagano withdrew his delegation in protest over the roposed 5–5–3 ratio and rejected Pres. Franklin D. Roosevelt's proposal f a 20% naval reduction. In 1936 Nagano became navy minister in Premier Koki Hirota's cabinet and was named naval chief of staff in April 1941. Early Japanese naval successes after Pearl Harbor earned Nagano a reputation as a naval strategist, but subsequent reverses at the hands of the J.S. fleet led to his ouster as chief of staff, Feb. 21, 1944. Interviewed by U.S. correspondent after the war, Nagano declared that he took full reponsibility for the Pearl Harbor attack. He was one of 28 Japanese officials ormally accused in April 1946 of war crimes and was standing trial in Tokyo before the International War Crimes Tribunal at the time of his leath.

**sh, Philip Curtis** (Aug. 28, 1890–May 6), U.S. educator.

**ilson, Nellie** (April 5, 1873–May 26), U.S. historian and educator, was born n Philadelphia, Pa., and was graduated with an A.B. degree from Bryn Mawr college, Bryn Mawr, Pa., in 1893. Miss Neilson, who also received ier Ph.D. from Bryn Mawr, taught history there from 1902 to 1903 and hen joined the faculty at Mt. Holyoke college, South Hadley, Mass., as history professor. Later appointed chairman of the history department, she wrote a number of important historical works dealing with economic and social conditions of mediaeval England. She was active in the American Historical association, and was elected president of that body in 1943, the first woman ever to hold that position. Miss Neilson also was the first woman to have a volume published in the *Oxford Studies in Social and Legal History*, the first to edit a yearbook for the Selden society and the first to have an article published in the *Harvard Law Review*.

She retired from Mt. Holyoke in 1939, becoming professor emeritus. Miss Neilson's works, published in the United States or England, include: *Economic Conditions on the Manors of Ramsey Abbey* (1899), *Customary Rents* (1910), *The Terrier of the Fleet* (1920), *The Cartulary of Bilsington* (1927) and *Medieval Agrarian Economy* (1936).

Miss Neilson died in South Hadley, Mass.

**lson, Thomas Horatio Nelson,** 4TH EARL (Dec. 21, 1857–Sept. 30), British peer.

**wstead, Robert** (Sept. 11, 1859–Feb. 16), British entomologist.

**chols, Spencer Van Bokkelen** (July 30, 1882–June 30), U.S. author, publicist.

**cholson, Meredith** (Dec. 9, 1866–Dec. 21), U.S. novelist, diplomat.

**cholson, Sir Sydney Hugo** (Feb. 9, 1875–May 30), British organist.

**rdhoff, Charles Bernard** (Feb. 1, 1887–April 12), U.S. author, was born in London, England, of American parents who returned to the United States while he was still a child. Graduated from Harvard university in 1909, he served in World War I and was successively an ambulance driver in France, a pilot in the Lafayette escadrille and, after the United States entered the conflict, an aviator in the U.S. army.

Following the armistice, Nordhoff and James Norman Hall, also a member of the French flying corps, collaborated in writing a history of the escadrille. Continuing their collaboration, Nordhoff and Hall went to Tahiti. Nordhoff married a native woman whom he divorced in 1941.

Meanwhile the Nordhoff-Hall combination produced a number of books, starting with *Faery Lands of the South Seas* (1921). Their most popular work, however, was *Mutiny on the Bounty* (1932), which was subsequently made into a successful moving picture.

Other Nordhoff-Hall books were *Falcons of France* (1929), *The Hurricane* (1935), *The Dark River* (1938), *Botany Bay* (1941) and *The High Barbaree* (1945). Nordhoff also wrote four books by himself, all of which were published between 1919 and 1928.

He died during the night of April 11–12 in Santa Barbara, Calif.

**orman, Fred** (March 21, 1882–April 17), U.S. congressman.

**bici, Amedeo** (July 15, 1877–May 21), U.S. business executive.

**'Brien, Howard Vincent** (July 11, 1888–Sept. 30), U.S. journalist and author, was born in Chicago. After graduating from Yale university (1910), he edited several magazines and took a flier in advertising. In World War I he served as a lieutenant in the U.S. field artillery.

In 1928, O'Brien joined the Chicago *Daily News* as book editor and four years later he started a column, entitled "All Things Considered." The column was given a choice spot on the editorial page and replaced the "Sharps and Flat" daily feature, the title of which had been originated by Eugene Field.

Although he wrote a number of books, O'Brien was particularly known in the midwest as a columnist. He touched on a wide variety of subjects with a simple, humble sincerity that won him a wide readership. Especially famous was his column entitled, "So Long, Son," written as a tribute to his son who had been killed in World War II. The tribute was reprinted in pamphlet form and was dramatized on the air. His books include: *New Men for Old* (1912), *Trodden Gold* (1922), *The Thunderbolt* (1923), *Wine, Women and War* (1926) and *An Abandoned Woman* (1930).

Bedridden the last year of his life, O'Brien persisted in writing his column from "Cell 308," the name he gave his hospital room, until his illness became so acute that he could no longer continue.

O'Brien died in Evanston, Ill.

**'Donnell, John Hugh** (June 2, 1895–June 12), U.S. educator, was born in Grand Rapids, Mich. A year after his graduation from Notre Dame university, Notre Dame, Ind., in 1916, he entered the Congregation of the Holy Cross, the religious society which conducts the university, and was ordained a priest in 1921.

From 1922 to 1940, with the exception of a three-year period (1931–34), when he served as president of St. Edward's university in Austin, Tex., Father O'Donnell was associated with Notre Dame in teaching or administrative posts.

He was prefect of discipline and director of student welfare at Notre Dame from 1923 to 1930, vice-president of the university from 1934 to 1940 and acting president from Jan. to July 1940. In the latter month he was chosen as president.

Father O'Donnell, who retired from the university's presidency in July 1946, died in South Bend, Ind.

**O'Leary, John** (July 18, 1881–Oct. 27), U.S. labour official.

**Orczy, Emmuska,** BARONESS (MRS MONTAGUE BARSTOW) (1865–Nov. 12), British novelist, was born in Tarnaörs, Hungary, the only child of Baron Felix Orczy. She was educated in Brussels and Paris, and at the age of 16 went to London to study painting at the Heatherley school of art, exhibiting at the Royal academy while still a student.

She began writing in 1900 with a series of detective stories for the *Royal Magazine*, and in 1905 produced the novel *The Scarlet Pimpernel* from one of her own short stories. This story of romantic adventure during the French revolution was to make her reputation as a popular novelist, but it had no success until she and her husband cast it in the form of the play which ran in London for four years. Immense sales of the novel followed; from that time forward she wrote many successful tales of adventure. Besides other stories of the Scarlet Pimpernel, some of her best-known books were *Beau Brocade*, (1908), *The Laughing Cavalier* (1914), and *The Honourable Jim* (1924), all written in the same sword-and-cloak tradition. Her last book, *Will-o'-the-Wisp* appeared in 1947; her memoirs were published in 1946. She died in London.

**Orsini, Prince Domenico Napoleone** (Nov. 7, 1868–March 21), Italian nobleman, Vatican lay official.

**Osgood, Wilfred Hudson** (Dec. 8, 1875–June 20), U.S. naturalist.

**Owen, Derwyn Trevor** (July 29, 1876–April 9), primate of the Anglican Church in Canada, was born in Twickenham, England. Educated at Trinity university, Toronto, Ont., Canada, he was ordained a deacon in 1900 and a priest the following year. He served as curate, rector and dean of several Anglican churches in Toronto and Hamilton from 1902 to 1925 and was consecrated bishop of Niagara in 1925, bishop of Toronto in 1932, becoming archbishop of Toronto and Anglican primate of all Canada in 1934. The archbishop, who had long crusaded for a united church became the first president of the Canadian Council of Churches in 1944.

He died of a heart attack in Toronto.

**Owen, Robert Latham** (Feb. 3, 1856–July 19), U.S. politician, was born in Lynchburg, Va., and studied at Washington and Lee university. Owen was of part Cherokee blood, and his energetic espousal of Indian causes won him national publicity. He was active in checking efforts to dispossess Cherokees and other tribes of their land in the Indian Territory in what is now Oklahoma. Largely through his efforts, the national Banking act was extended over the Indian territory, and he was responsible also for establishing the U.S. court in the territory.

In the 1890s Owen, acting as lawyer for various Indian tribes which had instituted actions against the government, succeeded in recovering large sums for the eastern and western Cherokees, the Choctaws and Chickasaws.

In 1901 Owen authored the act of congress that gave citizenship to the 70,000-odd Indians in the territory and also was instrumental in securing its passage.

When Oklahoma was admitted to statehood in 1907, Owen was elected to the U.S. senate. He remained in the senate until 1925, where he led the fight for ratifying the League of Nations covenant and participated in the drafting of the Federal Reserve act and the Farm Loan act. He died in Washington, D.C.

**Padway, Joseph Arthur** (July 25, 1891–Oct. 8), U.S. labour lawyer, was born in Leeds, Yorkshire, Eng. Emigrating to the United States in his youth, he studied at Marquette university, Milwaukee, Wis., graduating in 1912, and practised law in Milwaukee. Padway became general counsel to the Wisconsin State Federation of Labor in 1915, and achieved national prominence during the strike against the Kohler factory in 1934. In 1938, he was engaged by the American Federation of Labor as full-time general counsel and thereafter was recognized as its spokesman.

When he assumed this position, the A.F. of L. was engaged on a program to amend the Wagner act which it had regarded as partial to the C.I.O. Padway subsequently brought much of the litigation between the two unions before the U.S. supreme court. He also found himself in opposition to the investigation of the building trades unions proposed by Thurman Arnold (then head of the justice department's antitrust division), and to the antitrust action brought against James C. Petrillo, head of the Musicians union, an A.F. of L. affiliate.

During World War II, he represented the A.F. of L. during army and navy conferences on hiring policy and he opposed such wartime legislation as the Smith-Connally antistrike law, the Ball-Burton-Hatch labour bill and also attacked the constitutionality of the Lea bill which threatened to curb Petrillo's activities. Padway was one of the counsels for John L. Lewis during the latter's trial in 1946 when the federal government obtained an injunction against the coal strike and won its case.

Mr. Padway was addressing the A.F. of L. annual convention in San Francisco, Calif., when he suffered a stroke, and died a few hours later.

**Pardo, Jose** (Feb. 24, 1864–Aug. 4), Peruvian statesman.

**Parker, Frank** (Sept. 21, 1872–March 13), U.S. army officer.

**Parmelee, Cullen Warner** (July 27, 1874–Aug. 20), U.S. ceramics expert.

**Passfield, Sidney James Webb,** 1ST BARON (July 13, 1859–Oct. 13), British statesman and political economist, was born in London. Although he was a cabinet member in two Labour governments, he was never a conspicuous public figure; the works of historical research, political propaganda and public service for which he and his wife were responsible formed the greater part of his achievements. For his early life, see *Encyclopædia Britannica*.

After his resignation from the government in 1931, he retired from active politics and turned to the completion of his studies and investigations. In

1943, with the death of Lady Passfield, his long and remarkable partnership with "Beatrice Webb" came to an end. He died at Liphook, Hampshire.

**Paterson, Sir Alexander** (Nov. 20, 1884–Nov. 7), British penologist.

**Patiño, Simón Ituri** (June 1, 1862–April 20), Bolivian multimillionaire industrialist and "tin king," was born on June 1 in Cochabamba, of poor parents. While working in a general store, he acquired ownership of a mine from an Indian who could not pay a $250 debt. Believing that the mine contained rich silver lodes, Patiño was disappointed when he discovered that it consisted only of tin. However, European agents seeking new sources of tin to replace the worked-out lodes of Cornwall and Saxony, offered him a $5,000 loan to work his mine.

The European and North American demand for tin increased enormously, and Patiño's "wall of tin" became a source of immense wealth. Eventually he became owner of the largest tin deposits in the world, as well as other mining properties, banks and railroads.

He went abroad in 1922 and never returned to Bolivia. However, he was considered an important political factor in that country, because tin was the chief source of its income. He was Bolivian minister to Spain, 1920–26. and to France, 1926–41. During World War II, he lived for a short while in the United States and then moved to Buenos Aires, Arg., where he died.

**Patterson, John Henry** (Nov. 10, 1867–June 20?), British army officer.
**Peale, Arthur Lincoln** (1868?–March 1), U.S. writer.
**Pelletier, George** (1882?–Jan. 20), Canadian newspaper executive.
**Penrose, Stephen Beasley Linnard** (Dec. 20, 1864–April 29), U.S. educator.
**Pepper, William** (May 14, 1874–Dec. 3), U.S. medical educator.
**Perkins, Maxwell Evarts** (Sept. 20, 1884–June 17), U.S. editor, publisher.

**Perry, James De Wolf** (Oct. 3, 1871–March 20), U.S. Episcopal bishop, was born in Germantown, Pa. Graduated from Harvard university in 1892 with an M.A. degree and with a B.D. from the Cambridge Theological school, Cambridge, Mass., in 1895, he entered the Episcopal Church as a deacon in the latter year and was advanced to the priesthood in 1896. After serving as rector in several eastern seaboard churches, he was consecrated in 1911 as seventh bishop of Rhode Island. Elected presiding bishop of the church in 1930 for a temporary period, Dr. Perry was re-elected in 1931 for the full six-year term. The position of presiding bishop, analogous to that of the archbishop of Canterbury in England, made Dr. Perry the ranking Episcopal churchman in the United States. In 1933 Bishop Perry made a five-month tour of Episcopal missions in the orient to investigate charges of maladministration; on his return to the United States, he asserted that the "copious criticisms" levelled at the missions abroad were not justified. Dr. Perry, who was overseer at Harvard from 1937 to 1943, died in Summerville, S.C.

**Petit de Julleville, Pietro,** CARDINAL (Nov. 22, 1876–Dec. 10), French Catholic prelate, was born at Digione, son of Louis Petit de Julleville, French historian of literature. Ordained in 1903, Msgr. Petit de Julleville served as chaplain with the French army during World War I, and was elevated to the rank of bishop in 1927. Nine years later, he was named archbishop of Rouen and primate of Normandy. During World War II, Msgr. Petit de Julleville refused to leave Rouen and remained in the city during the German occupation. On Feb. 18, 1946, he was proclaimed a cardinal at the Vatican consistory. He died in Rouen.

**Petkov, Nikola Dimitrov** (1889–Sept. 23), Bulgarian democratic leader, was from the beginning of his career in politics a member of the Agrarian National Union which, after World War I, supported and sought to represent politically the large peasant class of Bulgaria. Its leader, Alexander Stambolisky, was murdered in 1923, and from that time until World War II its leading members, among whom was Petkov, fought an unequal battle against arbitrary government; Petkov himself spent many years in prisons or concentration camps because of his bold opposition. He was interned during the early years of World War II, but later became one of the leaders of the Bulgarian resistance movement. When underground activity had enabled the party to seize power in Sept. 1944, he signed the Moscow armistice that ranked Bulgaria among the Allies. He became deputy prime minister but his efforts to co-operate with his Communist colleagues were unsuccessful, and in Aug. 1945 he and his fellow-agrarians resigned, going into public opposition. The elections of autumn 1946, although discredited by the western powers because of the open intimidation exercised over the voters, nevertheless resulted in a total for the Agrarian party of one-third of the votes; Petkov's public conclusion that the country should therefore be governed by a Communist-Agrarian coalition aroused the full hostility of his opponents, and he was presently arrested in June 1947 and charged with plotting a military coup d'état.

His trial in Sofia in August resulted in a sentence of death. Representations from the British and U.S. governments asking for a suspension of the sentence were rejected, giving rise to serious protest in both countries. Petkov's appeal to the Bulgarian supreme court was dismissed. He was hanged in the Sofia central prison. (*See* also BULGARIA.)

**Phillimore, Godfrey Walter Phillimore,** 2ND BARON (Dec. 29, 1879–Nov. 28), British peer.
**Phillips, Oscar L.** ("SANTA CLAUS") (1890?–April 5), U.S. postal employee.
**Pickford, Sir Alfred Donald** (May 20, 1872–Oct. 7), British government official.
**Pierce, Henry J.** (Aug. 29, 1859–Aug. 7), U.S. utilities executive.

**Planck, Max** (April 23, 1858–Oct. 3), German physicist, was born at Kiel. His father, who was professor of constitutional law at Kiel university and later at Göttingen, was joint author of the Prussian civil code. At 17 he began his studies at Munich, and three years later attended courses at Berlin university, where his attention was first directed to thermodynamics by the teachings of Gustav Kirchhoff. After five years as an assistant at Munich he became professor of physics at Kiel; in 1889 he left Kiel for Berlin as professor extraordinarius, and in 1892 succeeded Kirchhoff in the chair of experimental physics, where he remained for the rest of his teaching life.

Planck shares with Albert Einstein the main credit for having initiated the revision of physical concepts which has been in progress during the 20th century. His great discovery of the quantum of action was announced in a paper "On the Distribution of Energy in a Normal Spectrum" to the German Physical society on Dec. 14, 1900, and from that time his reputation as a physicist grew until he was regarded as the *doyen* of international science. In 1912 he was appointed permanent secretary to the Prussian Academy for Science, and in the year 1913–14 was rector of Berlin university. The N prize for physics was awarded to him in 1918. In 1929, after having b foreign member for three years, he was awarded the Royal Society's C medal; and in 1930 he became president of the Kaiser Wilhelm society highest academic post in Germany.

He died at Göttingen. (See *Encyclopædia Britannica*).

**Plant, James Stuart** (Aug. 3, 1890–Sept. 7), U.S. psychiatrist.
**Plunket, Benjamin John** (Aug. 1, 1870–Jan. 27), Irish clergyman.
**Popham, Sir Henry Bradshaw** (Aug. 1, 1881–April 15), British colonial off
**Porter, Henry Hobart** (March 12, 1865–Feb. 9), U.S. public utility execu
**Post, Alice Thacher** (June 8, 1853–Feb. 2), U.S. editor, author.
**Pott, Francis Lister Hawks** (Feb. 22, 1864–March 7), U.S. educator.
**Potter, John Milton** (Oct. 22, 1906–Jan. 9), U.S. educator.
**Powell, John Benjamin** (April 18, 1886–Feb. 28), U.S. journalist.
**Powerscourt, Mervyn Richard Wingfield,** 8TH VISCOUNT (July 16, 1880–M 21), British peer.
**Preston, Frances Folsom (Cleveland)** (July 21, 1864–Oct. 29), widow of P dent Grover Cleveland.
**Prévité-Orton, Charles William** (Jan. 16, 1877–March 11), British histo
**Priest, George Madison** (Jan. 25, 1873–Feb. 18), U.S. educator.
**Puddester, Sir John Charles** (Oct. 4, 1881–April 22), Newfoundland gov ment official.

**Raczkiewicz, Wladyslaw** (Jan. 29, 1885–June 6), Polish statesman, was in Kutaisi, Georgia, the son of a distinguished lawyer. He took up law, g uating at Tarbu (Dorpat) university in Estonia, and shortly afterwar tablished a practice at Minsk. A conscript in the Russian army in 1914 served as lieutenant until the 1917 March revolution. He then took a l ing part in the organization of a Polish army on the eastern front. After restoration of Polish independence in 1918 he helped to organize the adr istration of the eastern provinces. In the Polish republic he was four ti minister of the interior, *voyevod* (governor) of the Wilno province (1926– and, until 1939, *voyevod* of the province of Pomorze. When President Ig Moscicki resigned at Kuty, on Sept. 17, 1939, he appointed Raczkiewic his successor. The latter, on reaching Paris on Sept. 30, 1939, formed a Polish government with Gen. W. Sikorski as prime minister. On June 1940, after the collapse of France, he went to London. As president of republic he showed extreme devotion to his constitutional duties and up the interests of the Polish nation with wisdom and dignity. When on Ju 1945, Great Britain and the United States recognized the new Polish gov ment formed in Moscow, Raczkiewicz refused to resign, declaring tha would do so only at the wish of a freely elected and representative P *sejm* (parliament). He died at Ruthin Castle nursing home, Wales.

**Raeburn, Henry Raeburn Macbeth** (Sept. 24, 1860–Dec. 6?), British artist.
**Ramsden, Walter** (1859?–March 26), British biochemist.
**Ramuz, Charles Ferdinand** (1878–May 23), Swiss novelist.

**Rayleigh, Robert John Strutt,** 4TH BARON (Aug. 28, 1875–Dec. 13), British ph icist, was the eldest son of the third Baron Rayleigh, the discoverer of arg He was educated at Eton and Trinity college, Cambridge, and for sev years did successful research work at the Cavendish laboratory there. 1908 he became professor of physics at the Imperial College of Science Technology, South Kensington. Giving up this post in 1919, he devoted rest of his life to research, carried out in the private laboratory at his hom Terling, Essex. His work covered a wide range, but his most important c tributions to science were made in studies in radioactivity and spectrosco Among the public offices to which he was elected by virtue of his emi position in British science were those of chairman of the executive commi of the National Physical laboratory, president of the 1938 meeting of British association, president of the Physical society (1934–36) and fore secretary of the Royal society (1929–34). He also served on the advis council of the Department of Scientific and Industrial Research. He die Terling.

**Read, Thomas Thornton** (Feb. 10, 1880–May 29), U.S. mining engineer, edu tor.
**Reed, Albert Alison** (May 5, 1866–Nov. 28), U.S. educator.
**Reed, Henry Morrison** (Sept. 16, 1880–Aug. 12), U.S. industrialist.
**Reeves, James Aloysius Wallace** (Feb. 8, 1892–March 7), U.S. ecclesiast educator.

**Reid, Ogden Mills** (May 16, 1882–Jan. 3), U.S. newspaper editor, was bor New York city, the son of Whitelaw Reid, editor in chief and part owne the *New York Tribune.* Young Reid studied politics, economics and law the University of Bonn and at Yale university, receiving his law degree fr the latter institution in 1907. The following year, he joined the staff of *Tribune* as a cub reporter, and after "learning the ropes" he was made m aging editor in 1912 and editor a year later. It was generally said that R insisted on one fundamental principle—that of writing news "straig without favouring either the paper's editorial or advertising policy. In 19 the *Tribune* acquired the *New York Herald* from Frank A. Munsey. T purchase price was said to have been $5,000,000. The two papers were fu and the new daily became the *New York Herald Tribune.* Reid was edi of the *Herald Tribune* and president of the Herald Tribune company. died in New York city.

**Reynolds, Thomas** (1879?–Jan. 25), British theatrical producer, director.

**Riach, Nancy** (1927–Sept. 15), Scottish swimming champion, was born Ap 6, 1927, in Motherwell. She first attracted attention when in 1938 at the of 11 she won a schoolgirls' championship at Motherwell, competing agai girls 4 years her senior. When she was 15 she broke her first Scottish reco and 2 years later 28 records; Scottish native, Scottish all-comers and Brit were standing to her credit. At the time of her death seven of her times mained unbeaten. Her remarkable successes were the result of a strict tra ing schedule. In 1947 she was granted leave from her teaching at the Han ton academy in order to train for the 100-yd. free-style European champio ship at Monte Carlo, Monaco, but while there she was taken ill with infant paralysis and died in her 21st year.

**Richardson, Ernest Gladstone** (Feb. 24, 1874–Sept. 5), U.S. clergyman.
**Richardson, James Parmelee** (May 29, 1878–March 24), U.S. educator.
**Riess, Ernst** (Nov. 19, 1865–June 12), U.S. educator.
**Rikhter, Andrei** (1871?–April 2), soviet plant physiologist.

**ins, Leonard H.** (April 2, 1877–June 24), U.S. writer.
**rts, Kingsley** (Dec. 29, 1893–Nov. 21), U.S. medical economist, surgeon.
**rtson, Alexander George Morison** (Sept. 3, 1867–Aug. 21), Hawaiian ist, government official.
**ison, John Wesley** (Jan. 6, 1866–May 30), U.S. Methodist bishop, ssionary.
**ison, Victor** (Aug. 16, 1886–Jan. 8), U.S. medical historian.

**guez, Manuel (Manolete)** (July 5, 1917–Aug. 29), Spanish matador, was n in Córdoba, Spain. The son of a bullfighter, he absorbed the atmosphere d drama of the arena from his earliest youth and was schooled in technique d tactics by his father. Manolete, as he was later known, began his prosional career at the age of 17, became a full-fledged matador at 19 and ore he was 30, was ranked by many experts as the equal of such famed tadors as Juan Belmonte and Joselito.

An individual stylist, Manolete disdained the dramatic flourish and oper- d with a minimum of movement in the *corrida*. Opinions on the persony of Manolete varied. Some sources decried his apparent arrogance and empted to minimize his technique; others maintained that his so-called ceit was merely confidence, which they described as the basic requisite of successful bullfighter. Manolete's popularity with the crowds was unestioned, however, as witnessed by the fortune he amassed (estimated at 000,000) during his 13-year career as a matador in Spain and Mexico.

He was wounded in a bullfight in Linares, Spain, by a ferocious Miura ll, who gored the matador in the thigh. Manolete died the following morn- from shock and loss of blood.

**ch, Nikolai Konstantinovich** (Oct. 10, 1874–Dec. 13), Russian-born Orialist, scientist and painter, was born in St. Petersburg, Russia, where he died law and painting. For his early career, see *Encyclopædia Britannica.* prolific artist, Roerich produced more than 3,000 paintings in his lifee, of which 1,006 are exhibited in the Roerich museum in New York city. her of his canvases are hung in the Louvre, the Victoria and Albert musein London and in other famous art galleries throughout the world. Also an Orientalist of considerable distinction Prof. Roerich excavated historic burials in Pondichéry, French India, in 1930 and headed the U.S. partment of agriculture's expedition into central Asia (1934–35) in search drought-resisting plants.

Among his publications, which have appeared also in Russian, Japanese d Spanish, are *Complete Works* (1914), *The Messenger* (1925), *Himalaya* 26), *Joys of Sikkim* (1928), *Altai Himalaya* (1929), *Heart of Asia* (1930), *alm of Light* (1931), *Fiery Stronghold* (1933) and *Gates into the Future* 36).

His death at Kulu, in the Punjab area of India, was announced in a distch from Bombay.

**, Angel H.** (1882–July 24), Argentine cancer specialist.
**rs, James Gamble** (March 3, 1867–Oct. 1), U.S. architect.
**no, Santi** (1875–Nov. 3), Italian jurist.
**ebeck, Arnold** (May 8, 1885–Nov. 14), U.S. sculptor.

**schild, Henri de,** Baron (July 26, 1872–Oct. 12), French physician, finanr and playwright, was born in Paris, the son of Baron James Rothschild. was one of the first Rothschilds to depart from the family tradition of ernational finance, to become a scientist and playwright.

In science, he devoted himself to a study of infantile diseases and later ployed part of his inheritance to set up free milk stations for French rkers. He also founded the Pierre Curie institute in Paris, to promote the re of cancer with radium.

As a playwright, he wrote under the pseudonym André Pascal, producing veral successful plays, notably *La Rampe* (1909), *Le Caducée* (1921) and *ritage* (1924). He also built the Théâtre Pigalle, one of the most modern d luxurious houses in Paris.

After World War I, the baron was active in the Zionist movement. He d to Brazil when the Germans invaded France in 1940, and the Vichy gime confiscated his extensive land and art holdings and revoked his ench citizenship. However, after Allied forces liberated France, the new vernment restored both his citizenship and property. He died at his tate, Castel Beau Cidre, in Jouxtens, Switz.

**ell, Ross Erastus** (Sept. 22, 1884–Sept. 6), U.S. marine corps officer.
**diger, William Carl,** (March 29, 1874–July 4), U.S. educator.

**brooke, James Henry** (July 29, 1870–Feb. 1), British clergyman, studied Midland and University colleges, Nottingham, and at Berlin and Halle iversities and received his M.A. degree from the University of London. r. Rushbrooke, who was minister of churches in Derby and London in 02, became Baptist commissioner for Europe in 1929. Thereafter, he was sociated with the Baptist World alliance, serving that group as its eastern cretary, 1925–28, general secretary, 1928–39 and president, 1939–47. uring his long connection with the Baptist Church, he travelled throughout e world, participated in many international conferences and organized Bapst World congresses in Toronto, 1928, in Berlin, 1934, and Atlanta, Ga., 39. Pledging himself to help eliminate religious repression, he made pernal appeals to heads of state in many lands in behalf of religious freedom. fter the war, he was named chairman of the Special Committee for Baptist econstruction in Europe. Dr. Rushbrooke was the author of *The Baptist ovement in the Continent of Europe* (1915), *Some Chapters of European aptist History* (1929); co-author of *Baptists in Europe* (1920) and editor of *he Peacemaker* (1908–14) and of *Goodwill* (1915–20). He died in Bristol, ngland.

**ell, John Henry** (Nov. 14, 1872–March 6), U.S. marine corps officer.
**ell, Thomas Hendrick** (April 12, 1885–April 5), U.S. surgeon, educator.

**, James Hugh** (Dec. 15, 1886–Nov. 23), U.S. prelate, was born in Indianolis, Ind. He studied at universities in the U.S. and Rome, receiving his .D. degree from the Roman academy in 1908 and his S.T.D. degree from e College of Propaganda in Rome a year later.

He was ordained in 1909, but not before he received a special dispensation om the Catholic authorities in Rome because of his extreme youth—he was ly 22 at the time. He then served as professor of psychology at St. Mary the Woods college, Indiana, from 1911 to 1921 and was executive secary of the National Catholic Welfare conference, 1920–28.

In 1922, he joined the Catholic university in Washington, D.C., as an instructor of philosophy, becoming a full professor in 1929 and serving as rector from the latter year until 1935 when he was appointed bishop of Omaha. Ten years later he became the first archbishop of Omaha.

Known as an able statesman, Msgr. Ryan went to South America in 1939 at the behest of Pres. Franklin D. Roosevelt to seek "a closer cultural relationship between the countries of this hemisphere."

Msgr. Ryan was the author of *A Catechism of Catholic Education* (1922), *An Introduction to Philosophy* (1924), *The Encyclicals of Pope Pius XI* (1927) and *The Peace Points of Pope Pius XII* (1942). He died in Omaha, Neb.

**Saint-Auban, Emile de Bruneau de** (June 19, 1858–May 2), French attorney.

**Salisbury, James Edward Hubert Gascoyne-Cecil,** 4th Marquess (Oct. 23, 1861–April 4), British politician, was educated at Eton and University college, Oxford. He entered the house of commons in 1885 as member for Darwen, Lancashire. He lost that seat in 1892, but from 1893 until 1903 represented Rochester, Kent. He served in the South African War, but in 1900 entered the government headed by his father, Lord Salisbury (3rd marquis), as undersecretary of state for foreign affairs. Upon his father's death in 1903, he succeeded to the marquisate and entered the house of lords and became lord privy seal.

He took an active part in defense of Conservative politics, opposing, in particular, the radical reform budget of 1909. During World War I, Lord Salisbury served in the army reaching the rank of major general. He was lord president of the council and deputy leader of the house of lords (1922–Jan. 1924). In Nov. 1924 Lord Salisbury returned to office as lord privy seal, and in 1925, became Conservative leader of the house of lords, a post he held until 1931. He served on the committee of imperial defense and also, in 1934, on the parliamentary joint committee on Indian constitutional reform. Lord Salisbury was succeeded by his eldest son, Viscount Cranborne. *See* also *Encyclopædia Britannica.*

**Salotti, Carlo,** Cardinal (July 25, 1870–Oct. 24), Italian prelate, was born in Grotte di Castro, Italy. Completing his ecclesiastical studies in the Roman seminary, he received degrees in civil and canonical law and in letters, and in ensuing years established a reputation as philosopher, author and lawyer.

In 1930, Mgr. Salotti was elevated to the titular bishopric of Palestrina and on Dec. 16, 1935, he was proclaimed a cardinal. His church titles included advocate of saints and consistorial lawyer, under-promoter of the faith, promoter general of the faith and prefect of the Congregation of Rites. He had promoted more than 100 causes for canonization, including that of Joan of Arc in 1920. On the other hand, he had also had the duty of marshalling all possible arguments against a proposed canonization so as to make sure that no unworthy candidate would receive sanctificatory approbation.

Cardinal Salotti founded many religious clubs, and was active in Catholic missionary work. He died in Rome.

**Sampson, Emma Speed** (Dec. 1, 1868–May 7), U.S. author.

**Sanatescu, Constantin** (1885–Nov. 8), Rumanian politician and army officer, served as military attaché in Paris and London in the '20s and was promoted to the rank of a general in 1935.

After the outbreak of World War II, Sanatescu was chief of the Rumanian delegation to Moscow in 1940. He then went into temporary eclipse until Aug. 26, 1944, when King Michael, confronted with the need of cleansing his government of pro-fascist elements before the arrival of the red army, arrested Marshal Antonescu and set up a government with Sanatescu as premier.

The soviet occupation authorities tolerated the Sanatescu regime until the autumn of 1944 when it complained that the premier had failed to carry out the armistice terms, to purge pro-fascist elements and to restore movable soviet property taken by Rumanians during their occupation of the Ukraine.

Under Russian pressure, Sanatescu reformed his cabinet on Nov. 4, 1944, and placed Communists in key posts. His government was short-lived, lasting only 28 days, and he resigned Dec. 2. He died in Bucharest.

**Satterlee, Herbert Livingston** (Oct. 31, 1863–July 14), U.S. lawyer.
**Saunders, Margaret Marshall** (April 13, 1861–Feb. 15), Canadian author.
**Schoellkopf, Paul Arthur** (March 7, 1884–Sept. 30), U.S. utilities executive.
**Schultz, John Richie** (Dec. 12, 1884–Aug. 11), U.S. educator.
**Schwarz, Franz Xaver** (Nov. 27, 1875–Dec. 14?), German politician.
**Scott, Duncan Campbell** (Aug. 2, 1862–Dec. 18), Canadian writer.
**Scott, John Adams** (Sept. 15, 1867–Oct. 26), U.S. educator.

**Scott, William Berryman** (Feb. 12, 1858–March 29), U.S. geologist and educator, was born in Cincinnati, O., a great-great-grandson of Benjamin Franklin on his mother's side. After receiving his A.B. degree from Princeton university in 1877, he spent several years studying abroad, returning to Princeton in 1883 as an assistant in geology. The following year, he became professor of geology and palaeontology, a post he held for 46 years.

One of the leading vertebrate palaeontologists in the United States, Dr. Scott was a recognized authority on fossil mammals and travelled to such remote areas as Zululand and Patagonia in search of fossil remains. He was awarded numerous medals from geological societies abroad as well as in the United States for his achievements and continued his research after his retirement from Princeton in 1930 as professor emeritus. Dr. Scott was the author of *An Introduction to Geology* (1897), *A History of Land Mammals in the Western Hemisphere* (1913), *The Theory of Evolution* (1917) and *Physiography* (1922). He died at Princeton, N.J.

**Scrymgeour, Edwin** (July 28, 1866–Feb. 1), British prohibitionist.
**Seitz, George Albert** (March 13, 1897–Oct. 24), U.S. naval officer.
**Seldte, Franz** (June 29, 1882–April 1), German politician.

**Selfridge, Harry Gordon** (Jan. 11, 1864–May 8), British businessman, was born at Ripon, Wis. For his early career, see *Encyclopædia Britannica.* Retiring as an executive of Marshall Field & Co. in Chicago after amassing a fortune, he went to London in 1906 and there organized the firm of Selfridge & Co., Ltd., which eventually became the largest and most successful department store in England. By the time he retired from active management of Selfridge's in 1939, he had developed his company into a massive organization employing 13,000 people and operating a $50,000,000 chain of department stores in the principal shopping centres of Britain. Selfridge, who acquired British citizenship in 1937, died in London.

**Senn, Thomas J.** (Dec. 21, 1871–Feb. 11), U.S. naval officer.
**Severinghaus, Willard Leslie** (Jan. 28, 1882–Aug. 28), U.S. physicist.
**Shankland, Sherwood Dodge** (April 6, 1874–May 27), U.S. educator.
**Shaw, Albert** (July 23, 1857–June 25), U.S. editor, writer.
**Shaw, William Edward** (July 2, 1869–Feb. 22), U.S. educator.
**Sheehan, Robert Francis, Jr.** (Dec. 5, 1879–April 16), U.S. psychiatrist.
**Shelley, Harry Rowe** (June 8, 1858–Sept. 12), U.S. composer, organist.
**Shepard, James Edward** (Nov. 3, 1875–Oct. 6), U.S. educator.
**Shiel, Matthew Phipps** (July 21, 1865–Feb. 17), British novelist.
**Shonle, Horace Abbot** (May 14, 1892–Feb. 24), U.S. research chemist.
**Shutts, Frank Barker** (Sept. 11, 1870–Jan. 7), U.S. newspaper publisher, lawyer.
**Simpson, W. S.** (1870?–March 28), Canadian grain expert.
**Sinnock, John Ray** (July 8, 1888–May 14), U.S. designer, engraver.
**Sladen, Douglas (Brooke Wheelton)** (Feb. 5, 1856–Feb. 12), British novelist, biographer.

**Smith, Gipsy Rodney** (March 31, 1860–Aug. 4), British evangelist, was born in England of parents of gipsy stock. He had no formal schooling, was mostly self-educated and developed his fluent command of English by constant reading of the Bible. At the age of 16, he became a convert to Methodism and developed into an impassioned and persuasive evangelist.

Smith roamed the world on his evangelical missions, exhorting sinners of all races and creeds on five continents to eschew their ways of evil for the good life. He preached in barns and meadows, warehouses and tents, churches and halls and attracted huge congregations; some of the throngs that attended his sermons were said to have numbered more than 100,000 persons.

At one time in his career, he was associated with Gen. William Booth but broke with the latter, who eventually developed his mission into the Salvation Army.

As "special missioner" of the National Free Church council (1897–1912), Smith started the evangelical journeys on the "sawdust trail" that led him twice around the world. During World War I, he spent three and one half years among British troops on the western front for which service he received the Order of the British Empire. He continued his roving evangelical assignments until he was well past 80.

He was the author of several works, including an autobiography, *Gipsy Smith, His Life and Work* (1906); *As Jesus Passed By* (1905); *Your Boys* (1918); *Real Religion* and *Evangelistic Talks* (1929); and *The Beauty of Jesus* (1932).

He died on board the vessel "Queen Mary."

**Smith, Harold Dewey** (June 6, 1898–Jan. 23), U.S. government official.
**Smith, Harriet Lummis** (?–May 9), U.S. novelist.
**Smith, June C.** (March 24, 1876–Feb. 7), U.S. jurist.
**Smith, Marion** (Nov. 16, 1884–Sept. 9), U.S. lawyer.
**Smith, Roy E.** (1883?–Feb. 11), U.S. soil chemist, educator.
**Snell, Earl Wilcox** (July 11, 1895–Oct. 28), U.S. politician.
**Snow, William Josiah** (Dec. 16, 1868–Feb. 27), U.S. army officer.
**Sowell, Ingram Cecil** (Aug. 3, 1889–Dec. 21), U.S. naval officer.
**Spaulding, Oliver Lyman** (June 27, 1875–March 27), U.S. army officer.

**Speer, Robert Elliott** (Sept. 10, 1867–Nov. 23), U.S. clergyman, was born at Huntingdon, Pa. A graduate of Princeton university, 1889, he entered its Theological seminary the following year, but before completing his studies was named to the secretaryship of the Presbyterian Board of Foreign Missions. He held that post until his retirement in 1937 after which he devoted his remaining years to writing.

Although a layman, he rose to top position in the church—that of moderator—in 1927 and was a leading authority on foreign missions. He travelled to posts in the near east and the Orient and spent three years in South America.

Dr. Speer was the author of *Missions and Modern History* (1904), *Christianity and the Nations* (1910) and *Race and Race Relations* (1924). He died in Bryn Mawr, Pa.

**Spencer, John Oakley** (1858?–May 24), U.S. educator.

**Spilsbury, Sir Bernard Henry** (1877–Dec. 17), British pathologist, was educated at Manchester grammar school and Magdalen college, Oxford; he received his medical training at St. Mary's hospital, London, and after qualifying in 1905 became a research worker under Sir Almroth Wright. Lectureships held by him included those in morbid anatomy and histology at St. Bartholomew's hospital, London, and in medicine and toxicology in the London School of Medicine for Women and University College Hospital Medical school, London. He was knighted in 1923.

Spilsbury's contributions to the solution of crime by scientific methods gained him a world-wide reputation; his first important appearance as a scientific witness for the crown took place in 1910, when his examination of evidence played a vital part in the notorious Dr. Hawley Crippen case. In 1922 the new office of pathologist to the home office was created for him and he figured prominently in many murder trials and other famous cases until the end of his life; in 1934, the year of his retirement, he became honorary pathologist. He was found dead in his laboratory in the department of pharmacology, University college, London.

**Stanton, Charles Spelman** (March 13, 1868–July 31), U.S. editor.
**Starbuck, Edwin Diller** (Feb. 20, 1866–Nov. 18), U.S. educator, author, philosopher.
**Stein, Leo** (1872?–July 29), U.S. author, art critic.
**Stephen, Campbell** (March 29, 1884–Oct. 24), British Labourite M.P.
**Stephenson, Sir Henry Kenyon** (Aug. 16, 1865–Sept. 20), British industrialist, educator, politician.
**Stewart, Robert Wright** (March 11, 1866–Feb. 24), U.S. corporation executive, industrialist.
**Stoddard, Henry Luther** (Oct. 7, 1861–Dec. 13), U.S. journalist.
**Stone, Julius Frederick, Sr.** (June 1, 1855–July 25), U.S. manufacturer.
**Stradbroke, George Edward John Mowbray Rous,** 3RD EARL OF (Nov. 19, 1862–Dec. 19), British army officer.

**Street, Julian** (April 12, 1879–Feb. 19), U.S. novelist, essayist and gastronomical authority, was born in Chicago, Ill. Educated at Ridley college, St. Catharines, Ont., Canada, he joined the staff of the *New York Mai* *Express* in 1899 and was the paper's dramatic editor, 1900–01. He we Europe in 1902 and spent many years in France, shuttling betwee Riviera and Paris. He became renowned as an authority on French coo and wines. As several of his books were devoted to popularizing the Fr gastronomical arts, the French government bestowed upon him the Le of Honour for his efforts in this direction. Street was elected to the Nat Institute of Arts and Letters in 1924 and the next year (1925), he awarded an O. Henry Memorial prize of $500 for one of his short sto He spent the latter years of his life in the United States and was a me of the board of directors of a wine importing firm. Among his work *Abroad at Home* (1914), *Mysterious Japan* (1921), *Rita Coventry* (19 *Where Paris Dines* (1929), *Wines* (1933), *Men, Machines and Morals* (1 and, in collaboration with Booth Tarkington, *The Country Cousin.* S died at his home in Lakeville, Conn.

**Streeter, Edward Clark** (1875?–June 17), U.S. medical authority, curat
**Stubbs, Sir Reginald Edward** (Oct. 13, 1876–Dec. 7), British colonial off
**Suardo, Count Giacomo** (Aug. 25, 1883–May 19), Italian fascist politicia
**Sullivan, Daniel Giles** (1882–April 8), New Zealand commerce minister.

**Sultan, Daniel Isom** (Dec. 9, 1885–Jan. 14), U.S. army officer, was bor Oxford, Miss. After graduating from the United States military acad in 1907, he joined the army, spending most of his 40 years in service a engineering officer. He served in the Philippines, 1916–17, where he he to build the defenses at Corregidor. During most of World War I, he stationed in Washington, but toward the close of the conflict was assig to the A.E.F. general staff in France. After his return, he attended Command and General Staff school and later served in Nicaragua w over a ten-year period (1921–31), he surveyed and inspected the route a projected canal. During this time, he also was a member of the boar engineers for rivers and harbours at Washington, 1926–29, and in 193 was named engineer-commissioner for the District of Columbia.

At the start of World War II, Gen. Sultan was commander of the division at Camp Shelby, Miss., later becoming chief of the 8th army co In Jan. 1944 he was named deputy commander under Gen. Joseph Stilwell in the China-Burma-India theatre of war. The following Octo he was made commander in chief of the Burma-India theatre—one of commands that had made up the former C.B.I. One of his chief contr tions in that theatre was his speed-up of supplies to China by land, r and air transport.

Lt. Gen. Sultan (promoted Sept. 1944), was made inspector genera the army after his return to the United States in 1945. He die Washington, D.C.

**Summerlin, George Thomas** (Nov. 11, 1872–July 1), U.S. diplomat.
**Surles, Alexander Day** (Aug. 14, 1886–Dec. 6), U.S. army officer.
**Sussman, Otto** (Jan. 31, 1879–Feb. 3), U.S. mining executive.
**Sutton, Sir George Augustus** (Sept. 21, 1869–Nov. 7), British newspa executive.
**Tai Hsu** (1889–March 17), Chinese Buddhist leader.
**Talbot, Benjamin** (1864–Dec. 16), British inventor.

**Tanguay, Eva** (1878–Jan. 11), U.S. vaudeville and musical comedy star, was born in Marbleton, Que., Canada, went to the U.S. with her parent an early age. An expressive child, she showed a talent for acting and tained her first footlight role at the age of eight in *Little Lord Fauntle* She later went "through the mill," acting in variety, stock troupes and m cal comedies and by the time she was 20, she was regarded as a finis comedienne. At the turn of the century, Miss Tanguay shocked Victo audiences with her daring costume—or lack of costume—and her ris songs, and by 1910 she was an established and popular star on Broadw Her earnings were phenomenal but she lost her fortune during the stock m ket crash of 1929. Simultaneously her health and vision failed, bringing career to an abrupt end. She spent the last two decades of her life a virt recluse, bed-ridden and mostly forgotten. She died at her Hollywood, Ca cottage.

**Tate, Mavis Constance** (1893?–June 5), British M.P.
**Taussig, Joseph Knefler** (Aug. 30, 1877–Oct. 29), U.S. naval officer.
**Taverner, Percy A.** (1876?–May 9), Canadian ornithologist.

**Tello, Julio César** (April 11, 1880–June 4), Peruvian scientist, was bor Huarochiri, Peru. He received his doctor of medicine degree from the U versity of San Marcos in Lima in 1909, a master of arts degree in 1911 fr Harvard, and a doctor of science degree from San Marcos in 1918 and t studied at the University of Berlin.

Dr. Tello, who was a professor of anthropology successively at the U versity of San Marcos and the Catholic University of Lima, was also edi of the review *Inca*, official organ of the archaeological museum of the U versity of San Marcos. He was director of the Peruvian Archaeologi museum, honorary curator of Andean archaeology at Harvard university a a fellow of the Royal Anthropological institute of London.

Internationally known for his studies and discoveries of prehisto Andean civilization, Dr. Tello was co-leader of a scientific expedition to Pisco region of Peru in 1925. During its trip to the Paracas peninsula, expedition found evidences of a civilization existing in Peru at least 1,0 years before Christ.

Representative for Peru to many international scientific congresses, Tello was a recognized authority on Peruvian history. Among his works *Introducción a la historia antigua del Perú* (1921) and *Antiguo Perú* (192 He died in Lima.

**Thaw, Harry Kendall** (Feb. 11, 1871–Feb. 22), U.S. millionaire.
**Thomas, Albert Ellsworth** (Sept. 16, 1872–June 18), U.S. author.
**Thomas, Cecil Vincent** (Sept. 17, 1892–Nov. 28), U.S. educator.
**Thomas, William Isaac** (Aug. 13, 1863–Dec. 5), U.S. sociologist.
**Thomson, Robert Boyd** (Sept. 16, 1870–July 31), Canadian botanist.
**Thomson, Sir William** (Dec. 31, 1856–Aug. 6), South African educator.
**Thwaites, Sir William** (June 9, 1868–June 22), British army officer.
**Timmermans, Felix** (1886–Jan. 24), Belgian writer.

**Tiso, Josef** (1887–April 18), Slovakian politician and ecclesiast, becam Catholic priest in 1909, joined the Slovak autonomy movement after Wo War I and became one of the leading figures in the profascist Hlinka gua

When the Prague government granted autonomy to the Slovaks after the unich pact in the fall of 1938, Father Tiso was made prime minister of ovakia. Ousted from this post on March 10, 1939, he was reinstated within ortnight by the Germans.

After the reich severed Slovakia from the body politic of Czechoslovakia d gave it complete independence, Tiso was elected first president of the w state, Oct. 26, 1939.

During World War II, he allied Slovakia with Germany, instituted repres- e measures against left-wing and liberal elements among both Czechs and ovaks and ordered Slovak troops to help Germans in quelling the partisan rising in the spring of 1944.

Arrested by U.S. 3rd army troops on May 21, 1945, he was turned over to e reconstituted Czechoslovak government which ordered his imprisonment await trial as a traitor.

After a long trial, which opened in Bratislava Dec. 2, 1946, Tiso was found ilty of: conspiring against the Czechoslovak republic, suppressing demo- atic freedom and establishing a fascist dictatorship, warring against Poland d the soviet union and committing war crimes. He was sentenced to ath.

In its 215-page verdict, the national court made a clear distinction be- een Tiso's political and religious activities and made no statements in- lving the church in his guilt.

He was hanged in the Bratislava jail.

**orov, Kosta (Konstantin)** (July 13, 1889–March 17?), Bulgarian diplomat- , writer.
**r, Sidney** (April 28, 1874–Feb. 12), U.S. actor.
**ns, Charles B.** (1861?–Feb. 20), U.S. authority on drug addiction.
**dway, Allen Towner** (Sept. 16, 1867–Feb. 16), U.S. politician.
**dwell, Aaron Louis** (Dec. 23, 1866–June 24), U.S. biologist, educator.
**, Leonardus Jacobus Anthonius** (1876–March 5), Netherlands banker.
**chi, Tito** (May 1, 1864–Feb. 12), Italian papal diplomat.

**nan, Martha Ellen** (Nov. 25, 1852–July 26), mother of Harry S. Truman, rd president of the United States, was born on the Parrish farm, the site of hich is now part of Kansas City, Mo. She was the daughter of Solomon oung, a freighter who ran emigrant trains along the Overland trail.

In 1863 Solomon Young and his entire family were exiled by Jayhawkers om their homestead because of their Confederate sympathies and sent to e Platte country. A year after the end of the Civil War, the Youngs were rmitted to return to their farm.

Solomon Young became a wealthy freighter during the reconstruction era d Martha therefore was spared many of the hardships associated with the e of western frontierswomen. She was an excellent horsewoman and a od dancer and attended the Baptist College for Women in Lexington, Ky. e married John Anderson Truman on Dec. 28, 1881, and went with her sband to Lamar, Mo., where he became a stock trader and ran a large rm.

Her son, Harry, was born on the Lamar farm. She had two other chil- en, a son, J. Vivian, and a daughter, Mary Jane. The children were eply attached to their mother and it was said that Harry Truman, when set by difficulties during his political career, often sought and abided by r counsel.

She took a critical view of his acceptance of the vice-presidential nomina- on in 1944, complaining that it was a shame that he was abandoning his job senator when he was doing so well at it.

After he succeeded to the presidency in 1945, Mrs. Truman was quoted as ying: "I never wished for Harry to be president some day as all American others are supposed to do. I never even thought he might be considered r vice-president."

Mrs. Truman held positive convictions which she would utter frankly at terviews. After President Truman was sworn in, his mother visited the hite House. It was reported that when her son offered to let her sleep in braham Lincoln's bed, she exclaimed: "I wouldn't sleep in the bed that at man used."

Mrs. Truman never fully recovered from the effects of a fractured hip that e suffered during a fall in her home in Feb. 1947. Although the casts had een removed by May, her condition became worse and she died at her home Grandview, Mo., as the president was flying to her bedside.

**y, James (Jim)** (June 3, 1891–June 22), U.S. author, was born on June 3 ear St. Marys, O., one of six children. Orphaned in his childhood, he lived in n asylum until he was 11 and spent the next seven years as a farmhand. At he age of 18, Tully took to hoboing. In the next decade he was successively prize fighter, circus roustabout, tree surgeon and general handyman at any b that would pay the price of a meal.

Despite his lack of formal schooling, he read voraciously, became self- ducated, wrote verse, some of which was published when he was 20, and orked as a reporter for an Akron newspaper. His first novel, *Emmett awler* (1922), was well received by critics. In this and in succeeding books, ully established a reputation as one of the minor leaders of the realistic chool, better than most but not quite measuring up to the so-called "giants f the age"—Theodore Dreiser, Ernest Hemingway, John Steinbeck and ames Farrell.

His principal failing, according to critics, was his lack of subtlety. Never- heless, by the close of the twenties, Tully was an established novelist and a rosperous scenario writer. His books made money but were not attuned to he new stream of political and social developments ushered in by the New eal era and his works were virtually ignored by the incoming younger gen- rations. Making his home in Hollywood in the later years of his life, he was omewhat of a celebrity in the film capital and his truculent but always renchant comments on the state of the country and the literary world, as ell as his propensity for mauling Hollywood actors, made good newspaper opy.

Among his works are *Beggars of Life* (1924), *Circus Parade* (1927), *Shad- ws of Men* (1929), *Blood on the Moon* (1931), *Men in the Rough* (1933), *A ollywood Decameron* (1937), *Children of Thieves* (1939), *Men I Remember* 1940), *Biddy Brogan's Boy* (1941), *A Dozen and One* (1942) and *Rave afferty* (1943).

He died in Hollywood, Calif.

**bay, Gabriel** (1901–Nov. 17), Colombian diplomat.
**el, Zelig** (July 30, 1890–March 12), U.S. Yiddish writer.

**Tyrrell, William George Tyrrell, 1st Baron** (Aug. 17, 1866–March 14), British diplomatist.
**Underwood, Elmer** (1860?–Aug. 17), U.S. photographer.
**Vacaresco, Helene** (1866–Feb. 17), Rumanian writer.
**Valentin, R. J. M. Veit** (1885–Jan. 12), German historian.
**Van Boeijen, Hendrik** (May 23, 1889–March 30), Netherlands politician.
**Vanderpool, Frederick William** (May 8, 1877–Feb. 14), U.S. composer.
**Vannest, Charles Garrett** (June 7, 1880–May 23), U.S. author, educator, historian.
**Varenne, Alexandre** (?     –Feb. 16), French politician, diplomat.
**Velloso, Pedro Leão** (Jan. 13, 1887–Jan. 16), Brazilian diplomat.

**Victor Emanuel III** (Nov. 11, 1869–Dec. 28), king of Italy 1900-1946, was born at Naples, the son of King Humbert I and Margherita of Savoy-Genoa. He ascended the throne of Italy on Aug. 9 and 11, 1900, after the assassination of King Humbert. See *Encyclopædia Britannica.*

After the coming to power of fascism in 1922, King Victor Emanuel was overshadowed by Benito Mussolini, the duce. It was not until July 25, 1943, that the king broke away from this subjection when, after a vote of no confidence, moved by Count Dino Grandi, was passed in the fascist grand council against Mussolini, the king dismissed Mussolini and had him arrested. He appointed Marshal Pietro Badoglio as prime minister in his place. Negotiations were opened secretly with the Allies, and the signing of an armistice on Sept. 3 was publicly announced on Sept. 8. On the same day the king fled by car from Rome, just as the Germans were entering the city, to reach southern Italy under the protection of the Allied armies.

His reign came to an end on June 5, 1944, the day after the liberation of Rome, when he transferred his royal powers to his son Prince Humbert as lieutenant governor of the realm; but he retained the title of king of Italy until May 9, 1946, when he formally abdicated, three weeks before a referendum which turned Italy into a republic. His exile was spent in Egypt, and it was in a suburb at Alexandria that he died from congestion of the lungs.

**Villeneuve, Jean-Marie Rodrigue, Cardinal** (Nov. 2, 1883–Jan. 17), Canadian prelate, was born at Sacré-Coeur de Montreal, Que., the son of a French-Canadian shoemaker. Studying for the priesthood, he was ordained in 1907 at the age of 23—the earliest age under which ordainment is permissible under Catholic canon law. He taught morals, philosophy, liturgy and canon law at the University of Ottawa, at which institution he served as professor of philosophy from 1907 to 1913 and of theology from 1913 to 1920.

In 1930 Mgr. Villeneuve was named bishop of Gravelbourg in Saskatchewan, and the following year he became archbishop of Quebec. Two years later (1933) he was elected to the College of Cardinals.

Soon becoming a power in Canadian politics because of his role as the spiritual leader of the country's more than 5,000,000 Catholics, he served on several occasions as mediator in labour-management disputes. More frequently, he took a leading role in pressing anticommunist activities in Quebec; he was also a stanch foe of the Social Credit movement. The cardinal was strongly opposed to "absolute freedom of the press" insofar as that concept furnished "revolutionaries" with an opportunity to air their ideas. He also objected to woman suffrage on grounds that it would destroy family life and paternal authority.

Mgr. Villeneuve was a noninterventionist before World War II, but after Canada's entry into the conflict, he changed his stand, urging French Canadians to enlist in the armed forces and register for the draft. He died in Alhambra, Calif.

**Volpi di Misurata, Count Giuseppe** (Nov. 19, 1877–Nov. 16), Italian industrialist and politician, was born in Venice, Italy. For his early career, see *Encyclopædia Britannica.* One of Italy's wealthiest prewar industrialists and financiers, Count Volpi was a member of the Italian senate, a one-time minister of finance and president of the fascist chamber of manufacturers under Mussolini.

Volpi left the government in 1928 to attend to his private fortunes and the following year he helped organize the European Electric corporation, a combine of U.S., Swiss and Italian interests.

Shortly after the Axis conquest of Yugoslavia in 1941, Volpi served Mussolini as president of the Italian-Croatian economic mission. His enthusiasm for Mussolini waned, however, under successive Allied military triumphs and in the spring of 1943, he was suspected of plotting with Italian industrialists to break with Hitler and conclude a separate peace. When these rumours reached the ears of Mussolini, the duce ousted Volpi from the chamber of manufacturers. Volpi fled to Switzerland where he lived until a week before his death. He returned to Rome to enter a nursing home and died there.

**Volstead, Andrew J.** (1860–Jan. 20), U.S. politician and lawyer, was born in Goodhue county, Minn. Educated at St. Olaf's college and Decorah institute, he was admitted to the bar in 1884. He practised law in Granite Falls, Minn., where he was, at one time, president of the board of education, town attorney and mayor. Volstead was Republican representative to congress from Minnesota from 1903 to 1923. An unobtrusive back-bencher, he was catapulted into the national limelight as the author of the Volstead prohibition act, which was passed over a presidential veto in Oct. 1919 and became the 18th amendment to the constitution. (It was repealed in 1933.) He lost his campaign for re-election to the house in 1922 and after expiration of his term returned to private practice in Granite Falls where he died. (See *Encyclopædia Britannica.*)

**Walker, Meriwether Lewis** (Sept. 30, 1869–July 29), U.S. army officer.
**Wall, Frank Jerome** (May 8, 1886–Nov. 18), U.S. railway executive.
**Walsh, Arthur** (Feb. 26, 1896–Dec. 13), U.S. politician.

**Walsh, David Ignatius** (Nov. 11, 1872–June 11), U.S. politician, was born in Leominster, Mass. Graduated in 1893 from Holy Cross university with an A.B. degree and from Boston University Law school four years later, he entered politics and built up a following in the predominantly Irish Catholic areas of industrial Massachusetts. He served as lieutenant governor of the state in 1913 and as governor in 1914 and 1915. In 1918 he was elected to the United States senate. Although defeated by the Republican landslide of 1924, he was elected two years later to fill a two-year vacancy and was re-elected in 1928, 1934 and 1940. During the national elections of Nov. 1946, he was submerged in another Republican landslide, losing to Henry

Cabot Lodge, his Republican opponent, by about 325,000 votes.

During his first term, Walsh's senatorial opponents dubbed him “Ireland's senator” because of his vigorous support of the Irish independence movement. Later Walsh regarded himself as a progressive and friend of organized labour. While he supported Roosevelt during his first two terms, he frowned upon the third term and looked upon the fourth term with acute distaste. He favoured wage-and-hour legislation, but denounced the president's supreme court reorganization plan. A noninterventionist in the prewar years, Walsh battled the administration on foreign policy, lend-lease and trade of 50 over-age destroyers for British bases. He died in Boston, Mass.

**Walsh, Edward J.** (1877–March 22). U.S. clergyman, educator.
**Warfield, William** (Dec. 4, 1891–March 16), U.S. engineer, geologist.
**Washburn, Ives** (May 24, 1887–Feb. 5), U.S. publisher.
**Watson, Hugh Hammond,** (Nov. 10, 1885–May 24), U.S. consular official.
**Watt, Robert J.** (July 16, 1894–July 24), U.S. labour leader.
**Wauchope, Sir Arthur Grenfell** (March 1, 1874–Sept. 14), British army officer.
**Weaver, Rufus Washington** (June 3, 1870–Jan. 31), U.S. clergyman.
**Webster, Benjamin** (June 2, 1864–Feb. 26), British actor.
**Weed, Clarence Moores** (Oct. 5, 1864–July 18), U.S. naturalist, educator.
**Weller, Ovington E.** (Jan. 23, 1862–Jan. 5), U.S. politician.
**Wells, Harry Edward** (1874?–May 24), U.S. chemist, educator.
**White, William Charles** (Sept. 3, 1874–Aug. 11), U.S. tuberculosis authority.

**Whitehead, Alfred North** (Feb. 15, 1861–Dec. 30), British mathematician and philosopher, was born at Ramsgate, Kent, and was educated at Sherborne school and Trinity college, Cambridge, where he was elected a fellow in 1887 and in due course became senior mathematical lecturer. In 1903 he was elected a fellow of the Royal society. After he had been made lecturer in applied mathematics and mechanics at University college, London, in 1911, and later reader in geometry, he was appointed professor of applied mathematics at the Imperial College of Science, London, in 1914 and held the post until he accepted the chair of philosophy at Harvard university in 1924. This he held until 1937 and made the United States his home. He was president of the Mathematical association in 1915–16, and of Section A of the British association in 1916. In 1922 he was the first recipient of the James Scott prize of the Royal society of Edinburgh; in 1925 he was awarded the Royal society's Sylvester medal and in 1930 the Butler medal of Columbia university; he was elected a fellow of the British academy in 1931. In 1945 he received the Order of Merit.

Whitehead's main interest and most important work lay where the fields of mathematics, logic and philosophy converged. His first important work was *A Treatise on Universal Algebra* (1898). In collaboration with Bertrand (later Earl) Russell he published *Principia Mathematica* in three volumes (1910–13), an outstanding work in the history of logic and of mathematics. Among other works he published *The Principle of Relativity* (1922), giving an alternative interpretation to that of Albert Einstein, and worked out his philosophy in *Science and the Modern World* (1926), *Process and Reality* (1929), *Adventures of Ideas* (1933), extending it in *Religion in the Making* (1926), *Nature and Life* (1934) and *Modes of Thought* (1938). His philosophical thought was remarkable and important for its reconciliation of metaphysics with science. He died at Cambridge, Mass.

**Whitfield, Arthur** (Oct. 13. 1868–Jan. 31), British dermatologist, educator.
**Whitman, Charles Seymour** (Aug. 28, 1868–March 29), U.S. lawyer, politician.
**Whitmore, Frank Clifford** (Oct. 1, 1887–June 24), U.S. educator, scientist.
**Wickenden, William Elgin** (Dec. 24, 1882–Sept. 1), U.S. educator.

**Wilkinson, Ellen Cicely** (1891–Feb. 6), British politician, was the daughter of a Manchester cotton operative, and worked her way by scholarships to Manchester university, where she took an M.A. degree. She became a schoolteacher, but soon took to political journalism, joining the Independent Labour party in 1912. In 1913 she became an organizer of the National Union of Women's Suffrage Societies and later of the workers in the distributive and allied trades. During World War I she endorsed the pacifist attitude of the Independent Labour party. She joined the Communist party on its formation in Britain in 1920, went to Moscow in 1921 and in 1923 was elected a Communist member of Manchester city council. She had left the Communist party when, in 1924, she was first elected to parliament as a Labour member for the Middlesborough East constituency, which she held until 1931. She returned to parliament in 1935 as Labour member for Jarrow. In 1936 she headed the Jarrow unemployed in their hunger march to London. During World War II she joined Winston Churchill's government as parliamentary secretary, first to the ministry of pensions and later to the ministry of home security. In the latter capacity, she did much to develop and improve air raid protection and the fire-watching organization. In Clement Attlee's Labour government, she became minister of education. She was not only an able debater in the commons, but also proved a capable administrator. She even achieved success as a legislator, in securing, in 1938 as a private member, the passage of a useful act to curb abuses in hire-purchase sales contracts.

**Willard, Frederic Wilson** (April 16, 1881–Aug. 11), U.S. metallurgist.
**Williams, Clement Clarence** (Feb. 21, 1882–Feb. 20), U.S. educator, engineer.
**Williams, Sir John Fischer** (Feb. 26, 1870–May 17), British jurist.
**Willshire, Sir Gerard (Arthur) Maxwell-** (Aug. 21, 1892–April 1) British actor.
**Wilson, Carroll Atwood** (May 12, 1886–June 27), U.S. Lawyer, industrialist.

**Wilson, James (Jimmy)** (July 23, 1900–June 1), U.S. baseball player and manager, was born in Philadelphia, Pa. He joined the Philadelphia Phillies baseball team in 1923 as a catcher and played with the team until 1928 when he was traded to the St. Louis Cardinals. He returned to Philadelphia as a manager in 1934 and went to Cincinnati as a player-coach five years later (1939). The hero of the 1939 world series in which the Cincinnati Reds beat the Detroit Tigers, Wilson was given, on the strength of this performance, the job of managing the Chicago Cubs in late 1940.

As his record with the Chicago team was only mediocre, he was retired in May 1944, and he returned to Cincinnati as coach. Later he entered the citrus produce business in Florida.

He died in Bradenton, Fla.

**Wilson, Lachlan Chisholm** (July 11, 1871–April 9), Australian army officer.

**Winant, John Gilbert** (Feb. 23, 1889–Nov. 3), U.S. diplomatist and government official, was born in New York city. He studied history at Princeton under Woodrow Wilson and after graduating from the university, he became a teacher at a prep school in Concord, N.H.

In 1917, Winant was elected to the New Hampshire house of repres tives, but upon entry of the U.S. into World War I, he left the legislatu join the army. In 1921, he was elected to the state senate and two y later, he was returned to the state lower house. In 1925, Winant was ele governor of the state. His tenure ended in 1926, but he was elected aga 1931, and held office for two consecutive terms.

During the second period of his governorship, Winant acted with ma vigour to neutralize the effects of the depression. His administration in duced old-age benefits, minimum wages and emergency relief and was pecially active in taking measures to prevent farm and home foreclosu

In 1935, Pres. Franklin D. Roosevelt appointed the liberal New Eng Republican to head and organize the newly-created Social Security bo Later Winant became assistant director and then director of the Internat al Labour Office.

In 1941, Roosevelt named Winant as U.S. ambassador to Great Britai position that Winant held throughout World War II. Pres. Harry S. man in Jan. 1946 appointed him to the additional post of U.S. representa on the U.N. Economic and Social council. Winant later relinquished ambassadorial post to devote all of his time to his U.N. duties.

An account of his tenure as ambassador and an evaluation of the Un Nations was contained in his work, *Letter from Grosvenor Square,* which peared about 15 days after Mr. Winant shot and killed himself in his ho at Concord, N.H.

**Winship, Blanton** (Nov. 23, 1869–Oct. 9), U.S. army officer.
**Wissler, Clark** (Sept. 18, 1870–Aug. 25), U.S. anthropologist.
**Wood, John Wilson** (Aug. 4, 1866–Aug. 7), U.S. missionary.
**Woodruff, Lorande Loss** (July 14, 1879–June 23), U.S. biologist, educator.

**Woolley, Mary Emma** (July 13, 1863–Sept. 5), U.S. educator, was born South Norwalk, Conn. Educated at Brown university—the first woma receive an A.B. degree there (1894)—she joined the Wellesley college facu in 1895, becoming head of the department of biblical history and literat four years later; in 1900, Miss Woolley was made president of Mt. Holy college, a post she held until her retirement 37 years later.

An energetic and militant pacifist, Miss Woolley was appointed by P Herbert Hoover as one of the U.S. delegates to the Geneva Disarmament c ference in 1932. At the time she declared: “Women rush in where diplom fear to tread and do a lot to make this world a better place to live in.” was reappointed to the Geneva post by Pres. Franklin D. Roosevelt in 19

Miss Woolley wrote a number of books, including *Early History of Colonial Post Office* (1894) and *Internationalism and Disarmament* (19 and she was co-author of *A Hundred Years of Mt. Holyoke College* (194 She died at Westport, N.Y.

**Woolworth, Charles Sumner** (Aug. 1, 1856–Jan. 7), U.S. merchant, was b in Rodman, N.Y. When his brother, Frank W. Woolworth, first concei the idea for a “five-and-ten-cent” store, the two went into business in L caster, Pa., where Charles Woolworth became manager of the first su establishment to bear the Woolworth name. The venture did not fare w and the brothers moved to Scranton, where in 1881 they established anot store on a partnership basis. Charles Woolworth bought out his broth interests and branched out with a chain of stores in New York, Pennsylva and Maine. In 1912, his company and several other chain businesses, w a total of nearly 600 stores, were incorporated in New York as the F. Woolworth Co., with Frank Woolworth as president and Charles as vi president. The latter succeeded to the presidency after his brother's dea in 1919, and expanded the Woolworth chain to approximately 2,000 sto across the country and in Canada and Cuba. At the time of his death he honorary chairman of the board of directors; he had retired as board ch man in 1944. Woolworth died in Scranton, Pa.

**Worcester, David** (1908?–June 20?), U.S. educator.

**Wright, Sir Almroth Edward** (Aug. 10, 1861–April 30), British bacteriolog studied at Trinity college, Dublin, where he took his degree in 1882. main field of study was then modern literature. He later turned to law, having accepted a medical travelling prize from Dublin university, he stud medicine at Leipzig, Strasbourg and Marburg and took his M.B., B.Ch. a M.D. in Dublin in the 1880s. He became a demonstrator of pathology Cambridge university in 1887, and went to Sydney university as profes of pathology in 1889. After his return to England in 1892, he became p fessor of pathology at the army medical school at Netley, a post he held ten years. During this period, he started the study of antityphoid vacci and together with Surgeon Major D. Semple, began a series of success inoculations against typhoid. Despite opposition from professional quart his method of immunization was tested on a large scale during the Sou African war when among the troops inoculated the typhoid rate was less th one-sixth of that recorded among troops not so inoculated. Further tests India proved conclusive, the typhoid and mortality rates among unprotec troops being about 11 to 12 times higher than among those inoculated. 1902 Wright became pathologist at St. Mary's hospital, London, and la directed its institute of pathology and research. He was also appoin professor of pathology at London university. During World War I, he consulting physician to the British forces and co-operated with the Belg and French army medical services in practically stamping out typhoid fe in the Allied armies. At St. Mary's, Sir Alexander Fleming, the discovere penicillin, was one of Wright's outstanding pupils. Wright held many tinctions and honorary degrees, both British and foreign. Apart from n erous scientific papers, he was the author of a sharp attack on female suffr published in 1913 under the title *The Unexpurgated Case against Wom Suffrage.* (*See* also *Encyclopædia Britannica.*)

**Wright, Arthur Davis** (March 24, 1885–May 10), U.S. educator.
**Wright, James Harris** (Feb. 21, 1907–Sept. 28), U.S. foreign service officer
**Yaw, Ellen Beach** (Sept. 18, 1869–Sept. 10), U.S. concert singer.
**Zeligowski, Lucien** (1865?–July 10?), Polish army officer.
**Zivkovitch, Petar** (1879–Feb. 3), Yugoslav politician, army officer.

**Obstetrics:** *see* GYNAECOLOGY AND OBSTETRICS.

**Occupational Therapy for the Wounded:** *see* MEDIC REHABILITATION OF DISABLED VETERANS.

## cupied Areas, Administration of.

In military-occupied
as, the year 1947 was marked by a gradual transition from
cern with ordinary control matters to a consideration of
ors affecting long-range plans for the future of Germany
Japan. In Austria and Korea, the United States govern-
nt endeavoured unsuccessfully to reach an agreement for
hdrawal of all occupation forces in compliance with previous
dges to the government and people of liberated countries.
e military occupation of the Venezia Giulia area of Italy all
came to an end, with only a small detachment of about
oo U.S. army specialists remaining on the Italian mainland
l in the international city of Trieste.

ack of agreement on a peace treaty for Germany as well as
ure to agree on a date for the withdrawal of troops from
stria and Korea reflected the larger area of disagreement be-
en the United States and the Union of Soviet Socialist Re-
blics which dominated nearly all developments in foreign
irs during the year. Nowhere was the sharp conflict be-
en U.S. and Russian interests more pronounced than in the
upied areas, where unity at the top diplomatic and military
els was an indispensable prerequisite for successful imple-
ntation of immediate and long-range policies.

ailure to reach an agreement with the Soviet Union on
nomic unification of Germany, as provided by the Potsdam
t of 1945, led the United States and Great Britain to effect
economic merger of their zones, effective Jan. 1, 1947.

No progress was made, however, toward the treatment of all
rmany as an economic unit. In Japan, occupation was con-
ed almost exclusively to U.S. troops, with administrative
thority vested in the Supreme Commander for the Allied
wers (S.C.A.P.) and policy-making responsibility in the Far
stern commission (F.E.C.). Korea remained divided at the
th parallel of latitude, with soviet troops in the north and
S. army personnel in the south. Austria continued under
adripartite occupation by U.S., Russian, British and French
ops, although the country was treated as a single entity with
popularly elected government.

Two meetings of foreign ministers, convened to deal specifi-
lly with German and Austrian affairs, were held during the
ar. The first, at Moscow from March 10 to April 24, ended
almost complete disagreement. The second began in London
Nov. 24, and ended Dec. 15 with no further progress. Efforts
itiated by the United States in 1947 for a Japanese peace
eaty conference were thwarted by disagreements among the
wers as to membership in the conference and voting pro-
dure. No peace treaty was required for Korea, but a decision
the simultaneous withdrawal of troops from that country
s pending in the United Nations.

Swift progress was made in both Germany and Japan in the
osecution of top-ranking war leaders. American prosecutors,
ngly and often in combination with representatives of other
cupying powers, pressed their cases against German and Jap-
ese war lords.

The United States government continued its policy of re-
rning to German, Japanese, Austrian and Korean hands the
llest measure of control over their own affairs consistent with
e safety and security of the Allied Powers. Accordingly, the
ar saw broad expansion of local administrative power in all
cupied areas.

Operating under an appropriation of $600,000,000 for the
48 fiscal year (July 1, 1947–June 30, 1948),—supplemented
a deficiency appropriation of $340,000,000—the state de-

RMAN CAMERA MANUFACTURER, whose output was blocked in 1947 for
k of lenses from the Russian zone Zeiss works while his turrets (above)
umulated awaiting freer zonal trade movement

partment and the army were able to assure a modest standard of living only with the assistance of foreign relief funds. Food and housing conditions in Germany ranged from adequate in the rural areas to poor in the bombed-out urban developments. The U.S. zone of Austria, poor in indigenous food sources, was sustained only by foreign relief from the United States and the United Nations Relief and Rehabilitation administration, which was discontinued. The civilian population of Japan was not able to attain an adequate standard of living from its own resources. In Korea, a serious food shortage existed, requiring emergency assistance from the United States.

A brief analysis of the progress in U.S. administration of each occupied territory during 1947 follows.[1]

**Germany.**—From the beginning of the occupation, United States authorities had recognized the importance of re-education of the German people to the ways of democracy. This was particularly true as regards German youth, who had been subjected to nazi propaganda after 1933. In the absence of four-power agreement, the United States government undertook in 1947 a broad expansion of opportunities for Germans in culture, education and public information.

The extension of educational opportunities was limited in 1947 by the shortage of teachers as well as school textbooks. The closing of the U.N.R.R.A. university at Munich was also harmful. However, at a meeting of the Laenderrat Committee of Culture and Politics, it was agreed that universities throughout the zone would accept equitable portions of the former U.N.R.R.A. student body. For adults, the chief medium for mass education was the *Volkshochschule,* which opened branch schools in many sectors of the zone, thus permitting Germans by the thousands to learn the democratic processes familiar to Americans.

In the United States zone, 18 universities and their academic equivalents provided higher education for 45,000 German students during 1947. A total of 1,482 secondary and vocational schools were attended by 525,000 students.

The United States also set up youth centres in all large cities of its zone in an attempt to encourage German youngsters to join in organized recreation. Competitive sports continued to be a favourite youth outlet. In Hesse, a two-week track and field meet, the largest since World War II, attracted more than 2,500 athletes.

In addition, several international youth meetings were held with a view to decreasing the isolation of German youth. Two world-wide conferences were attended by delegates from German youth groups. The first, the World Christian Youth conference in Oslo, was attended by 15 official delegates from all 4 zones of Germany. The second, a Socialist Youth conference in Denmark, was attended by seven members of Die Falken, a Hesse group.

The year was marked by a return of many newspapers and magazines to German control and the licensing of several additional publications. As of Aug. 31, 48 German-language newspapers were licensed in the U.S. occupied areas. Military government officials reiterated continuously throughout the year the policy that German editors would be responsible for the contents of their newspapers. In keeping with this policy military government revoked the publishing license of three German newspapers, mainly because their actions and policies were not in keeping with the mission of U.S. military government. These newspapers were the *Frankfurter Neue Presse* and the *Frankfurter Rundschau,* both of Frankfurt, and the *Nordsee Zeitung* of Bremerhaven. The United States government continued to translate books and periodicals for dissemination Germany. The total number of book and pamphlet titles p lished from May 8, 1945, to Aug. 31, 1947, was 3,894; the nu ber of available current periodicals rose to 315 at the end 1947.

In August, arrangements were completed for the exchange programs and personnel between Swiss radio stations and U.S.-controlled stations. These arrangements, initiating resum tion of international cultural relations in accordance with July directive, also included provisions for German radio c respondents to cover special assignments in Switzerland a Swiss correspondents to reciprocate on assignments in Germa

As of Aug. 31, a total of 425 performances of music by U.S. composers had been presented throughout Germany. this total, 311 performances were presented in the United Sta zone. The number of theatres in the United States zone r during 1947 to 1,050, with a total seating capacity of appro mately 380,000.

In October, the U.S. military governor announced a new formation drive would be put into effect in the U.S. zone aim at countering soviet propaganda.

In a step intended to further the democratic reorientation the German people, the United States government on March announced a policy permitting the exchange of certain categor of persons between the United States and Germany. The a rangement of projects and the selection of individuals in accor ance with this policy was made to include specific needs in t fields of education and religion and in fields important to form lation of public opinion.

**Japan.**—On March 27 a policy decision of the Far Easte commission for revision of the Japanese educational syste stated that "special emphasis should be placed on the teachi of the sanctity of the pledged word in all human relations and advised that the revision of the system should be primari the responsibility of the Japanese themselves. The policy stat ment outlawed teaching of state Shintoism and placed the le sons of democracy as the objective of the new system.

In 1947, approximately 19,000,000 students attended abo 40,000 schools of all levels. More than 500,000 teachers we gradually learning to make the adjustment from the authorit tive methods of classroom management to the democrat process of teaching. New editions of textbooks were printe A nation-wide program of screening all educational personn was set up by the Japanese government under supervision S.C.A.P. and F.E.C.

The School Education law passed by the diet on March provided for the extension of compulsory, free education on step-by-step basis from six to nine years for all Japanese chi dren. It was planned to make the eighth year compulsory star ing in 1948 and the ninth year as soon as practicable from th standpoint of availability of schoolrooms, teachers and fund

The S.C.A.P. directives of 1946 calling for removal of r strictions on religious freedom were implemented during 194 with transfer to shrines and temples of title to state-owne lands for religious purposes. The number of Christian churc members was estimated at about 500,000, but the number Christian sympathizers rose to an estimated 2,000,000.

The large task of freeing all media of public informatio from national government domination and restriction continue throughout 1947. Professional, civic and governmental agencie were encouraged by S.C.A.P. to work out co-ordinated and continuing information programs.

The number of daily newspapers increased from 53 at th close of World War II to 155 on Aug. 31. About 2,000 newspapers and journals of tabloid format—including dailies, semi weeklies, weeklies—were published.

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[1] The sections which follow deal only with social and educational phases of the history of occupied territories in 1947. For political and economic developments, *see* AUSTRIA; GERMANY; JAPAN; KOREA. *See* also FOREIGN MINISTERS' CONFERENCES; PEACE TREATIES; PRISONERS OF WAR; REFUGEES; WAR CRIMES.

Continued technical and programming assistance was given Broadcasting Corporation of Japan, and a number of new grams patterned on U.S. techniques were instituted. Mobile jection units continued to exhibit educational films to weekly liences averaging 179,000 people, a fivefold increase over the rage weekly audience during 1946. The S.C.A.P. Informa- n library in Tokyo continued to make available to Japanese ders 3,000 reference books, 10,000 pamphlets, 500 current iodicals and 17 newspapers, all in English.

During 1947 the incidence of communicable diseases had, in ny cases, been reduced to the lowest level in Japanese his- y. Under occupational supervision, about 20,000 sanitary ms operated in the country, and 120,000 Japanese were lead- in urging community sanitation. Approximately 700 health ntres were established in the country to handle public clinical es.

The United Nations committee commented favourably on the ective control of narcotics in Japan.

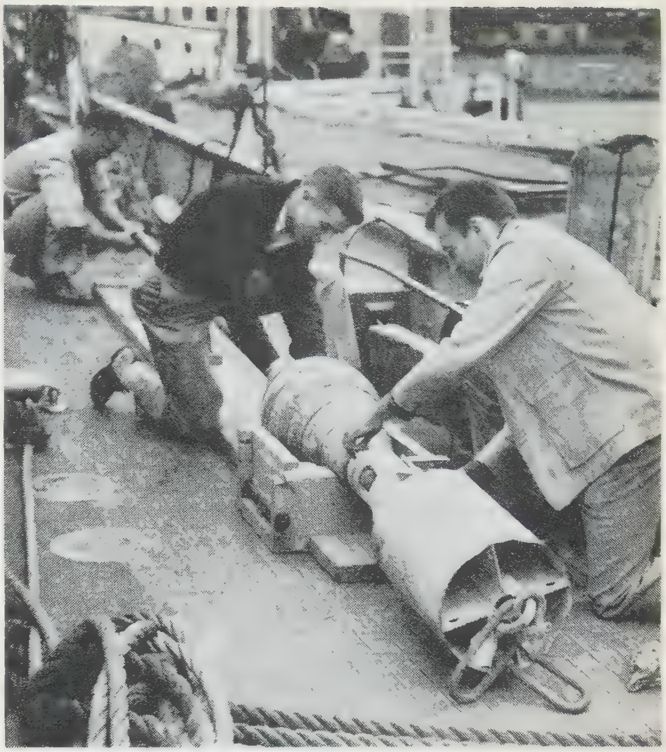
**Austria.**—The task of re-educating the Austrian people to mocracy was largely entrusted to the Austrian government, pervised by the United States representative on the Allied uncil. In addition, the United States government announced March 31 a policy permitting the interchange of certain egories of persons between the United States and Austria. der the policy a carefully selected group of Austrian special- s in educational, religious and cultural work was to be per- tted entry into the United States for brief periods of observa- n and training. Similarly, U.S. personnel would be permitted go to Austria to work with agencies and individuals in the rementioned fields.

Previously, on March 16, the United States government had nounced a policy on exchanges of cultural materials between e United States and Austria.

**Korea.**—One of the most important problems faced by ad- nistrators of Korea in 1947 was the incidence of disease. The adequacies of public health services under the Japanese, the stwar disruption, floods and lack of trained personnel and edical equipment posed grave problems for occupation author- es. The U.S. and Korean officials, with limited facilities at eir disposal, improved the general condition of the civilian pulation somewhat, but the incidence of many noncommuni- ble diseases such as malaria was still increasing as 1947 ended.

From the outset of military occupation, U.S. officials were nfronted with the gigantic task of remodelling the entire orean educational system, which had suffered seriously from panese control. It was estimated that only 25% to 30% of e Korean people were literate in 1945. Subsequently, U.S. ilitary government broadened educational opportunities for oreans, encouraged the study of Korean language and culture orbidden under Japanese rule) and provided in-service train- g in various occupations.

In 1947 the military government continued its task of re- acing Japanese language textbooks with those written in orean. Maximum use was made of existing school facilities ith the result that more Koreans were attending school than at y time in the history of the country. As a further step, the nited States government created in Korea an education in- itute staffed by outstanding U.S. educational and vocational aining specialists. This followed a survey in June by a five- an mission on the need for revamping the information and lucational administration of Korea. Other recommendations the mission were studied by the state department and the my. (C. E. Sn.)



"CORING TUBE" being assembled by members of a U.S. expedition to the mid-Atlantic ridge in 1947. On entering the ocean bed, the tube was filled with sediment from which scientists hoped to learn more of the geological history of the earth

**Oceanography.** Several major oceanographic expeditions of 1947 had as their primary purpose studies of marine sediments and the geology of the ocean basins. Under the direction of Hans Pettersson, the Swedish auxiliary schooner "Albatross" collected extremely long cores of bottom sediments from the Mediterranean, the North Atlantic and the tropical Pacific.

An intensive study of the Gulf of Mexico was undertaken by the U.S. research vessel "Atlantis," which also carried out a geophysical reconnaissance of a section of the mid-Atlantic ridge, south of the Azores.

Interest in submarine geology had been greatly stimulated by development of new instruments. Recording sonic-sounding machines showed details of the bottom topography even from the greatest depths. Improvements in coring tubes made it possible to secure samples ten metres or more in length; since the rate of sedimentation is relatively slow in midocean, these samples reflected changes in conditions over several million years. Radioactive and magnetic means of dating the sediments were devised, while the study of the foraminifera contained in the cores revealed the marked changes in climate or of the depth of the water that may have occurred.

The fact that through radio navigational techniques the position of a vessel could now be accurately determined relative to shore stations as much as 1,500 mi. away greatly facilitated many types of oceanographic research. For the first time from a moving vessel it became possible to gain a good measure of the strength and direction of the surface currents. Frequent accurate fixes also greatly improved the usefulness of all sonic soundings and made it practical to observe the shapes of bottom structures such as submerged sea mounts and canyons. In Norway and France trials were in progress on the use of sonic instruments for locating fish.

(*See* also MARINE BIOLOGY.)

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*och Vitterhetssamhälles Handlingar, Sjätte Följden,* series B, vol. 5 (Gothenburg, Sweden). (C. O'D. I.)

**Office of Education, U.S.:** *see* EDUCATION; FEDERAL SECURITY AGENCY.

**Office of Price Administration:** *see* PRICE ADMINISTRATION, OFFICE OF.

**Ohio.** A north central state of the United States, popularly known as the "Buckeye state." It officially became a state of the union on Feb. 19, 1803. Area 41,222 sq.mi., including 100 sq.mi. of water; pop. (1940) 6,907,612, of whom 2,294,626 were rural and 4,612,986 urban; native white 6,047,265, foreign-born white 519,266, Negro 339,461, other races 1,620. Capital, Columbus (306,087). Other cities of more than 100,000 were Cleveland (878,336), Cincinnati (455,610), Toledo (282,349), Akron (244,791), Dayton (210,718), Youngstown (167,720) and Canton (108,401). In 1944 the bureau of the census estimated the population of the state at 6,836,667.

**History.**—Thomas J. Herbert, Republican of Cleveland, was inaugurated as the 56th governor of Ohio on Jan. 13, 1947. Other elected state officers were: lieutenant governor, Paul M. Herbert; secretary of state, Edward J. Hummel; treasurer, Don H. Ebright; attorney general, Hugh S. Jenkins.

The 97th Ohio general assembly met in regular session from Jan. 6 to June 30, 1947. In that period it enacted 245 new laws and approved submission to the electorate of three proposed amendments to the state constitution. Among the laws were those requiring co-operatives to pay the same corporation franchise tax as corporations for profit; allocating sales tax revenue to local government fund; permitting banks to close on Saturdays; authorizing municipalities to acquire property for parking lots; increasing pay of election officials; authorizing acceptance from the federal government of Fletcher General hospital at Cambridge as a state mental institution; extending jurisdiction of the state highway patrol; authorizing state subsidy to local pension systems and fixing pensions of policemen and firemen; increasing benefits under state teachers' retirement system; providing for county and township zoning of unincorporated areas; changing the automobile licence fee to a flat rate of $10.

At the general election Nov. 4, 1947, Ohio voters approved four amendments to the state constitution. One called for the payment of about $300,000,000 in bonuses to veterans of World War II. The others restricted the expenditure of gasoline and motor vehicle taxes to the construction of highways, increased the terms of probate judges from four to six years and increased the number of members on the State Sinking Fund commission.

A special session of the general assembly met Dec. 4 and 5 and enacted 12 measures requested by Gov. Herbert. The most important of these granted pay increases to state employees, transferred $20,000,000 to the soldiers' bonus fund, gave the welfare department an additional $6,000,000, authorized cities and counties to submit welfare and operating levies under a 60% vote requirement at either primary or general elections and corrected an error in the distribution of gasoline tax funds so the state highway department could use the funds for construction and maintenance of roads.

**Education.**—In 1947 Ohio had 3,400 elementary schools with an enrolment of 702,650 and a teaching staff of 22,001; 1,122 secondary schools, with an enrolment of 335,823 and a teaching staff of 15,154; 122 junior high schools, with an enrolment of 69,984 and a teaching staff of 2,594; 1,000 kindergarten classes, with an enrolment of 37,836 and a teaching staff of 658. Clyde Hissong was state director of education in 1947.

Ohio has six state universities: Ohio State university at Columbus, Ohio university at Athens, Kent State university at Kent, Miami university at Oxford, Bowling Green State university at Bowling Green and Wilberforce university at Wilberforce.

**Social Insurance and Assistance, Public Welfare and Related Program** The average number of recipients of general relief in Ohio in 1947 19,076 and total relief granted was $9,378,256. The average numbe ceiving aid for the aged was 121,506 and they received a total of $ 646,401; aid to dependent children, 9,274 cases, receiving a tota $7,360,829; aid to the blind, 3,243 cases, receiving a total of $1,407, Estimated weeks of unemployment compensated in 1947 were 2,374, and the benefit payments were estimated at $43,890,000.

Ohio has 22 mental hygiene institutions with an average daily pop tion in 1947 of 30,165, 4 penal institutions with an average daily p lation of 7,699 and 2 industrial schools with an average daily popula of 1,137.

The total cost of operating and maintaining the institutions under department of public welfare in 1947 was $21,678,049. The directo the department was Charles L. Sherwood.

**Communications.**—Ohio had 87,021.57 mi. of highways in 1947 out of municipalities. Of this total, 16,167.87 mi. were classified as s 29,012.09 mi. as county and 41,841.61 mi. as township. Total state penditures on highways in 1947 were $62,150,000. The director of department of highways was Murray D. Shaffer.

The state had 8,400 mi. of railroads, 300 airports and landing fie 4,115 mi. of airlines in operation within its boundaries and 2,112, telephones.

**Banking and Finance.**—There were 432 state and private banks in O with deposits (Oct. 6, 1947) of $3,787,016,830 and resources of 067,280,409. There were 241 active national banks in the state w deposits (June 30, 1947) of $3,064,693,000 and resources of $3,292,6 000. State-chartered savings and loan associations numbered 498 w total resources (June 30, 1947) of $1,076,972,544. There were 127 eral savings and loan associations with total assets (estimated as of D 31, 1947) of $560,500,000.

The state budget for the 1947–48 biennium was $687,341,606. though state revenues reached an all-time high, the general assem approved the expenditure of all those funds plus about $90,000,000 the $100,000,000 surplus with which it began the year. A large port of the money went for capital improvements. Sales tax revenue in 1 went to a new record high of $129,288,000.

**Agriculture.**—The total harvested acreage of principal crops in Ohio 1947 was 10,157,000; in 1946, 10,601,000. Total cash receipts from fa marketings in Ohio in the Jan.-Oct. 1947 period were $846,719,000 compared with $669,386,000 in the same period of 1946. The 1947 m keting receipts consisted of $615,919,000 from livestock and products a $230,800,000 from crops.

As in much of the rest of the country, an excess of rainfall in spring months delayed planting in Ohio with the result that a sma number of acres were planted and the yield per acre was poorer, dr ping from 49 bu. to 41 bu. in the case of corn. Yields are indicated Table I.

**Table I.—*Leading Agricultural Products of Ohio, 1947 and 1946***

| Crop | 1947 | 1946 | Value, 1947 |
|---|---|---|---|
| Corn, bu. | 138,826,000 | 178,409,000 | $319,299,0 |
| Wheat, bu. | 49,028,000 | 48,522,000 | 140,710,0 |
| Oats, bu. | 19,058,000 | 62,235,000 | 23,822,0 |
| Barley, bu. | 390,000 | 502,000 | 702,0 |
| Rye, bu. | 510,000 | 289,000 | 1,198,0 |
| Buckwheat, bu. | 651,000 | 340,000 | 1,275,0 |
| Popcorn, lb. | 6,240,000 | 27,495,000 | 190,0 |
| Hay, tons | 3,602,000 | 3,895,000 | 66,637,0 |
| Soybeans, bu. | 17,575,000 | 16,254,000 | 65,027,0 |
| Tobacco, lb. | 22,710,000 | 21,060,000 | 11,014,0 |
| Sugar beets, tons | 158,000 | 234,000 | 1,900,0 |
| Maple syrup, gal. | 160,000 | 80,000 | 645,0 |
| Apples, bu. | 3,038,000 | 2,350,000 | 8,354,0 |
| Peaches, bu. | 1,020,000 | 553,000 | 2,800,00 |
| Pears, bu. | 229,000 | 135,000 | 549,00 |
| Grapes, tons | 15,400 | 12,500 | 2,310,00 |
| Cherries, tons | 2,400 | 2,300 | 669,00 |
| Potatoes, bu. | 5,460,000 | 7,560,000 | 8,418,0 |

**Manufacturing.**—The total value of manufactures in Ohio in 1939 w $4,584,665,659, total employment 686,089 and total wages and salari paid $1,033,426,673. No census of manufactures had been taken after 19 but the Ohio bureau of unemployment compensation reported that betwe Jan. 31, 1945, and Jan. 31, 1946, 4,039 employers established new bus nesses or expanded old ones. In that period the number of employe covered by unemployment compensation increased from 50,544 to 54,58

**Mineral Production.**—The total value of mineral production in Ohio 1946, exclusive of pig iron, ferroalloys and grindstones, was $243,637,0 as compared with $196,663,000 in 1945. A law enacted by the gener assembly in June requiring strip coal mining companies to level mine areas and plant them with trees, shrubs and grass, was opposed by a doze companies who sought to have it declared unconstitutional. (P. BY.)

**Table II.—*Principal Mineral Products of Ohio, 1946 and 1945***

| Mineral | Value, 1946 | Value, 1945 |
|---|---|---|
| Pig Iron | $240,218,956 | $258,959,8 |
| Bituminous coal | 100,675,000 | 92,911,0 |
| Coke | 69,357,225 | 70,381,8 |
| Natural gas | 29,400,000 | 24,490,0 |
| Clay and clay products | 45,842,837 | 22,657,6 |
| Stone | 19,069,169 | 13,966,7 |
| Lime | 12,926,310 | 11,693,6 |
| Ferroalloys | 8,884,960 | 11,166,24 |
| Sand and gravel | 11,105,652 | 7,985,0 |
| Cement | 13,293,126 | 7,356,27 |
| Petroleum | 7,910,000 | 7,240,0 |
| Salt | 4,160,011 | 3,997,75 |

**io State University.** This institution of higher education is located at Columbus, O. rmally established as a land-grant institution in 1870, it ened its doors on Sept. 17, 1873, to a student body of 17. e university admits both women and men. It has ten col- es: agriculture, arts and sciences, commerce and administra- n, dentistry, education, engineering, law, medicine, pharmacy d veterinary medicine; a graduate school; and eight special ools: aviation, fine and applied arts, home economics, jour- ism, music, nursing, optometry and social administration. aduate work is offered through the doctor of philosophy de- e. Appropriations of $18,641,000 were approved for construc- n in 1947–48 of a medical centre ($8,000,000), new physics, itation and central service buildings and others, as well as eral new laboratories and additions to existing buildings. The iversity operates on a four-quarter plan, enabling most stu- nts to complete their studies in three calendar years. (For sta- tics of endowment, enrolment, faculty, library volumes, etc., UNIVERSITIES AND COLLEGES.) (H. L. B.)

**l:** *see* PETROLEUM.

**ls and Fats, Vegetable and Animal:** *see* VEGETABLE LS AND ANIMAL FATS.

**klahoma.** A west south central state, admitted as the 46th state, Nov. 16, 1907. The name "Oklahoma" is om the Choctaw Indian words meaning "red people" and was st applied to the Indian territory in 1866. The popular name ooner state" was from the term "sooner" used in referring to person who entered and staked a claim sooner than the law owed when the first public lands in the Indian territory were ened by the run for homesteads, April 22, 1889. Area 69,283 .mi., including water surface, of which 387 sq.mi. are in 188 tificial lakes of more than 10 ac. in size and 71,000 farm ponds less than 10 ac. Pop. 2,336,434 (1940), of which approxi- ately 62% was rural. Approximately 87% was white, 7% egro, 4% Indian, 2% foreign-born. On July 1, 1944, the bu- au of census estimated the civilian population of Oklahoma at 64,679. Oklahoma City (1940 census) (204,424), the capital, d Tulsa (142,157) are the two largest cities.

**History.**—State officers during 1947 included the following ll candidates of the Democratic party elected for 4-year terms Nov. 1946): Roy J. Turner, governor; James E. Berry, lieu- nant governor; Wilburn Cartwright, secretary of state; A. S. J. haw, state auditor; Mac Q. Williamson, attorney general; John . Connor, state treasurer; Oliver Hodge, state superintendent public instruction. Legislation enacted by the 21st state legis- ture (bicameral system, convened Jan. 1947) included reor- nization of the state highway department and creation of a ate highway commission of eight members; disorganization of rtain rural school districts whereby 1,408 school districts were olished and annexed to those adjoining or near at hand; a unicipal airports act; and a mental health law creating a state epartment of mental health and providing for the appointment f a medical director to have charge of all state mental institu- ons.

**Education.**—The total enrolment in Oklahoma public schools (term of 46–47) was 508,697 pupils (elementary and high school), with 18,192 achers. The cost of maintaining elementary and secondary schools in e state was approximately $55,000,000. State institutions of higher arning included the University of Oklahoma (Norman), the Oklahoma gricultural and Mechanical College (Stillwater), the Oklahoma College r Women (Chickasha), an agricultural and mechanical college (Good- ell), a Negro university (Langston) and institute of technology Veatherford) and five colleges primarily for teacher training (Ada, va, Durant, Edmond, Tahlequah). There were 18 two-year junior lleges recognized by the state board of education, including 6 state- vned junior colleges, 1 military academy (Claremore) and 4 inde- ndent junior colleges with church affiliations. There were also six dependent senior colleges with church affiliations.

**Social Insurance and Assistance, Public Welfare and Related Programs.**—On Jan. 1, 1948, the department of public welfare reported 96,278 persons receiving old-age assistance with an average of $42.43 each per month; 22,964 families receiving aid, with an average of $36.30 per family, for 57,038 dependent children, and 2,578 blind persons receiving an average of $42.79 each per month. State-supported hospitals, eleemosynary, penal and reformatory institutions were two tuberculosis sanatoriums, nine hospitals (including six mental and one annex), two orphanages, three schools for deaf and blind, four schools of correction, one penitentiary and one subpenitentiary.

**Communication.**—The Oklahoma department of highways spent during the period Jan. 1, 1947, to Nov. 30, 1947, for contract construction $17,983,951.82 and, in addition, for maintenance contract work $2,445,118, making a total of $20,429,069.82 for roadway construction during the 11-month period. The total public open-road mileage in the state for 1947 was approximately 100,000 mi., and the highway department was responsible for a highway system of 10,138 mi. Railroad and electric mileage approximated 6,170 mi., not including sidings.

**Agriculture.**—Total harvested acreage of crops in 1947 was 13,722,000 ac. compared with 13,290,000 ac. in 1946 (figures revised in Dec. 1947) and 12,981,000 ac. in the 10-yr. (1936–45) average. An all-time record wheat crop, plus increase in the dollar value of other major crops in 1947, made possible the highest farm value of all agricultural products in the history of Oklahoma. The state department of agriculture estimated the total value of principal crops, livestock, poultry and dairy products at $794,656,000, an increase of $129,813,000 over the 1946 estimate of $664,843,000.

*Leading Agricultural Products of Oklahoma, 1947 and 1946*

| | 1947 | 1946* |
|---|---|---|
| Wheat, bu. | 104,734,000 | 88,262,000 |
| Corn, bu. | 22,896,000 | 25,882,000 |
| Oats, bu. | 33,276,000 | 24,780,000 |
| Peanuts, lb. | 151,125,000 | 117,130,000 |
| Broomcorn, tons | 11,200 | 15,000 |
| Grain sorghums (forage and silo), tons | 900,000 | 1,439,000 |
| Grain sorghums, bu. | 5,181,000 | 7,314,000 |
| All hay, tons | 1,819,000 | 1,490,000 |
| Cotton, bales | 325,000 | 262,000 |

*Revised Dec. 1947 by U.S. department of agriculture.

**Manufacturing.**—Total pay rolls for covered employment in Oklahoma for the four quarters beginning Oct. 1, 1946, and ending Sept. 30, 1947, were $149,713,390, with a monthly average of 57,712 persons employed. In addition to the manufacture of petroleum by-products, the manufacture of lumber, cement and products from glass sands and the printing business in Oklahoma were big industries.

**Mineral Production.**—Minerals produced in Oklahoma include petroleum, natural gas, natural gasoline, liquefied petroleum gases, asphalt, zinc, lead, coal, stone, sand and gravel, clay and salt. The state corporation commission reported 140,334,201 bbl. of petroleum produced in the year ending Dec. 1, 1947. Approximate figures for 1947 production of other minerals in the state include 440,000,000 gal. natural gasoline and products, 420,000,000,000 cu.ft. natural gas, 18,000 tons lead concentrate, 103,000 tons zinc concentrate, 3,050,000 tons coal. The total estimated value of all minerals in the state for 1947 was $420,000,000.

(M. H. W.)

**Old-Age Insurance:** *see* SOCIAL SECURITY.

**Old-Age Pension:** *see* RELIEF; SOCIAL SECURITY. *See* also under various states.

**Oleomargarine:** *see* MARGARINE.

**Olives:** *see* FRUIT.

**Oman and Muscat (Masqat):** *see* ARABIA.

**Ontario.** One of the two central provinces of Canada, Ontario was admitted to the union in 1867. The area is 412,582 sq.mi., with 12% fresh water; pop. (1941) 3,787,655; (1946 est.) 4,189,000. The chief cities (1946 assessor's est.) are Toronto, the provincial capital (696,555); Hamilton (178,686); Ottawa (165,362); Windsor (119,823).

**History.**—Progressive-Conservative Premier George Drew remained in office during 1947. The legislature sat twice, in March and October. Motorists and pedestrians were granted financial protection against irresponsible drivers under the amended Highway Traffic act. The Workmen's Compensation act was revised to cover all occupational diseases. The minimum weekly wage for female employees was raised to $16.80. Annual liquor profits reached a new high of $26,800,500. At the close of 1946, Ontario's gross debenture debt stood at $214,648,074 (1945: $198,411,736).

After a 30-year ban, liquor in cocktail lounges or bars returned to Ontario. The survey of the Manitoba-Ontario boundary, halted ten years before because of lack of men and equipment, was completed. The Ontario Hydro-Electric commission was actively constructing 7 new generating plants, totalling 900,000 h.p., at a cost of $250,000,000. About 5,800 United Kingdom immigrants flew to Ontario under a scheme sponsored by the department of planning and development.

Two royal commissions reported. Justice Dalton C. Wells found marked inefficiency in production and distribution of milk and recommended producer co-operatives, free competition and municipal distribution as a public utility. Maj. Gen. Howard Kennedy reported on forestry and recommended appointment of government representatives to timber-operating companies, planting of 100,000 ac. a year for ten years, and limiting cut on provincial timber land to annual growth.

**Education.**—Enrolment in educational institutions in the 1944–45 school year was 756,089. The Rt. Hon. Vincent Massey, former Canadian high commissioner to London, replaced Dr. H. J. Cody as chancellor of the University of Toronto. The province established 52 annual research scholarships. The government budgeted $38,504,057 for education costs, an increase of $24,000,000 over 1943.

**Transportation.**—A two-lane highway between Toronto and Oshawa was opened. The government began a four-year $200,000,000 road-construction program. A 103-mi. roadway joined the Red Lake mining district with the Trans-Canada Highway system. The Temiskaming and Northern Ontario railway changed its name to the Ontario Northland railway.

**Agriculture.**—Heavy spring rains cut intended acreage by 30%, resulting in a loss of about $35,000,000 to Ontario farmers. Apple production was 371,200 bbl., 53% more than the 1946 yield. The agriculture department fostered northern Ontario settlement by allotting $393,000 as subsidies for land clearing, breaking, draining. The total number of livestock (horses, cattle, sheep, swine) in 1946 was 6,049,000 (1944: 5,889,000).

**Production.**—The gross value of 1945 production was $5,051,713,237. The net value was $2,499,527,223, which was 41.09% of Canada's total. The per capita production was $624.26.

**Mining and Industry.**—The value of 1945 mineral production was: platinum $26,688,646; copper $29,772,270; nickel $61,982,133; gold $62,576,089. Shipment of iron ore during 1947 was greater than in any previous year. Of 555 factory extensions in Canada, 348 were in Ontario. By November about 60,000 more persons were employed in Ontario manufacturing than at the same time in 1946. (C. Cy.)

**OPA (Office of Price Administration):** *see* PRICE ADMINISTRATON, OFFICE OF.

**Opera:** *see* MUSIC.

**Opium:** *see* NARCOTICS AND NARCOTIC TRAFFIC.

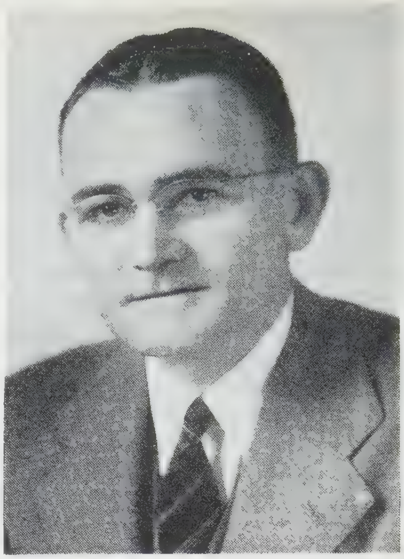
**Oranges:** *see* FRUIT.

## Oregon.

A Pacific northwest state of the United States, admitted to the union Feb. 14, 1859, the 33d state. Area, 96,981 sq.mi., including 631 sq.mi. of water; pop. (1940) 1,089,684. Capital, Salem (30,908); chief city Portland (305,394). In the latter part of 1947 the U.S. bureau of the census announced a revised population figure for Oregon of 1,517,000 as of July 1, 1947. The bureau announced for the Portland metropolitan area a population of 534,422, as of 1947.

**History.**—The 44th regular session of the Oregon legislature was held in Salem in the early part of 1947. The legislature appropriated $75,213,603 for state expenses, a substantial increase over previous sessions. Much of the increase was to cover greater costs of education. The legislature passed a bill for a state sales tax and referred the proposal to popular vote. The election was held on Oct. 7 and the proposal was defeated. At the same election Oregon voters defeated a proposal for a tax on cigarettes amounting to two cents a packet. As a result of the 1947 legislative session the state income tax was increased by the process of reducing the exemption, and in addition a withholding law was put into effect covering the state income tax. A husband-wife community property law was also passed.

As a result of an aeroplane crash on the evening of Oct. 28, 1947, Oregon suffered the loss of three of its top executives: Governor Earl Snell, Secretary of State Robert S. Farrell, Jr., and Senate President Marshall E. Cornett. The death of Governor Snell and Sena Cornett autom cally elevated John Hall of Portland the governorship, cause of his posit as speaker of house of represen tives. The new gov nor appointed Earl Newbry of Ashla secretary of state, a Newbry assumed fice Nov. 3, 1947.



JOHN H. HALL, who succeeded Gov. Earl Snell of Oregon when the latter was killed in a plane crash on Oct. 28, 1947

Oregon's postwar construction proble were taken in th stride. Unemploym did not present a unsurmountable d culties, despite fact that there was substantial increase state population in 1947 over 1946, amounting to about 65,o

The housing situation showed an improvement, which was c to the large number of dwellings built in 1946 and 1947, though there were many areas where facilities were in sh supply. The shortages were particularly noticeable in vicinity of establishments for higher education.

**Education.**—During the school year 1946–47 there were 243,711 pu in public schools, including 64,662 in high schools. There were 8, teachers. For the year 1946–47 the value of school properties, includ buildings, grounds and equipment, was $65,825,032. The superintende of public instruction is an elective office, and was held in 1947 by Putnam.

**Communications.**—As of Dec. 31, 1946, there were 7,207 mi. of prim and secondary highways in Oregon, of which 6,574 mi. were impro with various types of surfacing. As of Dec. 31, 1946, there were 3, mi. of steam railways, not including second main track, sidings, etc.

In 1945 the Oregon state highway commission adopted a three-y postwar construction program calling for an expenditure of $36,000,0 for additions and betterments. This was in addition to a federal for highway program calling for about $5,000,000, later expanded to ta care of access roads to make merchantable timber more readily availab The highway program had not been completely realized due to vari shortages, but generally good progress was made at the most critical lo tions. State contracts to the value of $15,400,000 were let in 1947. May 31, 1947, there were 418,302 registered automobiles in the sta not including 58,980 trucks.

Oregon's water-borne foreign commerce showed a substantial increa In December it was announced by the department of commerce that Oregon customs district moved dry cargo, export and import, amounti to 1,459,000 long tons during the first eight months of the year. T tonnage was greater than that moved by any other Pacific coast custo district for the same period. The Oregon customs district includes ports of Astoria, Coos bay, Portland and St. Helens, Ore., and Vancou and Longview, Wash.

**Finance.**—As of July 1, 1947, Oregon's state gross bonded debt w $15,741,440, against which there were sinking funds and other applica assets amounting to $14,545,688, leaving a balance of debt of $1,195,7 The assessed valuation of Oregon for 1946 was $1,120,333,779, the hig est after 1930.

**Agriculture.**—Total cash income of Oregon farmers in 1946 was $35 079,000, of which $9,102,000 represented government payments.

*Principal Agricultural Products of Oregon, 1947 and 1946*

| Crop | 1947 (est.) | 1946 |
|---|---|---|
| Corn, bu. | 1,170,000 | 1,172,0 |
| Oats, bu. | 10,030,000 | 9,782,0 |
| Barley, bu. | 10,863,000 | 9,452,0 |
| All wheat, bu. | 21,932,000 | 25,168,0 |

**Manufacturing.**—For the first nine months of 1947 Oregon's industri pay rolls amounted to $626,473,000, as compiled by the state unemplo ment compensation commission. This figure is to be compared to the su of $799,000,000 for the calendar year 1944, the previous high recor It was estimated that the 1947 total would be in excess of $830,000,00 In 1947 sound expansion took place in small manufacturing, food pr duction and processing and in the lumber business.

The demand for lumber and plywood continued heavy. In Dec. 194 the state forester estimated that Oregon's lumber output for the calend year would be approximately 6,250,000,000 bd.ft. Many mills report that their output was adversely affected by transportation shortages.

The centre of lumber production in Oregon had shifted from the Por land-Columbia river area to the southwest counties of the state, and pa ticularly to the Coos bay area. (L. A. McA.)

## teopathy.

Enrolment in the six osteopathic colleges, located in Chicago, Ill., Des Moines, Ia., Kansas y and Kirksville, Mo., Los Angeles, Calif., and Philadelphia, ., was the largest since 1941. A long list of qualified students, ny with baccalaureate degrees, could not be admitted be- ise entering freshmen classes were filled. Expansion of the leges and associated teaching hospitals proceeded as rapidly funds became available. In the osteopathic progress fund npaign more than $1,500,000 had been subscribed for sup- t of the approved colleges, almost all of the money being ovided by members of the osteopathic profession.

During 1947 a research project in neurophysiology at the rksville College of Osteopathy and Surgery, Kirksville, Mo., s aided by a grant from the U.S. public health service.

Doctors of osteopathy were appointed and were serving in department of medicine and surgery of the Veterans' ad- nistration, following the implementation of public law 293 th congress).

Under federal regulations implementing the Hospital Survey d Construction act, public law 725 (79th congress), the par- ipation of osteopathic physicians and surgeons in the locating d building of hospitals, where needed, was provided. Many ctors of osteopathy were appointed to hospital advisory coun- s under enabling statutes in the various states.

During the 51st annual convention of the American Osteo- thic association in Chicago, the board of trustees approved 63 eopathic hospitals for the training of interns and an addi- nal 114 were placed on the registered list. Sixteen osteo- thic hospitals were approved for training in the specialties. so during this meeting ground was broken for the construc- n of a permanent headquarters building for the association Chicago's near north side. The building was scheduled for mpletion sometime in 1948.

On Dec. 1, 1947, membership in the American Osteopathic sociation stood at the all-time high of 8,237, or 73% of the ,239 practising osteopathic physicians and surgeons.

(R. E. D.)

## ttawa.

The capital of Canada is at the confluence of the Ottawa and Rideau rivers in the province of Ontario d covers 8.3 sq.mi. Pop. (1941 census) 154,951; (1947) 192,003 (plus 30,202 in suburbs). The houses of parliament are on a high cliff overlooking the Ottawa river.

The 100th anniversary of the incorporation of Ottawa fell on July 28, 1947. The first Marian congress in Canadian history, which attracted 200,000 visitors, was held in the capital June 18–22. After a lapse of 6 years, the Central Canada exhibition was revived with new record attendance of 324,192 (1941: 247,794). The housing situation remained bad, with 750 residents living in temporary quarters, including summer shacks, even in winter. Traffic fatalities for the year were 14 deaths (1946: 11 deaths). The board of control passed a smoke control bylaw. The University of Ottawa, only Canadian official bilingual university, acquired additional property for a $1,000,000 medical building. Development of a national capital of the Ottawa-Hull area moved forward, with the department of public works filing expropriation notices on 10.3 sq.mi. (C. Cy.)

RES. TRUMAN decorating the War Memorial at Ottawa in June 1947, during s official visit to the Canadian capital

**Outdoor Advertising:** *see* Advertising.
**Outer Mongolia:** *see* Mongolia.

## Oxford University.

In the academic year 1946–47 the number of undergraduates rose to 5,559 men and 1,121 women, compared with 3,219 men and 928 women in 1946; the total was 1,657 higher than in 1939. Almost 90% of the men in residence, excluding those from overseas, were ex-service. Many of them were married, and most were older than the ordinary undergraduate, so that university conditions were generally abnormal. Although only one university and no college building remained requisitioned, overcrowding was serious, and the residential limit (2½ mi. from the centre of the city) was relaxed.

Two new professorships were established; a third in modern history, and one in psychology (G. Humphrey), which took its place for the first time as a subject of a final honour school of philosophy, psychology and physiology.

It was decided that the clinical course which Oxford had established for its medical students during World War II, when the London schools were dispersed, should be continued permanently, a development that was envisaged when Lord Nuffield's endowment for medicine was given in 1937. The government grant for the quinquennium beginning in Oct. 1947 was arranged: for general purposes it was to be £465,500 in the first year, rising by 5% annually to £555,000; the grant for medical education was £100,000 in 1947–48 and was to be reviewed later. Additional grants, apart from those for nonrecurrent purposes, might be made for special purposes. Benefactions included: £80,000 for three years for nuclear gamma rays research in the Clarendon laboratory; £17,000 from H. N. Spalding and his wife for books for devastated universities of Europe and Asia; £1,000 from Dr. E. Ruffini for the endowment of a Luca Ruffini travelling scholarship; £25,000, under the will of Sir Henry Wellcome, for purchase of premises for a laboratory of human nutrition; and a fund for the endowment of a Laurence Binyon prize.

In October Dr. W. T. S. Stallybrass, principal of Brasenose college, was elected vice-chancellor of the university in place of Sir Richard Livingstone.

Bibliography.—*The Oxford University Handbook; Oxford University Gazette* (Oct. 9, 1947) supplement 2, containing the vice-chancellor's review of the year; *Oxford* (the magazine of the Oxford society). (D. V.)

## Pacific Islands, British.

These islands include the colony of Fiji (consisting of a number of islands), the British Solomon Islands protectorate, the Gilbert and Ellice Islands colony and the protected state of Tonga. Area: Fiji: 7,055 sq.mi.; Solomon Islands protectorate: 12,400 sq.mi.; Gilbert and Ellice Islands colony: 345 sq.mi.;

Tonga: 250 sq.mi. Pop.: Fiji (1947 est.): 260,000 (Fijians and Indians, in approximately equal numbers, together represent about 90% of the total); Solomon Islands (1937): 89,568 (the great majority Melanesians); Gilbert and Ellice Islands (1940 est.): 34,202 (mainly Polynesians); Tonga (1945 est.): 40,668 (all but about 1,100 being Tongans, a Polynesian race closely allied to the Maoris and Samoans). General administrative or supervisory authority over the whole area is vested in the governor of Fiji (appointed by the British crown) who also holds the office of high commissioner for the western Pacific. His headquarters are at Suva, the capital of Fiji. In the colony of Fiji he is assisted by an executive council (containing unofficial as well as official members) and by a legislative council on which all sections of the community are represented (in some cases by election). Both in the Gilbert and Ellice Islands and in the Solomon Islands the high commissioner's authority is exercised through a resident commissioner. Tonga is governed by its own sovereign (Queen Salote), assisted by a privy council, a cabinet and a legislative assembly (mainly elective); the British government is represented by an agent and consul who is responsible to the high commissioner at Suva. Governor of Fiji and high commissioner for the western Pacific: Sir Brian Freeston (appointed 1947).

**History.**—The most important event of 1947, as affecting the British Pacific islands, was the creation of an international South Pacific commission. This was the outcome of a conference held at Canberra, Australia, early in the year and attended by representatives of Australia, New Zealand, the United Kingdom, the United States, France and the Netherlands. An agreement establishing the new commission was signed *ad referendum* on behalf of the six governments in Feb. 1947. Its constitution and functions were similar in many respects to those of the Caribbean commission already operating in the West Indian area. It was to be a consultative and advisory body to the participating governments on matters affecting the economic and social development of the nonself-governing territories within its scope. Each participating government was to be represented by two commissioners. At least two regular sessions were to be held every year. The question of the commission's permanent headquarters was reserved for further consideration; meanwhile, as a temporary arrangement, it would function from Sydney. The Australian and New Zealand governments were authorized to take the necessary steps to set the machinery in motion. A South Pacific conference was also to be set up, of which the first session would be called within two years of the ratification of the agreement and further sessions thereafter at intervals not exceeding three years. The object of the conference was to ensure that representatives of the local inhabitants and of interested official and nonofficial institutions should be associated with the work of the commission.

Early in 1947 the constitution of Fiji was amended in a number of respects; the governor's power of veto was abolished, the franchise was extended to civil servants and the qualifications required for Indian voters were brought into line with those required for European voters. The year witnessed economic and administrative developments both in Fiji and in the other territories falling within the sphere of the British high commissioner. Schemes sanctioned under the Colonial Developments and W fare act included substantial grants to the Solomon Islands p tectorate (£16,800 for the purchase of vessels for local admi tration; £48,880 for the development of medical services; £19,900 for the purchase and erection of bridges).

**Finance and Trade.**—The unit of currency in Fiji is the Fiji po (linked to sterling at the fixed rate of £F.111 = £100); in the Solom the Gilbert and Ellice Islands and Tonga, United Kingdom and A tralian notes and coin are legal tender; Tonga has a local issue of rency notes. Revenue (1946): Fiji £1,976,941; Solomons £61,655; bert and Ellice Islands £65,308; Tonga £93,000. Expenditure: £1,949,447; Solomons £275,970; Gilbert and Ellice Islands £233,1 Tonga £90,000. The Solomons and Gilbert and Ellice Islands rece grants-in-aid from the British treasury. Imports: Fiji (1946) £3,217,0 Solomons (1941) £92,000; Gilbert and Ellice Islands (1939) £143,0 Tonga (1946) £219,000. Exports: Fiji (1946) £3,247,000; Solom (1941) £134,000; Gilbert and Ellice Islands (1939) £230,000; To (1946) £171,000. Sugar is the most important agricultural product Fiji and constitutes much the largest item in the exports of the colo Other exported products include copra, gold and fruit (mainly banana The chief product (and export) of the Solomons is copra; that of Gilbert and Ellice Islands, phosphate of lime. The exports of Tonga confined to copra and bananas (neither in any large quantities).

(J. E. Sh.

## Pacific Islands, French.

The latest statistics availa in 1947 for this French colo were: area (Society, Tuamotu, Tubuai and Marquesas island 1,545 sq.mi.; pop. (est. Dec. 31, 1939) 45,000 (white *c.* 3,700 (census 1941) 51,000. Capital: Papeete, in Tahiti (pop. cens 1941, 11,614). Governor: Jacques Tallec.

**Trade and Communication.**—Foreign trade (1945): imports 202,500,0 francs; exports 186,600,000 francs. Roads (1938): Tahiti 92 m Raiaetea 22 mi.; and Moorea 37 mi.; shipping entered (1943): vessels, tonnage 160,943.

**Finance.**—Revenue and expenditure (est. 1944) balanced at 43,449,0 francs. Exchange rate, 1947: 1 franc = 0.84 U.S. cents.

**Production.**—Export (1945): copra 19,050 short tons; natural ph phates 255,359 short tons; vanilla 137 short tons; nacre 832 short to other products 12,100 short tons.

## Pacific Islands under Trusteeship.

The former German possessions in the western Pacific compri part of New Guinea with adjacent archipelagos, Western Samo the Marshall, Caroline, Palau and Marianas (Ladrone) islan and the island of Nauru. Statistics for these territories a given in the accompanying table. For capital towns and go ernors of New Guinea, Western Samoa and Nauru, *see* BRITIS EMPIRE.

**History.**—On Feb. 17, 1947, the United States, which st remained in military occupation of the Japanese mandat islands, formally presented to the United Nations Security cou cil its proposal, originally published Nov. 1946, for putting t islands under United Nations trusteeship, to be administered b the United States under conditions which would grant th country exclusive military, naval, air and economic rights a make the islands "an integral part of the United States." T U.S.S.R. accepted the proposals as "entirely fair," taking in

*Pacific Islands Under Trusteeship*

| Territory and Area (sq. mi.) | Population and Status | Principal Products (short tons) | Imports and Exports (000s omitted) | Revenue an Expenditur (000s omitte |
|---|---|---|---|---|
| New Guinea, Territory of (93,000): North East New Guinea (69,700), Bismarck archipelago (19,200) and Solomon Is. (4,100) | (1940) Native 668,871<br>European 4,339<br>Asiatic 2,099<br>Trustee territory administered by Australia | Exports: gold (1941) 8.58<br>copra (1940) 66,000 | (1940–41)<br>imp. $ 3,107<br>exp. $10,488 | (1940–41)<br>rev. $1,381<br>exp. $1,392 |
| Western Samoa (1,133) | (1945 census) 68,197 (native 62,422)<br>Trustee territory administered by New Zealand | Exports (1945):<br>copra 16,864<br>bananas $272,250 | (1945)<br>imp. $1,609<br>exp. $2,544 | (1946)<br>rev. $1,12<br>exp. $947 |
| Marianas Is., Caroline Is., Palau and Marshall Is. (830) | (1947) 50,537<br>Trustee territory administered by the U.S.A. | (1947)<br>dry phosphate 162,600<br>copra 3,675<br>trochus shells 350 | (1947)<br>imp. $1,250<br>exp. $479 | (1940)<br>rev. $2,564<br>exp. $2,54 |
| Nauru (8) | (1947) Nauruans 1,376, other islanders 33<br>Trustee territory under the joint authority of Great Britain, Australia and New Zealand; administered in 1947 by Australia | Exports (1941):<br>natural phosphates 111,048 | (1941)<br>imp. $345.4<br>exp. $224 | (1941)<br>rev. $38.8<br>exp. $77.3 |

ount the decisive role played by the U.S. forces in that atre of war. Opposition, based mainly on legalistic grounds, ; shown by Australia and Great Britain, but after several ournments unanimous approval of the proposal was given April 2. Provision was made that the agreement could not altered, amended or terminated without the consent of the ninistering authority. It was approved by the house of repre- tatives on July 11 and by the senate on July 14. The islands, v designated "The Territory of the Pacific," were placed ler civil administration, temporarily under the navy depart- nt, on July 19, and later split into four district governor- ps: the Marianas, W. Carolines, E. Carolines and Marshalls. Great Britain, Australia and New Zealand submitted a draft eement for the joint trusteeship of Nauru to the United tions in October. The assembly approved the agreement on v. 2 (*see* TRUSTEE TERRITORIES). (J. RA.)

**cifism.** By far the most important event of 1947 from the standpoint of pacifists was the consummation in lia of independence from British rule. There was no dis- eement among commentators about the important role yed in that achievement by the nonviolent techniques advo- ed and applied under the leadership of Mohandas K. Gandhi l perhaps even more by the mahatma's spiritual contribution oted in his conviction of the power of truth and nonviolence. Observers were divided in their opinions as to the extent to ich Gandhi's methods and general leadership were called in estion by the communal riots and the Pakistan-India strife ich followed the declaration of independence. Gandhi himself pressed great discouragement, yet at a highly critical moment ife in Calcutta ceased as the result of a typically Gandhian . He went to live in the same house with the Moslem leader the city who was regarded by the Hindus as chiefly responsi- for attacks upon them. Quiet soon descended on the city d continued throughout the rest of the year.

A world pacifist conference to be held in India, originally heduled for Jan. 1948, was projected for Jan. 1949. The dele- es, consisting of leaders of pacifist churches and organiza- ns, would be limited to about ten from each continent, and uld spend a week in a religious "retreat" and would then ntinue the conference at Rabindranath Tagore's school, San- iketan.

The Nobel Peace prize for 1947 was awarded to the American iends Service committee and the Service Committee of iends in London. The Nobel committee emphasized the re- ious pacifist faith of Quakers as the inspiration for their tensive nonpolitical and nonsectarian relief activities.

In the United States pacifists welcomed expiration of the war- ne Selective Service act on March 31, 1947. This was accom- nied by the liquidation of the remaining alternative service ojects in which conscientious objectors had been engaged ivilian public service).

The president's amnesty board under the chairmanship of rmer Justice Owen J. Roberts was charged with examination all cases of convicted selective-service violators (15,805 as of ov. 24, 1947). It entirely rejected the proposal made by a mber of organizations that a general amnesty be proclaimed. its report, the board classified the cases which it had examined dividually as follows: wilful violators or nonconscientious ob- ctors, approximately 10,000, of whom half had previously been nvicted of crimes including "murder, rape, burglary, etc."; hovah's Witnesses, approximately 4,300; conscientious ob- ctors, approximately 1,000; others, 500.

Of the total number, 618 had already been pardoned under a esidential proclamation making pardon available for men who ter conviction entered the armed forces. Approximately 900 more were eligible for such pardons. The board recommended pardons (restoration of civil rights) to 1,523 of the remaining 14,287. These included Americans of Japanese descent who would willingly have served in the armed forces but for the fact that "they deeply resented classification as undesirables." Only a small percentage of the 5,300 classified by the board itself as Jehovah's Witnesses or conscientious objectors were included in the 1,523 recommended for pardon. The board held that pardon should be granted only to such conscientious objectors as held formal religious beliefs, excluding those whose objection to war was based on "intellectual, political, or sociological" grounds. President Truman published the board's report and proclaimed pardons as recommended on Dec. 23, 1947. The action was greeted by numerous protests not only from pacifists but from religious leaders and advocates of civil liberties. Critics pointed out that millions of pardons had been granted to Germans and Japanese who had fought against the United States, and that the board and the president were not only laying down a narrow definition of conscience but apparently were applying a religious test.

Pacifist and nonpacifist forces were successful in putting off the adoption of universal military training by congress. On the other hand, they deplored extension of the conscription act by the British labour government.

In the failure to make a general peace and in the deterioration of international relations, especially between the U.S.S.R. and the United States, pacifist writers found confirmation of their analysis of the nature and effects of war. Many of them supported United Nations activities and joined in urging U.S. aid for European recovery, but increasingly they urged a complete abandonment of reliance on military force and especially the scrapping of atomic and bacterial weapons.

BIBLIOGRAPHY.—*Report* of the President's Amnesty Board; *Report* of Director, Selective Service Administration; *Reports* of American Friends Service Committee; A. J. Muste, *Not By Might* (1947). (A. J. M.)

**Painting.** The predominance of nonobjective and expressionistic painting continued throughout 1947. There was an ever-widening acceptance of the abstract formalism which had outlived its life span in Europe a quarter of a century before. As for expressionism and all its variations, the U.S. orientation was quite unlike the original German or French expressionism. It had grown into a maturity and perfection attained by only a few European artists.

One change, however, became notable on the exhibition scene —the decline of the once-fashionable surrealism. It could perhaps be said that the various pictorial symbolisms on which surrealism relied had become, if not exhausted, at least so standardized as to have lost their esoteric meaning. A case in point was the work of Eugène Berman, in which all the romantic and nostalgic paraphernalia of a surrealism derived from the Venetian baroque had reverted to merely decorative stage settings. As in Berman's work, so in the work of many other surrealistic painters mechanistic routine had overtaken original impulses. Nevertheless, the art juries had not yet got round to fully recognizing this fact, and Berman received top honours at the Chicago Art institute.

In 1947 the Art Institute of Chicago staged an enormous and successful survey of realistic and abstract art which broke the tradition of more than half a century of showing an annual all-American exhibition. Almost one-third of the exhibitors were completely unknown in the exhibition field, but competed easily with the best established painters. In many instances they proved superior to the regular exhibitors along New York's 57th street.

Most of the prize-winning paintings and museum accessions of 1947 belonged to the modern school. The Museum of Mod-

Above: "MARINE STILL LIFE," a dock scene in tempera by Zoltan Sepeshy which took prize at the Carnegie institute's exhibition of "Painting in the United States, 1947"

Above: "THE VILLAGE STREET," one of a portfolio of 20 canvases painted by Evelyn Stiasny as a high school student, which won for her the major 1947 scholarship award of the School Art League of New York city

Above: MAX WEBER'S "Flute Soloist," a prize-winning painting at the fo annual art competition sponsored by the Pepsi-Cola Co.

Left: "END OF AN ERA" by Mitchell Siporin, awarded the Logan medal at 51st annual exhibition by artists of Chicago and vicinity, held at the Art In tute of Chicago in the summer of 1947

Art in New York had taken the lead, but during 1947 prac- ly every major museum or art institute throughout the coun- bowed to the trend of the times. Museum directors, art cs, writers on aesthetics and heads of various university art artments became active supporters of the new ideology.

uring 1947 the number of galleries showing exclusively non- ective art doubled. The show at the Art Institute of Chicago ght to light whatever abstract painting was done in the ted States, and it was a valid conclusion that academism is limited to representational art, for the nonobjective had become patently academic.

ealism was given little or no consideration. With the excep- of the National Academy of Art and the Carnegie exhibi- in Pittsburgh, where an ultraconservative jury selected con- tional paintings for the top honours, comparatively few ntings following realistic tendencies received recognition in form of prizes or museum purchase. There was good reason, ever, for the decline of the school of realism. It had become domain of the commercial artists, who were best equipped ompete with the photographic image. Although realism has y facets, in principle it vies with the camera eye. Artists find that their skill for photographic rendition is inade- te, or who cannot entice any new sensations from nature, invariably to the subjective or the abstract.

major event in 1947, although it did not appear as such at time, was the exhibition of French contemporary painting he Whitney Museum of American Art in New York, limited painters less than 40 years of age. Playing host to foreign tors, the museum unwittingly strengthened the reputation of . art far more effectively than the annual display of native alone could have done. It was made clear that, whatever the ghts reached in the art of France, they were matched in the of the United States, with equal or better craftsmanship, our, colour sense and taste. Rather unusual was the unani- us condemnation of the French show by the art critics, in- ding those who had staunchly supported anything coming m France.

As for the two painters generally referred to as the greatest the time—Henri Matisse and Pablo Picasso—there was little vs about the former, but Picasso soared to unprecedented v heights of popularity. News magazines as well as art publi- ions carried many sensational features exploiting all the esses and incongruities of his recent paintings.

Another favourite in the exhibition field in 1947 was the Brit- sculptor, Henry Moore. Although he was little known in United States (there had been one exhibition of his draw- s in 1946), his show at the Museum of Modern Art received eral acclaim.

His modernism, seen in the use of radical distortions and rk simplifications, was immediately acceptable to contem- ary taste.

The German painter Max Beckmann, perhaps the most power- representative of the school of distortionists, went to the ited States to teach at Washington university in St. Louis. hough lacking Moore's taste, tact and his decorative refine- nt, Beckmann seemed in spite of his shortcomings to be the erior artist. His call to St. Louis witnessed the anxiety of ne of the midwestern institutes to share in the modern art vement. (*See* also SCULPTURE.) (FR. T.)

## ints and Varnishes.

In 1947, for the first time in history, paint sales in the United tes exceeded $1,000,000,000, being about 35% greater than 1946. The high prices of linseed, soya and other oils, trace- e to a general shortage of fats and to a government flax price port program, were reflected in higher prices of paint products. Raw material shortages continued, particularly in titanium dioxide and in phthalic and maleic anhydrides.

Tung oil from China was again available in good volume and at prices competitive with domestic oils. Linseed oil from Argentina was in shorter supply, but castor beans from Brazil resumed their large contribution to the paint industry in the form of dehydrated castor oil. This availability of tung and castor oils made important the fortification of soya oil to replace linseed oil in many uses. Tall oil, despite its slow drying, increased in paint use because of its low price and the availability of pentaerythritol and the fast drying oils to fortify it. Solvents continued in short supply.

Phthalic anhydride increased in demand for alkyd resins for architectural and industrial finishes, in competition with its increasing use in plasticizers, for vinyl resins, and became short in supply, despite an all-time high production of 140,000,000 lb.

Styrene, having become abundant and cheap for the synthetic rubber industry, was used in copolymerization with drying oils to make fast drying finishes. Cyclopentadiene, available in quantity from both coal tar and petroleum sources, was also used for copolymerization with oils, as well as for the older solid resins.

Phenol ether resins were announced commercially as a combination of the better features of phenolic and alkyd resins and were used without modification in baking finishes and also esterified with drying oil acids to produce films of superior drying and durability.

Vinyl polymers expanded in both volume of production and diversity of type, the latter including both alkyd miscible solutions and emulsions which dry to transparent continuous films.

In the field of pigments, stainless steel flakes were offered as more corrosion resisting than aluminum.

Paint of higher fire resistance was promised by several new components, but none showed wide adaptability to conventional paint use. (JO. C. W.)

## Pakistan, Dominion of.

Pakistan consists of four provinces, viz.: East Bengal, capital Dacca; North-West Frontier province, capital Peshawar; West Punjab, capital Lahore; Sind, capital Karachi.

Population of Pakistan: 70,000,000 (approximately); area: 361,000 sq.mi. Capital: Karachi. National flag: green and white; the white portion, which is one quarter of the flag, stands for the non-Moslem minorities; on the green portion appears a white crescent and heraldic star. Governor general and president of the constituent assembly: Mohammed Ali Jinnah; prime minister: Liaquat Ali Khan. (For history, *see* INDIA. *See* also INDIA, DOMINION OF.)

The Punjab, or land of five rivers, lies along the course of the Indus and its confluents, upon whose waters it mainly depends for its livelihood. Its principal crops are wheat, barley, millets, pulses and sugar cane. Mineral resources are small. The Punjab, originally a Mogul province, was conquered by the Sikhs under Ranjit Singh at the end of the 18th century. Their short-lived empire was overthrown by the British in 1849. The majority of the inhabitants are Moslem by religion. The Punjab has always been the home of martial races, and furnished the best troops to the Indian army. The principal languages are Urdu and Punjabi.

The North-West Frontier province, inhabited by Pathan tribes, is strategically important because of the Khyber and other passes, which are the gateways of India. The Pathans are a freedom-loving race, managing their affairs democratically in *Jirghas* or tribal assemblies. They had little desire for amalgamation with the Punjab, though they by a bare majority decided, chiefly on religious grounds, to enter Pakistan. There was a considerable body, under the leader of the "red shirts," Abdul Ghaffar Khan, which at one time had leanings toward the Indian National congress. The language is Pashtu.

Sind, the province lying at the mouth of the Indus, was of little importance before the British conquest in 1843. It has a mixed Baluchi and Hindu population. Since then its prosperity was greatly enhanced by the rise of the seaport of Karachi and the construction of the Sukkur barrage, which has irrigated 5,500,000 ac. of barren desert. This area is now the chief wheat-producing district of India.

To the west of the Punjab lies Baluchistan. It is composed of British Baluchistan, which was by plebiscite absorbed into Pakistan, and the state of Kalat, which was recognized by Pakistan as an independent sovereign state. This placed the garrison town of Quetta, which commands the all-important Bolan pass, under the control of Pakistan. The great Baluchi state of Bahawalpur, with an area of 16,400 sq.mi. and a population of 1,500,000, acceded to Pakistan.

Eastern Bengal was overrun by the Moslems at the end of the 12th century. It is a land of rivers, tributaries of the Ganges and Brahmaputra. These serve as highways, and bring down the alluvial soil which makes it one of the most fertile countries in the world. Its products include tea, indigo, jute, timber and many kinds of grain. It has a good port in Chittagong.

(H. G. Rn.)

## Palaeontology, Vertebrate.

**General.**—A paper of general interest in 1947 was the study of the microscopic composition of coprolites from the Bridger Eocene of Wyoming (W. H. Bradley). S. P. Welles published some of the results of work in the lower Triassic Moenkopi formation of North America that furnished a partly new assemblage of vertebrates.

**Fishes.**—The exoskeletons of some of the most primitive jawless fishes (*Dartmuthia* by Gustav Wängsjö, *Tremataspis* by R. H. Denison) were subjected to microscopic study. E. I. White discussed the heterostracean genus *Phialaspis* and D. H. Dunkle erected a new genus of arthrodire, *Bungartius*, from the Devonian Cleveland shales. Among others, new genera of palaeoniscid fishes were reported by Carlos Rusconi and a late Cretaceous polyodontid from Montana was described by Archie MacAlpin. Anatol Heintz proposed a new systematic division of the lower vertebrates based on anatomical peculiarities of the nasal region in crossopterygians. Bobb Schaeffer described an Eocene serranid from Patagonia and several Cretaceous and Tertiary Actinopterygii from Brazil; Louis Hussakoff reported a new pycnodont from the Cretaceous of Arkansas.

**Amphibians.**—The most significant contribution was A. S. Romer's *Review of the Labyrinthodontia*, in which these forms are grouped into Temnospondyli and Anthracosauria. The latter embody the Embolomeri and the Seymouriamorpha that may have given rise to the reptiles. Ichthyostegalia, Rhachitomi, Trematosauria and the Stereospondyli make up the temnospondyls with the Anura considered as a possible side line of the Edopsoidea among the Rhachitomi. The classification of the Triassic stegocephalians was discussed by Tage Nilsson.

**Reptiles.**—The cranial morphology of the Diadectidae (E. C. Olson) was further investigated with the result of a proposal of a change in reptilian classification. Two subclasses are distinguished, the Parareptilia and the Eureptilia. The former include the Diadecta (with Seymouriamorpha, Diadectomorpha, Procolophonia, Pareiosauria) and the Chelonia. The Eureptilia contain the Captorhina, Synapsida, Parapsida, Euryapsida and the Diapsida. A new procolophonid (*Candelaria*) from the Triassic of Rio Grande do Sul, Brazil, was reported by L. I. Price, and A. M. Macgregor mentioned the discovery of reptilian remains from the Madumbisa shales of Rhodesia. Papers on fossil turtles included the description of a *Clemmys* from the Plio of the Ukraine (L. I. Khosatsky), an anosteirine form f Manchuria, the redescription of the pelomedusid *Taphros olssoni* from Peru (Rainer Zangerl), and further work on osteology of *Testudo praeextans* (C. W. Gilmore). Alfredo B reported a new *Placochelys* from the Rhaetic of the Lomba C. W. Gilmore proposed a new genus of crocodile, *Procaima dea,* from the Eocene of Utah and Robert Hoffstetter presen a study of fossil lizards of the family Gekkonidae. An art by F. R. Parrington dealt with the cranial anatomy of cynodonts.

**Birds.**—Madelaine Friant contributed several papers on av osteology. One was concerned with the procoracoid in bi another with the wing of *Rhea* and yet another with the ta metatarsus in terrestrial types (Struthio).

**Mammals.**—Some of the results of the Sven Hedin Exp tion to N.W. China were made known by Birger Bohlin. Simplicidentata, Artiodactyla, Perissodactyla and Primates f western Kansu were described. Carlos Rusconi mentioned ma malian remains (hegetotheriids, propalaeoplophoids) from Juan, Argentina, and a Miocene mammalian fauna from Bea Buttes, Oregon, was discussed by R. E. Wallace. A semipopu article by Emil Kuhn informed about the status of prehisto research especially in the region of Switzerland. C. L. Ga presented a paper on the sabre-tooth creodont, *Machaero eothen,* from the Bridger Eocene, and mention was made some recently discovered fossil insectivores (Jean Viret). new genus of European deer was reported by José F. de Villa Comella and D. M. S. Watson reviewed the evolution of Proboscidia. M. F. Skinner and O. C. Kaisen attempted a ta nomic clarification of the genus *Bison,* based on an extens study of much Alaskan material.

Among articles on primates with especial emphasis on qu tions of human evolution were J. A. Kälin's general presentat of the problem of human phylogeny, and Franz Weidenreic *Apes, Giants and Man* which gives orientation of the pres status of the discussion. Robert Broom and S. W. H. Schep devoted a study to the South African ape-men, Australopit cinae; skull casts of *Pithecanthropus* and *Sinanthropus* w discussed by C. N. Kappers, and, finally, new fossil finds of a or primitive men from Kenya were reported by L. S. B. Leak

(R. Zl.)

## Palestine.

Palestine lies on the western edge of As bounded on the west by the Mediterranean, the southwest by Egypt, on the south by the Gulf of Aqaba, the east by Trans-Jordan, on the northeast by Syria and on north by Lebanon. Area: 10,159 sq.mi.; pop. (est. Dec. 1946) 1,887,214 (excluding British forces). Chief towns (p est. 1944): Jerusalem (cap., 155,314); Haifa (125,498); Ja (93,493); Tel Aviv (155,277). Languages: English, Arabic, H brew and Yiddish. Religion: (1944) Moslem 1,061,277; Jew 528,702; Christian 135,547. High commissioner: Lt.-Gen. Alan Gordon Cunningham.

**History.**—The year 1947 was one of great significance in t history of Palestine. Political tension and internal disorc culminated in the recognition by the United Nations gene assembly of the unworkability of the British mandatory syste of government in Palestine and the decision to establish inc pendent Arab and Jewish states, with Jerusalem as an int national city.

Throughout 1946 the British government had searched for means of reconciling the various interests concerned with t country. About the turn of the year the Zionist congress me ing in Basle abandoned Dr. Chaim Weizmann's leadership a rejected his plea for Jewish participation in the London conf

called to discuss the government's plan for a federal Pales-
Zionist opinion was strongly in favour of the early estab-
ent of a Jewish state and of unrestricted immigration into
stine. At the same time the Arab states were strengthening
rganization of the Arab league, in which the principal uni-
element was the opposition of its seven members to Zion-
spirations. Faced with the intransigent attitude of both
s and Jews to a compromise solution of the problem, the
sh government decided at the end of February to refer
natter to the United Nations.

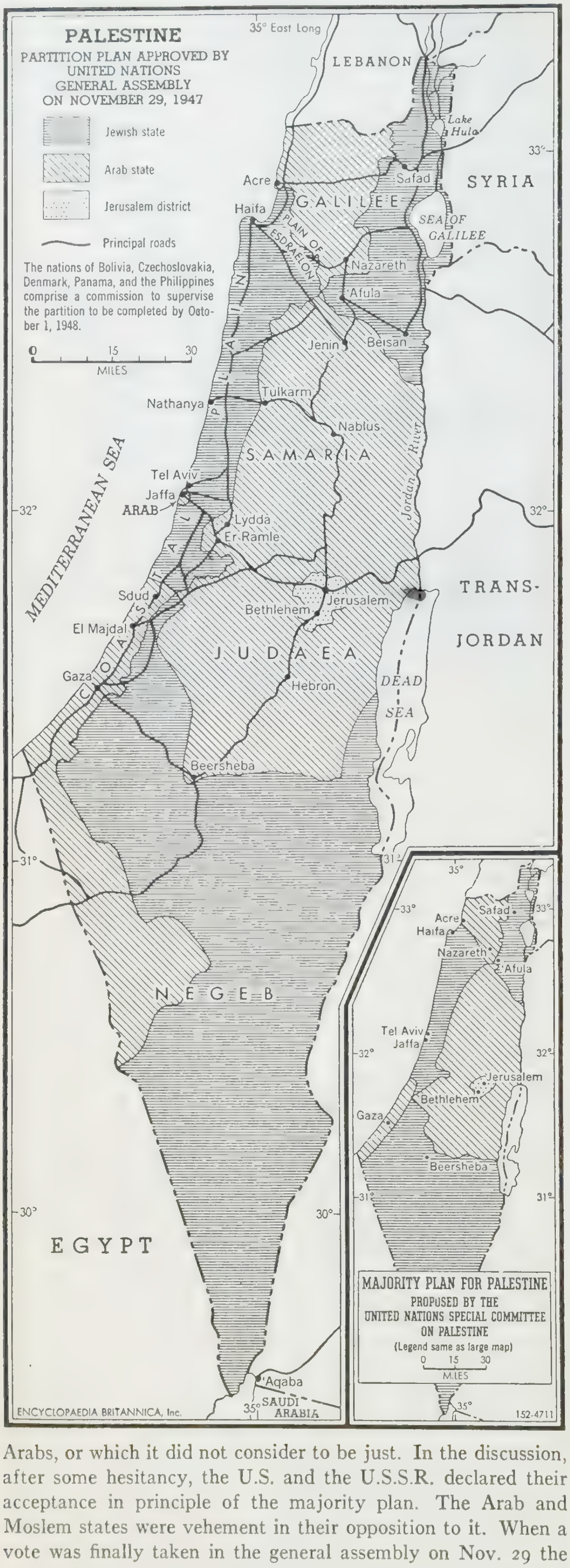
April 28, 1947, a special session of the general assembly
ed at Flushing Meadows, N.Y., with the question of Pales-
as the sole item on its agenda. Representatives of the Pales-
Arab higher committee and of the Jewish agency were
ed to attend the meeting in order to present their cases. On
15 the assembly decided to set up a United Nations special
mittee on Palestine (U.N.S.C.O.P.) composed of representa-
of 11 countries (Australia, Canada, Czechoslovakia, Guate-
, India, Netherlands, Iran, Peru, Sweden, Uruguay and
oslavia) who were to prepare a report by Sept. 1 and make
mmendations for submission to the next assembly.

Palestine itself the internal political situation showed no
of improvement. Throughout the year the country was the
e of frequent outbursts of terrorism and internecine strife;
Holy Land resembled an armed camp. Jewish terrorists of
extremist Irgun Zvai Leumi and Stern groups continued
r attacks on British troops and police. At the same time
anah, the secret Jewish paramilitary organization, vigorously
inued its policy of organizing Jewish immigration from Eu-
to Palestine in defiance of the government's regulations.
ge numbers of immigrant ships were intercepted off the coast
alestine by the royal navy and the passengers transferred to
rnment camps in Cyprus. During 1947 a total of 24,000
ons were dealt with in this manner with approximately half
number subsequently reshipped to Palestine. In an attempt
discourage this traffic the British government decided to
e an example of the 4,500 immigrants who arrived off Pales-
on July 18 on board the "Exodus 1947" (previously the
esident Warfield"). Instead of dispatching them to Cyprus the immigrants were trans-shipped to the French port whence they had sailed and when they refused to disembark were sent after innumerable delays and after enduring great hardships to Hamburg, where they were forcibly disembarked and finally lodged in displaced persons camps in the British occupation zone of Germany. The incident raised an outcry from Jews and Christians on both sides of the Atlantic and the experiment was not repeated. Of the many acts of terrorism, none created a more profound impression than the hanging of two British sergeants by Irgun Zvai Leumi at the end of July. Fatal casualties in Palestine from Aug. 1945 to Aug. 1947 were officially stated to be 141 British, 56 Jews, 44 Arabs and 10 others.

UNCERTIFIED Jewish immigrants resisting British soldiers who boarded their schooner at Haifa, Palestine, to transfer them to a ship bound for Cyprus

The U.N.S.C.O.P. report of Sept. 1 contained 11 unanimous recommendations, of which the first and most important was that the mandate should terminate and that the independence of Palestine should be achieved at the earliest possible date. In addition, there were: (1) a majority plan which proposed that Palestine should be constituted into an Arab and a Jewish state, with Jerusalem an international city, all combined under a scheme of economic unity, and (2) a minority plan which advocated an independent federal state for the whole country. The United Nations general assembly met at Flushing Meadows on Sept. 16, and on Sept. 23 it decided to set up a special *ad hoc* committee comprising representatives of all member-states to discuss the problem of Palestine. Once again, the Arab higher committee and the Jewish agency were invited to send representatives to present their respective cases. In a declaration of Sept. 26, when the debate was opened, and subsequently on Oct. 16, the British delegate accepted the 11 unanimous recommendations of the U.N.S.C.O.P. report and gave particular emphasis to the first two. He made it clear, however, that while he would not support the majority plan, neither would he oppose it, but he stressed the fact that his government would not accept responsibility "either alone or in a major role" for the enforcement of a scheme which was not agreed to by both Jews and

RN GANG members in a Jewish trench in Palestine during 1947. This
p was an armed faction of illegal status which was responsible for a num-
of bombings and terrorist raids in the Holy Land during the year



Arabs, or which it did not consider to be just. In the discussion, after some hesitancy, the U.S. and the U.S.S.R. declared their acceptance in principle of the majority plan. The Arab and Moslem states were vehement in their opposition to it. When a vote was finally taken in the general assembly on Nov. 29 the motion in favour of the establishment of separate Jewish and Arab states and an international city of Jerusalem was approved by 33 votes to 13 with 10 abstentions and one absentee. At the same time a commission composed of the representative Czechoslovakia, Denmark, Bolivia, Panamá and the Philipp was appointed to supervise the execution of the U.N. deci The result of the vote was hailed with delight by the suppo of the Jewish agency and with bitter resentment by the A The reception of the news in Palestine was the signal for an mediate outburst of rioting and bloodshed which, up to Dec was reported to have cost the lives of not less than 84 Jews Arabs and 7 British; serious rioting took place in Aden, inv ing the death of some 75 Jews and 36 Arabs, and disturba were also reported from Syria. (D. F. K

**Education.**—Arab public system maintained by the government 1944 scholars, elementary 62,783; secondary 959; postmatriculation 48. In there was a total of 904 public schools with about 80,000 schc Moslem private schools: scholars, elementary 13,752; secondary 14 Christian private schools: scholars, elementary 24,417; secondary 2 Special and agricultural schools: scholars 131. In Hebrew schools scholars were divided as follows: public schools (elementary and kin garten) 60,913; secondary 10,688; technical, agricultural and sp schools 1,532. Yiddish private schools (elementary and kinderga scholars 17,697; secondary schools and training colleges 1,894; v tional, agricultural and special schools 5,267. Hebrew university, Je lem: teaching staff 193; students 595.

**Banking and Finance.**—Revenue (est. 1947–48) £P.21,881,104; ex diture £P.23,559,681; public debt (March 31, 1946) £P.8,585,900; in circulation (July 1, 1947) £P.44,908,000; exchange rate (1947): (Palestine pound) = £1 sterling = 402.7 U.S. cents.

**Trade and Communication.**—Overseas trade (merchandise) 1946: ports £P.70,431,800; exports £P.24,484,900. Roads (1945): for weather 1,551 mi., seasonal 961 mi.; railways (1942) broad gauge mi.; narrow gauge (Hejaz railway) 111 mi. Airways (1946) passen arriving 8,781; leaving 9,180; freight unloaded 112 short tons; lo 82 short tons; mail unloaded 39 short tons; loaded 19 short tons. M vehicles (Dec. 1946) cars 6,169, taxis 1,356, buses 1,536, comme 7,651, motorcycles 2,816, tractors 17. Telephones (June 1947) 25, Radio licences (1947) 103,090.

**Agricultural and Mineral Production.**—Production, 1946 (in short to wheat 86,172; barley 70,604; durrah 40,565; maize (for seed) 63, sesame 8,103; kersennah 6,968; tobacco 926; tomatoes 79,078; pota 52,052; total vegetables 313,343; melons and watermelons 118, olives 8,576; grapes 58,887; bananas 9,780; figs, almonds and other citrus fruits 133,670; groundnut oil 5,802; coconut oil 3,364; marga 4,659; soap 9,934; cement 280,767; beer 7,765,788 U.S. gal.; 1,561,767 U.S. gal.; fish landed (in short tons) 4,329; citrus (cases) oranges 5,012,699; lemons 173,122; grapefruit 892,708.

## Panamá.

A republic of Central America adjoining So America. It is bisected by the Canal Zone, wh is leased to the United States. Area: 28,575 sq.mi., pop. (1 census): 622,576, both exclusive of the Canal Zone, which a population of 51,827. The capital is Panamá city (111,8 Other cities are Colón (44,393), Davíd (9,222), Chitré (4,7 La Chorrea (4,434) and Santiago (4,253). Language: Spani religion: Roman Catholic. President in 1947: Dr. Enrique Jiménez.

**History.**—Announcement of candidacies for the 1948 pr dential election and popular opposition to occupation of air-b sites by the United States dominated the political developme of 1947.

The proadministration Liberal Union coalition chose Domi Díaz Arosemena as its presidential candidate in April; but of its component groups, the National Revolutionary party, d sented and in August selected as its own standard-bearer J Isaac Fábrega, a former minister of foreign affairs. In Nove ber the Democratic Front presented Dr. José Joaquín Vallari ambassador to the U.S., to whom the Renovador party a pledged support, and the Authentic National Revolution party put forth Dr. Arnulfo Arias Madrid, the former presid and ardent nationalist.

The approaching election made the government particula responsive to public opinion, and when the United States fai to withdraw from the air-base sites on expiration of its previ lease, a popular reaction prevented ratification of a new agr ment. The public attitude was expressed by nationalistic dem strations in June, September and December, mostly instiga by student organizations.

The protracted diplomatic negotiations hinged largely on h of time the United States would occupy the 14 sites r a new lease. Panamá's proposal for a ten-year lease, re- ble by renegotiation rather than by option, was rejected he United States on Nov. 12. However, the resignation of ign Minister Ricardo J. Álfaro paved the way for a new ement, signed Dec. 10. This one, authorizing a ten-year pation with an option for five more years (ten more for nore important Río Hato base), was rejected by Panamá's lative assembly on Dec. 22. The rejection was by unani- s vote in the assembly as about 10,000 demonstrators out- protested against the treaty. A willingness to negotiate was expressed by Pres. Jiménez and the new foreign min- , Francisco Arosemena Forte, but the year ended with the ed States evacuating all its establishments within the re- ic.

other foreign relations, Panamá refused to recognize the administration in Nicaragua and expressed disapproval of Allied treaty of peace with Italy, signed in Paris on Feb. 10.

**ucation.**—In 1942 Panamá had 670 primary schools with an enrol- of 74,039; 29 intermediate schools enrolling 8,407 and a national rsity with 847 students. In 1947 the Inter-American university with nrolment of 1,200 students was officially incorporated into the na- l university. As of Jan. 1, 1947, there were 59 motion-picture res with a total seating capacity of 46,630.

**ance.**—The monetary unit is the balboa, maintained at par with the dollar. The national budget for the fiscal year 1946–47 estimated ues and expenditures balancing at $38,178,303. The outstanding nal debt amounted to $15,386,000 in 1946.

**ade and Resources.**—During 1946, exports amounted to $6,800,000 507,137 in 1945) while imports were valued at $56,100,000 ($45,- 25 in 1945). During the first 6 months of 1947, exports totalled 0,000 and imports $28,700,000. Bananas, ordinarily comprising of the exports, suffered heavy storm damage in 1947, but shipments g the first 7 months were normal (approximately 3,000,000 stems). rts were chiefly manufactured goods and construction materials. minary crop forecasts for 1947–48 estimated rice production at 7,000 bu. (2,606,000 in 1945–46); sugar 10,000 tons (9,000 in ); potatoes 68,000 bu. (51,000 in 1946). Exports in 1946 included (41,781,000 lb.), rubber (138 tons), abacá fibre (2,385,124 kg.), e hides (32,653 units).

**mmunications.**—Railroads measured 458 mi. in 1945, and there were 7 mi. of transitable highways (399 mi. unimproved). The new na- l airport, designed to accommodate 80 commercial planes daily, opened to traffic in 1947. The phenomenal growth of the nation's hant marine, through transfers from foreign registry, continued, a total of 1,500 ships (2,000,000 tons) registered as of Feb. 1947.

BLIOGRAPHY.—Pan American Union, *The National Economy of ama* (1947); Sydney Clark, *All the Best in Central America* (1946); Dept. of Commerce, *Foreign Commerce Weekly; Hispano-Americano* xico City). (M. L. M.)

**n-American Highway:** *see* ROADS AND HIGHWAYS.

## n American Union.

Changes in organization and direction marked the development of Pan American Union during 1947. At the same time a first was made in the reorganization of the whole inter-American tem, and extensive studies were undertaken in anticipation of completion of this process at the Ninth International Con- ence of American States, scheduled to convene at Bogotá, ombia, on March 30, 1948.

At the meeting of the governing board of the Pan American ion held on March 12, 1947, Dr. Alberto Lleras, former presi- t of Colombia, was elected director general for the term iring Dec. 31, 1954. He thus became the first Latin American occupy the office, which, since the establishment of the union 1890, had always been filled by a North American. The rd thereby gave effect to the resolution on the reorganization the inter-American system adopted at the Inter-American nference on Problems of War and Peace held at Mexico City 1945, which stipulated that term of office of the direc- general should be ten years, that he should not be suc- ded by a person of the same ionality.

The governing board at the meeting of July 23, 1947, also approved a plan for reorganization of the internal services of the Pan American Union, under which the technical and administrative divisions of the organization would be grouped into five major departments, as follows: international law and organization, economic and social affairs, cultural affairs, information and administrative services.

At the meeting of the governing board held on Nov. 10, 1947, Dr. Juan Bautista de Lavalle of Peru and Dr. José A. Mora of Uruguay, were elected chairman and vice-chairman, respectively, for 1948.

**Inter-American System.**—From Aug. 15 to Sept. 2, 1947, the Inter-American Conference for the Maintenance of Continental Peace and Security met at Petrópolis, near Rio de Janeiro, Brazil. The treaty of reciprocal assistance signed at that meeting gave permanent form to the principles incorporated in the act of Chapultepec signed at Mexico City in 1945. (*See* INTER-AMERICAN DEFENSE CONFERENCE.)

The treaty provided that the governing board of the Pan American Union should act as the provisional organ of consultation until a meeting of the ministers of foreign affairs of the American republics could be arranged. The treaty thus represented the first specific delegation of political powers to the governing board in line with the general principle laid down at the 1945 Mexico City conference.

In anticipation of the Bogotá conference in 1948, the governing board completed preparation of a project for an organic pact of the inter-American system, to embody for the first time in a single instrument the basic features of the international organization of the American republics.

Other projects prepared during 1947 for presentation at Bogotá included a draft declaration of the rights and duties of states and another on the international rights and duties of man; a comprehensive treaty embodying procedures for the pacific settlement of international disputes between American republics, drawn up by the Inter-American Juridical committee of Rio de Janeiro; and a basic agreement of economic co-operation, formulated by the Inter-American Economic and Social council. (*See* also ARGENTINA; FASCISM; INTER-AMERICAN DEFENSE BOARD; UNITED NATIONS.) (W. MR.)

## Paper and Pulp Industry.

The estimated U.S. production of paper and paperboard in 1947 was about 21,000,000 tons—a new high record which did not, however, meet consumption requirements in most branches of the industry.

Table I.—*U.S. Paper Production*

| | 1940 | 1943 | 1946 |
|---|---|---|---|
| Newsprint | 1,056,304 | 811,309 | 775,042 |
| Groundwood | 550,453 | 585,673 | 770,433 |
| Book | 1,666,488 | 1,592,878 | 1,919,400 |
| Writing and cover | 626,396 | 1,020,601 | 1,143,257 |
| Wrapping | 2,500,818 | 2,470,039 | 3,007,396 |
| Tissue | 761,712 | 968,789 | 1,021,688 |
| Building | 682,460 | 877,582 | 1,011,398 |
| Paperboard | 6,449,548 | 8,620,434 | 9,431,941 |
| All other | 189,530 | 88,383 | 98,800 |
| Total—short tons | 14,483,709 | 17,035,688 | 19,179,355 |

The postwar increase in the capacity of paper, paperboard and building board mills covering 1946–48 was estimated at 3,258,600 tons. The capacity of the industry in the United

Table II.—*U.S. Production and Consumption of Paper, Wood Pulp and Pulpwood*

| Year | Paper and Paperboard (short tons) | | Wood Pulp (short tons) | | Receipts of Pulpwood (cords) | | |
|---|---|---|---|---|---|---|---|
| | Production | Consumption | Production | Consumption | Domestic | Imported | Total |
| 1925 | 9,182,204 | 10,590,090 | 3,962,217 | 5,590,304 | 5,005,445 | 1,088,376 | 6,093,821 |
| 1931 | 9,381,840 | 11,403,850 | 4,409,344 | 6,005,718 | 5,896,446 | 826,320 | 6,722,766 |
| 1935 | 10,506,195 | 12,490,886 | 4,925,669 | 6,877,869 | 6,590,942 | 1,037,332 | 7,628,274 |
| 1940 | 14,483,709 | 16,620,632 | 8,959,559 | 9,781,739 | 12,307,138 | 1,435,820 | 13,742,958 |
| 1945 | 17,370,965 | 19,665,487 | 10,167,200 | 10,825,412 | 15,315,000 | 1,699,000 | 17,014,000 |
| 1946 | 19,179,355 | 22,411,476 | 10,605,225 | 12,088,500 | 16,089,560 | 1,728,000 | 17,817,560 |

**Table III.—*U.S. Wood Pulp Production***

(In short tons)

| Year | Unbleached Sulphite | Bleached Sulphite | Total Sulphate | Ground-wood | Soda | All Others | Total |
|---|---|---|---|---|---|---|---|
| 1935 . . | 634,947 | 944,620 | 1,467,749 | 1,355,819 | 485,162 | 144,002 | 5,032,299 |
| 1940 . . | 995,700 | 1,612,089 | 3,747,992 | 1,842,875 | 532,857 | 228,046 | 8,959,559 |
| 1942 . . | 1,213,066 | 1,717,206 | 4,738,266 | 2,276,126 | 462,065 | 376,701 | 10,783,430 |
| 1945 . . | 815,969 | 1,543,762 | 4,471,875 | 2,386,859 | 429,757 | 518,978 | 10,167,200 |
| 1946 . . | 784,391 | 1,692,077 | 4,588,016 | 2,573,166 | 476,211 | 492,666 | 10,606,527 |

States in 1945 was 20,282,050 tons; by the end of 1948 it was expected to reach 23,540,910 tons.

**Canada.**—Total production of paper grade wood pulp was about 10% higher in 1947 than in 1946. The production of newsprint rose by about 8%. There was a small increase in Newfoundland (about 9,300 tons). Among Canada's peacetime industries, pulp and paper continued to stand first in employment, total wages paid, export values, net value of production and capital invested. There were 113 Canadian pulp and paper mills in 1947, of which 35 were newsprint mills.

**Table IV.—*Canadian Paper Production***

| Kind | 1942 | 1945 | 1946 |
|---|---|---|---|
| Newsprint . . . . . . . . . . . . . | 3,256,000 | 3,324,033 | 4,162,000 |
| Book and fine paper . . . . . . . . | 121,000 | 162,198 | 190,000 |
| Wrapping . . . . . . . . . . . . . | 166,000 | 162,175 | 175,000 |
| Paperboard . . . . . . . . . . . . | 619,000 | 541,000 | 616,000 |
| Tissue . . . . . . . . . . . . . | 38,000 | 51,000 | 57,000 |
| Other papers. . . . . . . . . . . . | 41,000 | 66,000 | 80,000 |
| Total (short tons) . . . . . . . . | 4,241,000 | 4,306,406 | 5,280,000 |

**Table V.—*Canadian Wood Pulp Production***

(short tons)

| Year | Bleached Sulphite | Unbleached Sulphite | Sulphate | Soda | Groundwood | Total* |
|---|---|---|---|---|---|---|
| 1935 . . . . . | 374,157 | 644,820 | 236,536 | 20,887 | 2,563,711 | 3,868,341 |
| 1940 . . . . . | 543,987 | 936,558 | 371,569 | 27,698 | 3,368,209 | 5,290,782 |
| 1945 . . . . . | 603,929 | 1,034,755 | 478,740 | 48,396 | 3,380,873 | 5,600,814 |
| 1946 . . . . . | 617,551 | 1,216,783 | 561,324 | 35,109 | 4,056,992 | 6,555,521 |

*Includes chemical pulp screenings.

**United Kingdom.**—The paper industry in Great Britain suffered from the coal shortage during 1947; before this crisis the mills operated at 35% of capacity. Since fuel allocations were cut 50%, the output, particularly of newsprint mills, was reduced to 17.5% of capacity. Imports of papers were limited by the dollar shortage. In 1938 total paper and paperboard production was 2,501,230 tons and imports 1,070,706 tons. In 1946 production was 1,735,190 tons and imports 326,750 tons. In 1938 paper and paperboard exports were 176,441 tons and in 1946, 113,904 tons. (R. G. M.)

**Paprika:** *see* Spices.
**Papua:** *see* British Empire.

**Paraguay.** A landlocked republic in south-central South America, bounded north and east by Brazil, south by Argentina, and west by Bolivia. Area 149,807 sq.mi. Population 1947 (off. est.) 1,200,000. Racially the people are a homogeneous blend of Spanish, Portuguese and Italian stocks, with a good deal of Guaraní Indian blood discernible especially in the remote areas. Official language: Spanish. The Guaraní tongue has survived more than the blood, but is secondary and recessive. Capital and chief centre: Asunción, pop. (1945 est.) 172,400. Other cities: Villarica 30,176, Concepción 16,007, Encarnación 15,610. The official religion is Roman Catholic. President in 1947: Gen. (Marshal) Higinio Morínigo.

**History.**—On Jan. 13, 1947, the Febrerista (leftist) cabinet members broke up the coalition government, leaving the Colorado and military members in charge. The issue was whether President Morínigo would pledge himself not to run for the presidency again, which the Febreristas did not desire. The government ordered the army garrisons at Concepción in the north and the Chaco in the west to arrest all Febrerista officers, whereupon an abortive revolt occurred at Asunción and successful revolts at Concepción and Lopez de Fillipis. Morínigo quested aid from neighbouring governments, but declined t mediation on the ground that it would encourage Communi Keeping his crack cavalry and artillery regiments in the so he sent a conscripted 2nd army by land against Concepción, trusting general command to Col. Federico Smith.

The rebels in the north were led by Col. (ex-president) Ra Franco, and commanded by Lt. Cols. Fabian Zaldivar, Alfr Galleano and Aureliano Mendoza. They established a five-m cabinet and three radio propaganda stations; and were joine May by the two principal naval units, the gunboats "Paragu and "Humaita," commanded by Rolando Ibarra. Working w untrained troops and through difficult terrain, Col. Smith able to capture Concepción at the end of July; but the re army escaped and appeared on the outskirts of the capi Asunción, on Aug. 10, while the gunboats and river stea "Ituzaingo" also threatened the city. The Brazilian ambassa who had attempted to mediate, withdrew to Brazil and fore the end of the Morínigo government; but the loyal and w trained cavalry and artillery defeated the rebels complet within a few days, and the gunboats took refuge in Argent Col. Franco fled by plane, and the revolt came to a sudden e It had been supported by the Liberal party members, many whom were well-to-do exiles in Argentina where they were friendly terms with the anti-Perón propertied class. Presid Perón of Argentina, having given assistance to an unascerta able extent to President Morínigo during the revolt, met w the latter Oct. 28 and negotiated a preliminary economic rangement, said to involve a long-range $55,000,000 loan Paraguay; thus expanding his southern economic bloc, Arg tine-led. The Morínigo government later announced that e tions would be held, both for the presidency and the house representatives, on Feb. 15, 1948.

**Education.**—In 1946 the 2,000 elementary schools, of which a la share give three years' instruction, had at least 65,000 pupils; and t were 6 agricultural (secondary) schools, of which some had had ex sive reorganization under U.S. agricultural advisers. National nor schools and a national junior college were maintained. The ministe education, Dr. Guillermo Enciso Velloso, was named ambassador to United States in 1947.

**Defense.**—Paraguay's strategic situation beside the frontiers of the great rival powers of South America, coupled with its conspicuous re tation for military prowess in two of the three great wars of the co nent, give importance to its armed forces. Prior to the revolt of 1947 army, based on conscription, numbered at least 8,000, and this figure temporarily increased. The (river) navy, guarding Paraguay's much-u fluvial system and communication with the outside world, numbered s 1,400. At least 50% of the national budget is devoted to defense.

**Finance.**—The unit of Paraguayan currency is the guarani, which 1947 was continued stable at 32.4 U.S. cents. All foreign exchange tr actions are controlled by the National Bank of Paraguay. The natio revenues increased during 1946, but were affected in 1947 by the c war. The 1944 budget was some $10,000,000, the national debt b only $22,000,000. Note circulation in 1946 was more than $10,000,

**Trade and Communication.**—Paraguayan exports in 1946 reached a high of $28,277,000, while imports rose to $22,112,000. The chief exp are canned corned beef, cotton fibre, cattle hides, quebracho extract, h wood and cedar logs, tobacco, yerba maté and petitgrain oil. The imp are highly diversified, consisting of cotton and some woollen text machinery, consumers' goods and foodstuffs of temperate zone origin.

The Argentine (Dodero) line of river steamships from Buenos A handles most of Paraguay's freight and passenger traffic; but a Brazi subsidized line connects with Brazilian and Uruguayan ports and g as far north as Corumbá (Brazil). The standard-gauge Central rail of Paraguay (British and Argentine) runs from Asunción south through the best farm and forest areas to connect by car ferries Encarnación-Posadas with the Argentine railways, but its through tr (one train per week) is small. It carries close to 2,000,000 passen and 400,000 tons of freight annually. A Brazilian branch railway f Campo Grande (Matto Grosso) to Concepción in the north of east Paraguay was not yet in operation to any great extent in 1947. Th were in 1947 about 500 mi. of modern highways, of which only were macadam; and Route II, eastward from Asunción, had not b carried through to the Brazilian border, so that there were no effec connections between Paraguay and its friendly northeastern neighbo

Excellent air connections with Asunción are maintained by Pan Am can World Airways, Panair do Brazil, the Corporación Sudameric (Argentine river hydroplanes), and two military lines (Brazilian Argentine). The Paraguayan government sustains a national air line connecting the capital with the north and the Chaco. The number telephones in Paraguay in 1945 was fewer than 4,000, and there w fewer than 200 telegraph offices. There were five radio stations and 16, receiving sets. Automobiles numbered 2,500.

**griculture.**—Paraguay is primarily a cattle country. The cotton crop become the mainstay of the smaller farmers, ranging up to 50,000 ; but the 1947 crop, excellent in volume and quality, could not be 'ested fully because of the protracted revolt. The staple food, and est crop, is mandioca; and bananas and citrus fruits are also staples hough not for export). Paraguay is usually more than self-sufficient ugar production, with yields up to 16,000 tons; and grows some rice.

**anufactures.**—There are important cotton textile mills in central and hern Paraguay, with minor silk and woollen mills. Plywood is a ving forest industry, and vegetable oil crushing is substantial and ving. In addition there is some flour milling, beer brewing, and pro- ion of glass bottles, matches, tobacco manufactures, furniture, soap and wear.

**ines and Forests.**—There are no minerals in Paraguay, and the active oleum explorations in the Chaco by the Union Oil Co. of California not yielded practical results when 1947 ended. Limestone and manese exist in good quantity and quality, but the absence of fuels and es prevents the establishment of cement and smelting plants. The nsive Paraguayan stands of timber are scattered and not uniform, and wood is too hard for many common uses; but the floating of logs to entina continues on a fairly large scale. (W. Ft.)

## rents and Teachers, National Congress of.

e National Congress of Parents and Teachers, the P.T.A., s founded in 1897 as the National Congress of Mothers. As April 1947 its membership was composed of 4,486,855 ents, teachers and other interested persons, of whom more n 1,100,000 were men. These members were organized into out 28,000 local parent-teacher associations, functioning in h of the 48 states, the District of Columbia, and Hawaii.

The P.T.A. recognizes no social, economic, political, cultural, religious distinctions among its membership. Anyone may n who is concerned with promoting the welfare of children d youth in home, school, church and community.

School education, health, world understanding and parent and nily life education were the four areas of a national fourint program selected for special emphasis by the administran of the National congress. In 1947 objectives were estabhed for each area and definite projects for achieving those jectives were initiated by local P.T.A.'s throughout the untry.

In the crucial area of school education the parent-teacher embership was particularly active in working for legislation at would provide federal financial aid for public, tax-supported hools. A united effort was also made to alleviate the shortage teachers, to raise the level of teachers' salaries, to elevate e prestige of the profession and to bring about a more equal stribution of educational opportunities for all children. Partly a result of parent-teacher influence, many state legislatures ssed measures that increased teachers' salaries.

A special project to aid teachers of war-torn countries was ccessfully carried out by P.T.A.'s in the spring of 1947. Aproximately 2,600 kits were filled with personal and school-room cessities at a cost of $65,000 and were shipped overseas.

The National congress carried on a far-reaching and codinated program in the field of health. National, state and cal parent-teacher leaders worked together to bring about the tension of public health services to all communities. As in st years, the congress supported school-lunch legislation and onsored the annual Summer Round-Up of the Children, a edical checkup of children entering school for the first time. fety education in all its phases was also stressed.

World understanding has long been a major objective of the rent-teacher organization. In 1947 the president of the National congress served as a member of the U.S. national commison for the United Nations Educational, Scientific and Cultural ganization, and an official observer for the congress attended ssions of the United Nations.

The National Congress of Parents and Teachers co-operated th Northwestern university at Evanston, Ill., in establishing three-year course of study and research in the field of home d school relationships. Starting in Sept. 1948 this course was to be conducted as part of the regular curriculum of the university's school of education and would be implemented by a grant from the National congress. During the summer of 1947 the parent-teacher organization also joined Northwestern university in sponsoring a summer workshop in parent-teacher leadership and a conference on language in human relations.

PARAGUAYAN revolutionists who took part in the 1947 revolt against the government of Gen. Higinio Morínigo. They wished to be photographed at prayer to dispel charges of communist domination in their movement

To promote parent and family life education, the National congress conducts an extensive publications program of books, leaflets, pamphlets and other informational material. Particularly important are the monthly *National Parent-Teacher: The P.T.A. Magazine* and a monthly newssheet, the *National Congress Bulletin.* The 50th birthday of the organization was marked by the publication of a *Jubilee History* of the parent-teacher movement from its beginnings. Also during 1947 the National congress again sponsored *The Baxters,* a weekly radio program.

The office of the National Congress of Parents and Teachers was in 1947 located at 600 S. Michigan Blvd., Chicago 5, Ill. (M. W. H.)

## Paris.

Capital and largest city of France, pop. (1946) 2,725,374.

The municipal elections of Oct. 19, 1947, produced a municipal council as follows: R.P.F. (*Rassemblement du Peuple Français*—Gaullists) 52; Communists 25; Socialists 8; M.R.P. (*Mouvement Républicain Populaire*—Catholic Progressives) 5. The former council was composed of Communists 27; M.R.P. 14; Socialists 12; other groups, mainly of the right, 37. On Nov. 17, Pierre de Gaulle, younger brother of Gen. Charles de Gaulle, was elected president of the municipal council, by 51 votes to 25 for a Communist candidate and 8 for a Socialist. The Communists walked out of the council chamber after a violent scene in which they accused the R.P.F. councillors of being "Vichyites" and "collaborators."

During 1947 great progress was made in reopening the museums of Paris. From the Louvre collection the older schools of art were on exhibition at the Petit Palais and the impressionists at the Jeu de Paume while big changes were being made in their normal home. The Galérie du Louvre was reopened on Oct. 17, after being completely redecorated. All the national collections

LEAFLETS and loudspeakers on radio trucks brought the news of the day to Parisians during the seven-day lock-out following a slowdown by press operators in Paris early in 1947

from the far east were being regrouped in the Musée Guimet, which was already partly open.

The staffs of many of the big department stores struck on June 19 for higher pay, returning on June 27 after their demands had been substantially conceded. On Oct. 11 a small breakaway union of Métro (underground railway) employees struck for higher wages; this action was supported the following day when the Confédération Générale du Travail came out in favour of wage increases for all transport workers in the Paris region. The strike came to an end on Oct. 20, after the unions and the government had agreed upon a 25% wage increase. During the stoppage the government organized an improvised service of trucks and other vehicles. Further strikes which caused stoppages in many industries in the Paris region occurred during November.

The number of students at the Sorbonne reached higher figures than ever before—45,414, of which 1,520 were foreigners.

During the summer meetings were held between the foreign ministers of Britain, France and the U.S.S.R., and from July to September the Committee of European Economic Co-ordination on the U.S. offer of aid to Europe met at the Quai d'Orsay.

**Paris Peace Conference:** *see* PEACE TREATIES.
**Parks and Monuments:** *see* NATIONAL PARKS AND MONUMENTS.

## Parliament, Houses of.

During the second session of parliament, which was prorogued on Oct. 20, 1947, 54 public acts were added to the statute book, compared with more than 80 in the first session. These included two nationalization measures (of inland transport and of the electricity supply industry); bills for the better planning and control of development and use of the land; for continuing the centralized buying of cotton; to continue conscription for five years from Dec. 31, 1948; and for company law reform. The transport and electricity bills were passed through the house of commons under the "guillotine," used for the first time in the standing committees, whereby amendments are voted on without discussion.

The king, accompanied by the queen and Princess Elizabeth, opened the third session on Oct. 21. The speech from the throne, outlining the proposed legislation, mentioned bills to nationalize the gas industry; to amend the Parliament act, 1911; to abol the Poor law; and to provide a new basis of exchequer gra to local authorities.

Important debates in the house of commons not involv legislation included one for setting up a royal commission on control, management and ownership of the press; and anot on the constitution of the committee of privileges which quires into complaints of breach of privilege. Its chairman h hitherto usually been the leader of the house, but when Herb Morrison sought to delegate this duty to a minister of low status, a change which the house approved after a stormy bate, Winston Churchill, as leader of the opposition, also wi drew. In October, on the appointment of the committee for t third session, W. J. Brown, Independent, made a further p test on the constitution of the committee. Three inquiries we held and reported on. W. J. Brown had complained of pressu being brought to bear on him by a trade union.

In April, Garry Allighan, Labour member for Gravesen wrote an article in *World's Press News* on the manner in whi newspapers obtained information from members. The arti contained allegations against members which were proved to unfounded. The committee declared that Allighan hims had sold reports of confidential party meetings to the *Eveni Standard.* The committee found him guilty of "an aggravat contempt of the house and . . . a gross breach of privilege." a free vote of the house in October he was expelled by 1 votes to 75. Evelyn Walkden, Labour member for Doncast who also supplied confidential reports, was "severely rep manded." The editor and political correspondent of the *Eveni News* were called to the bar of the house for refusing to answ questions put by the committee, and the editor of *World's Pre News* was called to the bar and reprimanded by the speaker.

The cabinet was reshuffled twice; once in April, when Lo Pethick-Lawrence (secretary of state for India and Burma) signed and was succeeded by the earl of Listowel, and Lo Pakenham succeeded John B. Hynd as the minister responsi for the occupation of Germany and Austria; and again in Oct ber when 12 ministers resigned. Sir Stafford Cripps was a pointed minister for economic affairs, and was succeeded at t board of trade by Harold Wilson. Emanuel Shinwell left t ministry of fuel and power to become secretary of state for w without a seat in the cabinet. Philip Noel-Baker entered t cabinet as secretary of state for commonwealth relations (fo merly the dominions office), and Arthur Woodburn, secretary state for Scotland.

Hugh Dalton, as chancellor of the exchequer, introduced tw budgets during the year, on April 15 and on Nov. 12. On No 13, after apologizing to the house of commons for "a grave i discretion" in revealing his budget proposals to a newspap correspondent before his speech, Dalton resigned from the go ernment and was succeeded by Sir Stafford Cripps, who retaine general responsibility for economic affairs.

On Dec. 17, the house of commons voted allowances of £25 000 to Princess Elizabeth (duchess of Edinburgh), in addition t £15,000 granted under the Civil List act, 1937, and £10,000 t the duke of Edinburgh. A Labour back-bench amendment t reduce the grant to Princess Elizabeth by £5,000 was defeate by 291 votes to 165, and the select committee's proposals we carried without a division.

The house of lords met for one day during the summer reces to discuss the economic situation, but the government coul not agree to a general debate. On Nov. 10, Herbert Morriso lord president of the council, moved the second reading of two-clause bill to reduce the veto of the house of lords, whic had been fixed in the Parliament act, 1911, as two years, to o year. An opposition amendment to reject the bill was defeate

345 votes to 194.

In the house of lords Viscounts Wavell and Mountbatten of rma were created earls; Lord Jowitt, the lord chancellor, and nley Bruce, former prime minister of Australia, were created counts, and 15 new baronies were created. (*See* also Cabinet embers; Government Departments and Bureaus.)

(L. Du.)

**rodi, Alexandre** (1901– ), French government official, was born June 1, in Paris. He udied law and became master of appeals in the French Coun- of State and later secretary general of the National Eco- mic council; in 1938 he was named director general of the nistry of labour. During the German occupation, he was tive in the underground. He was president of the under- ound press commission, one of the guiding spirits of the Paris urrection in Aug. 1944 and minister of labour and social se- rity in Gen. Charles de Gaulle's provisional government ept. 1944–Nov. 1945). Parodi was named permanent delegate pril 12, 1946) to the United Nations Security council, replac- Henri Bonnet. On May 17, he became president of the coun- under the rotation plan. He supported Dr. Oscar Lange's oposal that the U.N. member states break off diplomatic rela- ons with Spain on grounds that the Franco regime was a threat world peace but sided with the U.S. and Britain in discussions Greece and on atomic energy. In 1947, Parodi was named to embership on the Security council's new commission for con- ntional armaments, and on April 28 of that year he was ected as one of the 7 vice-presidents of the assembly's 14-man neral committee.

**atel, Vallabhbhai** (1876– ), Hindu government official, who studied law in London, de- loped a flourishing practice in India as a criminal lawyer. fter meeting Gandhi in 1915, Patel joined the latter's fledgling ovement and in the succeeding years built up the All-India ongress party into a powerful political machine.

In the party machinery, Gandhi made policy or laid down a ne to follow and Patel put it through. An able organizer as ell as an astute political "boss," Patel managed the election mpaign of 1937, in which the Congress party scored an over- helming victory, as well as many civil disobedience campaigns.

Patel's revolutionary activities were not appreciated by the ritish authorities and he spent at least half of the period from 931 to 1947 in prison. By 1947, he rose to eminence as one of ne powers to reckon with in Indian politics. On one side, he ad the respect of the Indian peasantry who had bestowed upon im the unofficial title of "Sardar" (generalissimo). On the ther, he had the confidence of wealthy Hindu and Parsee indus- ialists who contributed heavily to the Congress party.

In the first all-Indian government formed by Jawaharlal ehru on Sept. 2, 1946, Patel was made minister of home affairs, formation and broadcasting. After partition of India into indu and Moslem states, he was given the same portfolio in ne government of the dominion of India.

**atents.** The United States patent office in the year 1947 granted a total of 22,433 patents, which included ,102 for designs, 52 for plants and 130 reissues. This was a ecrease of 2,342 from the total of 24,775 patents granted in 946.

Applications for patents filed in the U.S. patent office for the rst 11 months of 1947 totalled 76,517. For the entire year 946, a total of 91,994 applications were filed; nearly 250,000 pplications had been received from Jan. 1, 1945. Approxi- ately 150,000 applications were awaiting action by the office in Dec. 1947; in addition, about 70,000 cases were awaiting response from applicants and attorneys to office actions. In an effort to cope with this backlog the patent office was expanding its staff of examiner personnel, training the recruits and instituting administrative and other reforms.

Trade-marks registered (8,981) and renewed (6,140) during 1947 totalled 15,121, compared with 13,841 in 1946. Applications for registration of trade-marks filed in the first 11 months of 1947 (26,698) and for renewals (4,562) totalled 31,260, nearly 4,000 more than the record filing for the entire year 1946. Some of this increase is attributable to the New Trade-mark act which became effective July 5, 1947. Rules of practice in trade-mark cases, for use under the new act, had been prepared and together with the statutes and other information were published in a newly styled booklet.

Approximately 19,000 patents had been entered on the register of patents available for licence or sale after it was established in May 1945. About 7,000 were added during 1947. Patents listed on the register are published in the *Official Gazette*.

The patent office had by 1947 granted more than 2,430,000 patents, printed copies of which may be purchased for 25 cents each; designs and trade-marks cost 10 cents each. During the year ended June 30, 1947, nearly 5,500,000 copies of patents were distributed, 500,000 going to libraries and 1,250,000 to foreign countries under exchange agreements.

During 1947 the patent office was actively engaged in the administration of the Boykin act (public law 690, 79th congress) which extends temporarily the time for filing applications for patents, and for taking other actions in the patent office, not capable of being done during World War II. Certain portions of this act were extended to a date not later than Feb. 29, 1948, by public law 220, 80th congress. After congress ratified the treaties of peace with Italy, Hungary, Bulgaria and Rumania, legislation (public law 380, 80th congress) was enacted to carry into effect certain parts of the treaties relating to patents. Since this law provides for the filing of patent applications, it is administered by the patent office. With certain limitations it also permits filing by nationals of Germany and Japan.

Innovations and improvements in the patent office made during the year to carry out a policy of better service to the public include institution of a perpetual inventory system of printed copies of patents, availability of complete, prewar search room facilities on Saturdays and evenings, the printing on copies of patents of references cited during pendency of the application, and abolition of certain restrictions on interviews with examiners.

Net receipts for the fiscal year ended June 30, 1947, were $4,815,260.47, an increase over the preceding year of $312,977.30, and obligations incurred under all patent office appropriations amounted to $7,262,472.27 as compared with $5,914,470.40 for the preceding year.

(L. C. K.)

**Paul I** (1901– ), king of the Hellenes, was born on Dec. 14 in Athens, second son of King Constantine and Queen Sophia. On June 11, 1917, he left Greece with his father and his elder brother, the future King George II; he came back to Athens on Dec. 6, 1920, after the Greek people had recalled Constantine to the throne. Having been graduated from the naval college Prince Paul joined the Greek navy, wherein lay his principal interest. When King Constantine abdicated in 1922 and was succeeded by Prince George, Prince Paul became *diadoch* or heir presumptive. During King George's exile (1924–35), Prince Paul spent many years in England and visited the United States. A keen sportsman, he gained his pilot's wings in 1936. He returned to Greece when, after the restoration of monarchy, he resumed his service with the Greek navy. On Jan. 9, 1938, he married Princess Frederika of Brunswick (born April 11, 1917). They had one son, Prince Constantine, born at Psychico, on June 2, 1940, and two daughters, Princess Sophia, born in 1939, and Princess Irene, born in Capetown in 1942. Prince Paul succeeded to the throne on the sudden death of King George II on April 1, 1947.

**"Pay-as-you-earn" System:** *see* TAXATION.

**Peace Treaties.** The peace treaties with Italy, Rumania, Bulgaria, Hungary and Finland, completed by the Council of Foreign Ministers in Dec. 1946, were signed on Feb. 10, 1947; that with Italy at Paris, the others at Moscow. Repeated threats to the contrary, the Yugoslav government signed the Italian treaty, which the Italian Constituent assembly had declined to accept or reject.

At Paris the Italian government protested against the "imposed" treaty, and Foreign Minister Count Carlo Sforza urged Italy's claim to peaceful revision. Agitation for revision had thus begun before the treaty came into force. On July 31 the Italian Constituent assembly appealed to France not to annex the Alpine territories assigned to it. In a message of Aug. 2 Secretary of State Marshall encouraged Italy to seek revision of the treaty through the United Nations or in bilateral negotiations. Panamá, Ecuador and Costa Rica had previously protested the terms of the treaty, and on Aug. 21 seven Latin American countries, led by Argentina, introduced a resolution asking the General assembly of the United Nations to recommend its revision. This resolution, placed on the assembly's agenda over the opposition of the soviet-led bloc, failed to come up during the second regular session.

The treaties came into force on Sept. 15, 1947, having been ratified by the United Kingdom on April 29, by the United States on June 14, by France on June 17, and, after long uncertainty as to its intentions, by the Soviet Union on Aug. 29. Despite violent criticisms, the treaty was ratified by the Italian Constituent assembly on July 31 by a vote of 262–68. Hungarian, Rumanian, Bulgarian and Finnish ratifications were completed by late August, and on Sept. 15 the five former axis states were again legally at peace and eligible for admission to the United Nations. The implied promise of membership was not fulfilled during 1947, however, because of disagreements among the great powers.

Under the treaties soviet forces were to evacuate Bulgaria, and British and U.S. forces were to leave Italy, within 90 days, while an unspecified number of soviet troops could remain in Hungary and Rumania to maintain lines of communication with soviet forces in Austria. In December the soviet government announced evacuation of Bulgaria. The final withdrawal of U.S. troops from Italy, first announced for Dec. 2, was hastily postponed during a period of sharp internal strife in Italy, until Dec. 14.

The shares of the Italian navy assigned to them under the treaty were renounced by the U.S. and British governments on Oct. 4 and Nov. 3. To this extent Italian pride was salved, and the Italian government was spared the expense of repairing and outfitting these vessels, which instead were scrapped. On Dec. 16 the four major Allies allowed the Italian government to scrap its remaining submarines instead of sinking them at sea. In October the Yugoslav government renounced $25,000,000 in reparations allotted to it under the treaty with Bulgaria.

The Italo-Austrian agreement on the South Tyrol was reported to be working moderately well. Use of German in education, administration and daily life was fully protected, in contrast to pre-1943 conditions, but there was no agreement concerning the repatriation of former inhabitants who had b moved to Germany and Austria under the German-Italian agr ment of 1940.

Coming into force of the Italian treaty gave effect to minor Alpine areas assigned to France except for Tende-Brig the only inhabited area, which, under French constitutional pr tice, became part of France after a plebiscite held on Oct. 11

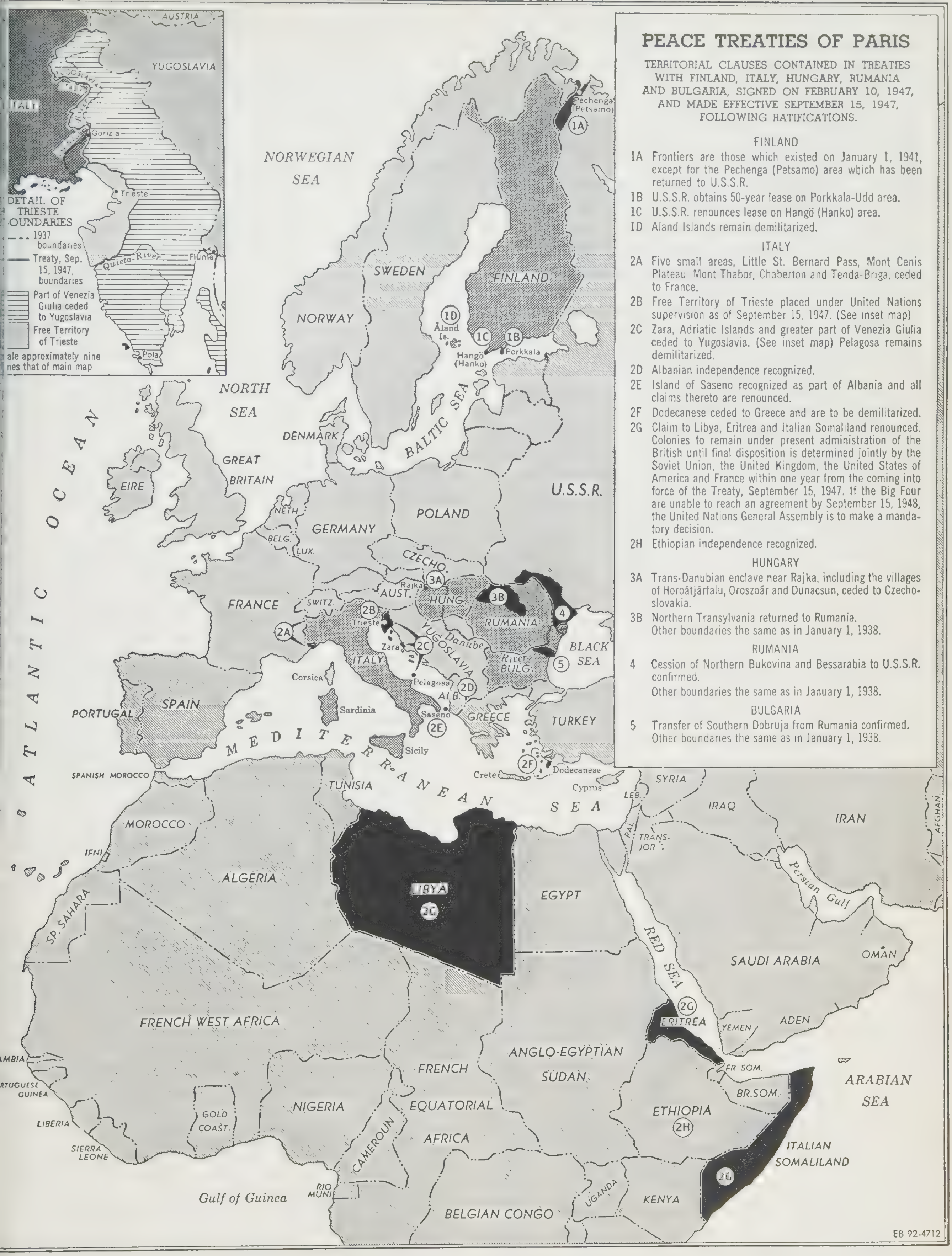
By an agreement of June 1946 the future of the forn Italian colonies was to be determined in the first instance the four major Allies, within one year of the coming into fo of the treaty. The British government invited France, U.S.S.R. and the United States to confer on this problem London on June 6. On June 5, however, the conference w called off, because the soviet government held that negot tions could begin only after the treaty had been ratified. Me ing intermittently from Oct. 3–29, the deputies and the co mission of investigation agreed to grant hearings on the futu of the colonies to all signatories of the treaty, plus Egypt. Oct. 29 the French delegation circulated a memorandum p posing rectifications in the frontier between Eritrea and Fren Somaliland, in addition to earlier and extensive claims to we ern and southern Tripolitania. After long debates the comm sion agreed on a schedule for its visits to the colonies and s June 7, 1948, as the deadline for its report to the deputies.

During March and April a four-power commission assist by Italian and Yugoslav representatives marked out the pr visional boundaries between Italy, Yugoslavia and the futu Free Territory of Trieste. Meanwhile some 90% of the peop of Pola, assigned by the treaty to Yugoslav sovereignty, m grated to Italy. Serious incidents occurred on Sept. 15–16 wh Yugoslav troops attempted to advance beyond the provision demarcation lines in Venezia Giulia. British and U.S. forces 5,000 men each took up positions in the city of Trieste and i immediate environs while Yugoslav forces continued to occup the part of Istria assigned to the Free Territory. In the absen of great-power agreement on a governor for the territory, Angl U.S. and Yugoslav military authorities continued to administ the area in two disjointed segments. (*See* TRIESTE, THE FR TERRITORY OF.)

On July 11 the United States government took the first form step toward drafting a peace treaty with Japan. It propose that a conference of the 11 countries represented in the F Eastern commission (Australia, Canada, China, France, Indi Netherlands, New Zealand, Philippines, United Kingdon U.S.S.R., United States) meet on Aug. 17 at San Francisc Calif., or Washington, D.C., to prepare a draft treaty, whic would then be submitted to a general conference of countries a war with Japan. Decisions in the preliminary conference, th U.S. held, should be adopted by a simple two-thirds' majorit without giving the great powers veto rights.

The proposal met with general approval except on the part o China and the Soviet Union. A Chinese note of July 24 pro posed that decisions be adopted by a vote of two-thirds, includ ing the votes of three out of the four great powers (China United Kingdom, U.S.S.R., United States). On July 22 th soviet government, denouncing the U.S. proposal as a "viola tion" of the Potsdam agreement on treaty procedure, insiste that the treaty be drafted by the four great powers, each of th latter to retain the veto right. It also maintained that only th four powers, by agreement, could issue an invitation to a con ference. The United States government denied that the Pots dam agreement applied to the drafting of the Japanese treat and insisted that the 11 states represented in the Far Easter commission had a special interest in all matters relating to th treatment of Japan.

A compromise was advanced informally on Oct. 18 by th



## PEACE TREATIES OF PARIS

TERRITORIAL CLAUSES CONTAINED IN TREATIES WITH FINLAND, ITALY, HUNGARY, RUMANIA AND BULGARIA, SIGNED ON FEBRUARY 10, 1947, AND MADE EFFECTIVE SEPTEMBER 15, 1947, FOLLOWING RATIFICATIONS.

FINLAND

1A Frontiers are those which existed on January 1, 1941, except for the Pechenga (Petsamo) area wbich has been returned to U.S.S.R.

1B U.S.S.R. obtains 50-year lease on Porkkala-Udd area.

1C U.S.S.R. renounces lease on Hangö (Hanko) area.

1D Aland Islands remain demilitarized.

ITALY

2A Five small areas, Little St. Bernard Pass, Mont Cenis Plateau Mont Thabor, Chaberton and Tenda-Briga, ceded to France.

2B Free Territory of Trieste placed under United Nations supervision as of September 15, 1947. (See inset map)

2C Zara, Adriatic Islands and greater part of Venezia Giulia ceded to Yugoslavia. (See inset map) Pelagosa remains demilitarized.

2D Albanian independence recognized.

2E Island of Saseno recognized as part of Albania and all claims thereto are renounced.

2F Dodecanese ceded to Greece and are to be demilitarized.

2G Claim to Libya, Eritrea and Italian Somaliland renounced. Colonies to remain under present administration of the British until final disposition is determined jointly by the Soviet Union, the United Kingdom, the United States of America and France within one year from the coming into force of the Treaty, September 15, 1947. If the Big Four are unable to reach an agreement by September 15, 1948, the United Nations General Assembly is to make a mandatory decision.

2H Ethiopian independence recognized.

HUNGARY

3A Trans-Danubian enclave near Rajka, including the villages of Horoátjárfalu, Oroszoár and Dunacsun, ceded to Czechoslovakia.

3B Northern Transylvania returned to Rumania.
Other boundaries the same as in January 1, 1938.

RUMANIA

4 Cession of Northern Bukovina and Bessarabia to U.S.S.R. confirmed.
Other boundaries the same as in January 1, 1938.

BULGARIA

5 Transfer of Southern Dobruja from Rumania confirmed.
Other boundaries the same as in January 1, 1938.

inese foreign minister, Wang Shih-chieh, under which the eaty would be drafted by 11 states, with retention of the eat-power veto. It was intimated that China would not attend e conference without soviet participation, since such a step might be interpreted as a derogation from the agreement not to enter into separate negotiations with Japan (article 2, Sino-Soviet treaty, Aug. 14, 1945). Formally transmitted to the other three governments on Nov. 17, this proposal was rejected by the soviet government, which insisted upon exclusive competence of the four powers, and by the British government, which was even more determined since the Canberra conference not to impose a subordinate role upon the British dominions in making peace with Japan.

The British Commonwealth conference, held at Canberra between Aug. 26 and Sept. 1, had also shown that the commonwealth governments, five of them prospective members of the 11-power conference, were in agreement on the broad lines of the peace, especially on the necessity for complete demilitarization and continuing supervision of Japan. Some differences were apparent over the extent to which reparations should be exacted.

Upon the adoption of a new constitution, by which Japan was declared disarmed "forever," it was suggested in several quarters that Japan's security should be placed under a United Nations guarantee. There were also persistent reports that the United States would seek a strategic trusteeship over the Ryukyu Islands, or at least over Okinawa. Chinese circles were reported divided on whether to press China's claim to the Ryukyus. U.S. and British commonwealth thinking was reported to be turning against the idea of large-scale removals of Japanese industrial equipment as reparation, in favour of promoting a larger Japanese contribution to the development of the despoiled nations of the far east through deliveries from current production and through revival of Japanese trade. Unofficial Japanese views also favoured current deliveries as against removals of capital equipment. (*See* articles on individual nations concerned; *see* also FOREIGN MINISTERS' CONFERENCES; INTERNATIONAL LAW.) (P. E. M.)

**Peaches:** *see* FRUIT.

**Peanuts.** The 1947 production of peanuts in the United States was estimated at 2,251,000,000 lb.—the sixth consecutive crop of more than 2,000,000,000 lb. The crop compared with 2,038,355,000 lb. harvested in 1946 and a ten-year average of 1,672,885,000 lb. The 1947 yield was 667 lb. per ac. compared with 649 lb. in 1946 and 719 lb. for the ten-year average. Acreage was 3,378,000 compared with 2,383,000 for the previous ten years and 1,900,000 ac. in the prewar decade. The top yields were harvested in Virginia, 1,230 lb. per ac., North Carolina 1,175 lb. and New Mexico, 1,100 lb. In Georgia, the leading peanut state, the average yield was 715 lb. per ac. and in Alabama 650 lb.

*U.S. Peanut Production 1947, 1946 and 10-yr. Average, 1936–45*

(In thousands of pounds)

| State | 1947 | 1946 | 10-yr. average |
|---|---|---|---|
| Georgia | 780,780 | 716,900 | 561,373 |
| Texas | 372,725 | 395,005 | 211,538 |
| North Carolina | 343,100 | 272,875 | 304,772 |
| Alabama | 293,800 | 259,600 | 269,178 |
| Virginia | 199,260 | 191,250 | 169,892 |
| Oklahoma | 151,125 | 117,130 | 49,150 |
| Florida | 65,625 | 46,500 | 57,460 |
| South Carolina | 16,900 | 16,900 | 15,831 |
| New Mexico | 15,400 | 8,200 | 6,836 |
| Mississippi | 4,875 | 5,250 | 10,584 |
| Tennessee | 3,750 | 4,250 | 6,322 |
| Arkansas | 2,800 | 3,375 | 7,882 |
| Louisiana | 1,500 | 1,120 | 4,118 |

The price of peanuts, which at the beginning of 1947 stood at an average of about $8.90 per 100 lb., rose to $10 in May and then declined slightly. The government supported peanut prices by purchases through growers co-operation associations at about the same rate, $172 per ton, as in 1946. Loans could be made until Jan. 1948.

World peanut production in 1947 was estimated at 9,800,000 tons by the U.S. department of agriculture—a small increase over 1946, but less than the 10,160,000-ton record of 1943 and slightly above the prewar average of 9,530,000 tons for 1935–39. Increased production in the United States, India, Netherlands Indies and French Africa slightly overbalanced the reducti in China, Nigeria and Argentina. The greatest development peanut growing was in Belgian Congo where the acreage h been doubled since 1939. The British government provi tractor equipment, and the 64,000-ton crop of 1946 was pected to increase to more than 680,000 tons by 1952. (*See* a CHEMURGY; FOOD RESEARCH.) (J. C. Ms.)

**Pears:** *see* FRUIT.

**Peat.** There is little if any demand for peat for fuel in t United States, it being mainly used for soil impro ment, either added directly or as a constituent of mixed f tilizer, where it also serves to keep the fertilizer from caki The domestic industry was recovering from the adverse effe of World War II, with production increasing from 97,000 sh tons in 1944 to 107,000 tons in 1945 and 140,700 tons in 19 At the same time imports rose from 64,383 tons to 77,673 t and 84,078 tons. While the domestic output accounted for 6 of the supply on a tonnage basis, imports comprised more th 70% of the total value. (G. A. Ro.)

**Pecans:** *see* NUTS.
**Pemba:** *see* BRITISH EAST AFRICA.
**Penicillin:** *see* CHEMOTHERAPY; MEDICINE; UROLOGY.

**Pennsylvania.** A middle Atlantic state of the U.S. and o of the original 13 states of the union, pop larly known as the "Keystone state." Area, 45,333 sq.mi., i cluding 288 sq.mi. of inland water; pop. (1940) 9,900,180, whom 8,453,729 were native-born white, 973,260 foreign-bo white and 470,172 Negroes. The urban population in 1940 nu bered 6,586,877 and the rural 3,313,303. Capital, Harrisbu (83,893). Cities with a larger population: Philadelphia (1,93 334); Pittsburgh (671,659); Scranton (140,404); Erie (11 955); Reading (110,568); Allentown (96,904); Wilkes-Bar (86,236). The Pennsylvania state planning board estimated t state's total population including its citizens in military servi as of Aug. 1946, at 10,238,012. The U.S. census estimate civilian population, July 1, 1947, was 10,281,000.

**History.**—Elected to the U.S. senate, Edward Martin r signed the gubernatorial chair Jan. 2, 1947, and was followed Lieutenant Governor John C. Bell, who headed the interi administration until James H. Duff was inaugurated as Pennsy vania's 34th governor on Jan. 21.

The 1947 legislature made extensive appropriations for t construction of mental hospitals, for public health, conservatio education, highway construction and veterans' aid. Emergen taxes were levied on a variety of luxury items. A Tax Equaliz tion commission was created to study the structure of state a local tax systems.

Implementing the conservation program begun in 1945, a la was enacted to control certain coal stripping practices in t anthracite field. The regulations, designed to prevent the poll tion of the state streams by communities and industries, we vigorously enforced.

The high prosperity of the state is reflected in the records f both agricultural and industrial production in 1947. Farm i come reached a record high. Factory pay rolls for the first ni months of 1947 were 24% above those for the same period 1946. Employment made a new peacetime record. The Pennsy vania state employment service placed 6,500 handicapped pe sons during the first nine months of 1947.

A significant special election of the year attracting nation interest was the contest between Franklin H. Lichtenwalte (Rep.), speaker of the house, and Phil H. Storch (Dem.) f

Bucks-Lehigh 8th congressional district seat left vacant by death of Charles L. Gerlach. Polling a heavy rural vote, ntenwalter won by a majority of 16,000. Both Democratic Republican presidential nominating conventions were sched- l for Philadelphia's Convention hall in 1948.

he principal officers in 1947 included: James H. Duff, gov- or; Daniel B. Strickler, lieutenant governor; T. McKeen dsey, attorney-general; William S. Livengood, Jr., secretary nternal affairs; G. Harold Wagner, auditor general; Ramsey Black, state treasurer; and George W. Maxey, chief justice.

**ducation.**—Statistics for 1945–1946, the latest year for which com- e figures were available, show an enrolment of 1,521,213 pupils in public schools of Pennsylvania, including 40,748 in the kindergarten, 348 in the elementary division and 563,117 in the secondary schools. ilarly, there were 589 kindergarten teachers, 33,090 elementary teach- 23,806 giving instruction in high schools and 1,962 supervising offi- . The total expenditure, including current expense, capital outlay, debt service was $224,117,721, of which $187,857,977 was for ent expenses. School districts supplied 76% of their receipts from taxation, with the state and federal governments contributing the aining 24%.

**ocial Insurance and Assistance, Public Welfare and Related Programs.**— ing 1947, expenditures by the department of public assistance totalled 4,000,000, including $68,000,000 state funds and $36,000,000 fed- funds. The assistance rolls contained an average of 90,000 old-age stance cases, 38,000 cases receiving aid to dependent children, 30,000 eral assistance cases, 14,000 blind pensioners.

he state maintains eight penal and correctional institutions for the port of which a biennial appropriation of $12,000,000 was made for 7–49. In addition, it owns and operates 10 medical and surgical pitals, which received an appropriation of $6,500,000; 4 institutions the feeble-minded and epileptic, $8,300,000; 18 mental hospitals, ,000,000; and contributed $12,781,275 for the aid of privately- rated hospitals and homes.

**ommunications.**—Of the approximately 100,000 mi. of highways in 7, 40,900 mi. were on the highway system and were under the super- on of the Pennsylvania department of highways. Included in this l were 683 mi. in the cities of Pennsylvania and 2,147 mi. in the oughs. As of Nov. 30, 1947, 36,400 mi. were of improved type, leav- 4,500 mi. unimproved. In addition, there were 160 mi. of superhigh- operated by the Pennsylvania Turnpike commission.

**anking and Finance.**—On Oct. 6, 1947, there were 360 state banks, uding 8 savings banks, with assets of $4,870,818,107.37. These e banks had total deposits of $4,378,020,458.65.

n addition, there were as of Dec. 31, 1946, 802 building and loan ociations with assets of $390,698,946.42.

On Oct. 6, 1947, there were 655 national banks located in Pennsyl- ia, with assets of $7,043,991,000. The deposits of these national ks totalled $6,307,490,000.

Appropriations from the general fund and motor licence fund for the nnium ending May 31, 1949, were $769,280,749. The estimated re- pts were $895,721,080. The gross debt Oct. 31, 1947, was $74,688,000, ich securities in the sinking fund reduced to a net of $38,269,753.

**Agriculture.**—The total gross farm income for 1946 was $748,987,000, luding $648,898,000 in cash receipts from farm marketings and $27,- 3,000 in federal government payments.

Table I.—*Leading Crops of Pennsylvania, 1946 and 1947*

| Crop | Production 1946 | Production 1947 | Acreage 1947 | Yield per acre 1947 | Value 1947 |
|---|---|---|---|---|---|
| n, bu. | 59,340,000 | 57,460,000 | 1,352,000 | 42.5 | $140,777,000 |
| wheat, bu. | 19,912,000 | 22,296,000 | 929,000 | 24.0 | 53,510,000 |
| ts, bu. | 30,033,000 | 19,865,000 | 685,000 | 29.0 | 21,852,000 |
| ley, bu. | 3,942,000 | 4,059,000 | 123,000 | 33.0 | 6,088,000 |
| , bu. | 341,000 | 279,000 | 18,000 | 15.5 | 558,000 |
| kwheat, bu. | 2,394,000 | 1,938,000 | 125,000 | 15.5 | 3,682,000 |
| atoes, bu. white) | 20,066,000 | 17,985,000 | 109,000 | 165.0 | 30,574,000 |
| acco, lb. | 58,808,000 | 61,100,000 | 39,400 | 1,551.0 | 19,940,000 |
| hay, tons | 3,804,000 | 3,651,000 | 2,437,000 | 1.5 | 63,892,000 |
| ples, bu. | 9,360,000 | 6,612,000 | | | 14,877,000 |
| aches, bu. | 1,716,000 | 1,920,000 | | | 4,608,000 |
| ars, bu. | 318,000 | 262,000 | | | 563,000 |
| erries, tons | 5,300 | 5,100 | | | 1,291,000 |
| apes, tons | 18,700 | 17,500 | | | 1,925,000 |

**Manufacturing.**—In 1946 there were 17,516 manufacturing establish- nts in the state, employing 1,565,449 persons to whom $3,463,883,000 s paid in wages and salaries. The capital invested was $4,018,- 0,000 and the value of the goods produced was $12,010,975,100. Included as part of the latter amount, value added by manufacture was $5,412,180,100. The value of the product of the principal industries for 1940 and 1946 is shown in Table II.

Table II.—*Principal Industries of Pennsylvania, 1946 and 1940*

| Industry | Value of Products 1946 | Value of Products 1940 |
|---|---|---|
| tals | $4,678,357,900 | $2,944,848,400 |
| tiles | 1,756,269,100 | 795,457,200 |
| od | 1,964,498,300 | 740,801,600 |
| emicals | 1,008,207,900 | 518,062,300 |
| per and printing | 729,168,400 | 372,074,400 |
| ther | 383,526,500 | 174,963,900 |
| acco products | 152,664,100 | 92,272,300 |
| nber and its remanufacturing | 185,137,500 | 79,733,100 |

**Mineral Production.**—The value of the principal mineral products of the state in 1940 and 1945 is shown in Table III.

Table III.—*Principal Mineral Products of Pennsylvania, 1945 and 1940*

| Important Mineral Products | Value 1945 | Value 1940 |
|---|---|---|
| Bituminous coal | $433,627,000 | $237,333,374 |
| Anthracite | 323,944,435 | 205,490,000 |
| Pig iron | 361,684,919 | 282,666,561 |
| Petroleum | 46,680,000 | 39,700,000 |
| Natural gas | 40,270,000 | 41,733,000 |
| Cement | 25,549,621 | 38,350,998 |
| Stone | 22,266,706 | 19,855,478 |

(J. H. Df.)

## Pennsylvania, University of.

An institution of higher learning at Philadelphia, Pa. Buildings especially designed to house the army and navy reserve officers training corps units and their equipment were completed during the year 1947, as was a new laboratory for the school of veterinary medicine. An additional building also was acquired for use by the school of education.

Accessions through gift and purchase brought the total number of volumes in the university library and departmental libraries to 1,034,000. A rare-book room, with a specially trained administrative staff and a capacity of 30,000 vols., was opened in the main library to house extensive and valuable collections in various fields.

In the Moore school of electrical engineering a new electronic supercalculator to be known as the E.D.V.A.C. (electronic discrete variable computer) was under construction for the army ordnance department. With a so-called "mercury tank memory" as one of its most distinctive features, the E.D.V.A.C. is designed to excel the army's world-famous E.N.I.A.C. (electronic numerical integrator and computer) in capacity to solve mathematical problems and in speed of over-all operation, but is far more compact and less costly. The E.N.I.A.C. also was built in the Moore school for the ordnance department of the army.

Of particular significance among curricular developments was the announcement of a program of Indian and related Asian studies, including both teaching and research. Made possible by a grant of $155,000 from the Carnegie corporation and one of $60,000 from the Rockefeller foundation, the program was to be in full operation in the fall of 1948. (For statistics of endowment, enrolment, faculty, library volumes, etc., *see* UNIVERSITIES AND COLLEGES.) (G. W. McC.)

**Pension, Old-Age:** *see* RELIEF; SOCIAL SECURITY. *See* also under various states.

**Pensions, Army and Navy:** *see* VETERANS' ADMINISTRATION.

**Pepper:** *see* SPICES.

**Performing Right Societies:** *see* SOCIETIES AND ASSOCIATIONS.

**Perfume:** *see* SOAP, PERFUMERY AND COSMETICS.

## Permanent Joint Board on Defense (U.S. and Canada).

There are six U.S. members of the board, four of which represent the army, the navy and the air force, with one member from the department of state and a civilian chairman appointed by the president. There are five Canadian members representing the air force, army and navy, with one member from the department of external affairs and a civilian chairman appointed by the cabinet.

The two governments announced on Feb. 12, 1947, that they had decided to continue in peacetime the close co-operation which had existed between their armed forces during World War

II. The announcement declared that collaboration would include the interchange of service personnel; co-operation and exchange of observers in connection with exercises and tests; standardization of arms, equipment, organization and methods of training; mutual and reciprocal availability of military, naval and air facilities in each country and transit of military aircraft and public vessels of the one country through the territory of the other with a minimum of formality. The announcement stated that no treaty, executive agreement or contractual obligation had been entered into, and that either country might at any time discontinue collaboration. The two governments declared that they believed this arrangement was a contribution to the stability of the world and to the establishment through the United Nations of an effective system of world-wide security. A copy of the statement was sent by each government to the secretary general of the United Nations for circulation to all its members.

(W. E. Th.)

## Perón, Doña María Eva Duarte de

(1919– ), wife of the Argentine president, Juan Domingo Perón, was born on May 7 in Los Toldos, a village in Buenos Aires province. She became an actress and in 1943 she met Juan Perón, then undersecretary of war.

They were secretly married in Oct. 1945 and about four months later Perón was elected president.

As "first lady," Señora Perón had no official job or title. Nevertheless, her power in the government was considerable. She was frequently called Perón's "minister without portfolio," and the liberal opposition referred to the Perón ménage as the "dual presidency." Señora Perón went to Europe in the summer of 1947 as an unofficial "goodwill ambassador." In Madrid, she received a 21-gun salute and conferred with Gen. Francisco Franco. After touring Spain, she went to Rome and was received in private audience by Pope Pius XII on June 27; communist demonstrations in Rome marred her Italian visit. On July 21 she arrived in Paris and was received officially by Pres. Vincent Auriol and Foreign Minister Georges Bidault. She returned to Buenos Aires on Aug. 23 and was accorded a triumphal reception.

## Perón, Juan Domingo

(1895– ), president of Argentina, was born on Oct. 8 near Lobos, a small town south of Buenos Aires, and was educated in military schools, becoming a full lieutenant in the army by the time he was 20 years old. He became one of the leaders of the G.O.U. (Grupo de Oficiales Unidos), a clique of nationalistic young army officers which was instrumental in the coup d'état that overthrew the regime of Pres. Ramón S. Castillo, June 4, 1943. In succeeding governments, Perón was the power behind the throne, although he held only minor political posts. When Gen. Edelmiro Farrell became president in Feb. 1944, he promptly raised Perón to the war ministry and then to the vice-presidency. In 1945, Perón consolidated his grip on the government, despite a short-lived army coup, staged Oct. 9, which ousted him from power for a two-week period. On his return, he became more strongly entrenched than ever, was elected president (Feb. 24, 1946) on the Labour party ticket and was inaugurated the following June 4.

In 1947, Perón called on his supporters to crush his opponents—"stubborn oligarchs," "politicians," "the enemy press," and "native communists." On May 1, he announced a plan to modernize the army but denied that he intended to engage in an arms race with neighbouring countries. He also professed a "vehement desire for peace." With the ratification by the Argentine congress of the Act of Chapultepec and the United Nations charter, Perón had declared that the era of "misunderstandings" with the other western hemisphere countries
closed. And the restored relationship, particularly with
United States, was further strengthened in 1947 by the f
scale participation of Perón's government in the Inter-Am
can Defense conference at Rio de Janeiro, Brazil.

**Persia:** *see* IRAN.

## Peru.

A west coast republic in South America, bounded
Ecuador and Colombia on the north, Brazil and Bol
on the east, Chile on the south and the Pacific on the w
Area: 482,258 sq.mi.; pop. (1945 est.): 7,652,718. Racial
tribution is estimated at 52.9% white and mestizo and 45.
Indian. The capital is Lima (pop. est. 750,000); other ci
(with pop. by 1940 census unless indicated otherwise) are Cal
(84,438), Arequipa (79,185), Cusco (1945 est. 45,230), Truj
(1945 est. 41,589), Iquitos (34,231), Chiclayo (32,646), Hu
cayo (28,679), Sullana (22,344), Ica (21,437) and Piura (1
est. 29,674). President in 1947: José Luis Bustamante y Rive

**History.**—The assassination of Francisco Grana Garland
Jan. 7 precipitated a sensational crisis, with political and ot
repercussions, at the beginning of the year. Grana Garland w
a prominent Lima industrialist and publisher of *La Prensa,* c
of the capital's leading papers. The cabinet resigned two da
later and on Jan. 12 a new cabinet, with Rear Adm. José
Alzamora as premier and Dr. Enrique García Sayán as fore
minister, was sworn in. The cabinet reorganization after
assassination left that group without members of the Peopl
party (Apristas), although the Apristas and their party al
continued in control of both houses of congress. Apristas
came increasingly critical of government policies thereafter d
ing the year. The regular session of congress opened on July
but a party deadlock in the senate prevented normal function
for some time. Pres. Bustamante on Sept. 2 declared a state
siege in an effort to end a five-day "illegal" general strike wh
had partly paralyzed the Lima-Callao area; an incidental eff
of the decree was to postpone by-elections in certain politica
doubtful areas. On Oct. 31, an 11-man cabinet, including
military men, was sworn in; the navy minister, Rear Ad
Roque Saldias, headed the cabinet.

Labour difficulty was considerable, the most serious instan
being the Lima general strike from Aug. 28 to the beginning
September, during the course of which 48 union leaders we
arrested. The government during the year created a nation
housing corporation. It also signed a health agreement wi
Ecuador providing for research on malaria and other fronti
diseases and exchange of personnel and experience. The Ca
negie institution of Washington, D.C., turned over to the Per
vian government its magnetic observatory at Huancayo in t
Andes during 1947.

**Finance.**—The monetary unit is the sol, valued on Oct. 31, 1947,
15.38 cents, official rate, and 6.45 cents, free rate, U.S. currency. T
budget for 1947 was presented March 6 to balance at 946,000,0
soles; some of the items in it were: congress 10,291,241; president 1,75
400; justice 19,170,193; interior 119,751,369; foreign relations 18,94
939; education 147,872,178; finance 213,616,207; war 107,982,388 a
navy 36,890,124. Revenue collections for the first six months of 19
were 387,800,000 soles, 82% of the budget estimate of collections
that period; the figure for the same period in 1946 was 289,100,0
soles. The 1946 fiscal year closed with a deficit of 8,000,000 sol
1.11% of the budget figure. Total gold and foreign-exchange holdin
Jan. 1, 1947, were about $40,000,000. Exchange applications for t
first quarter of 1947 were $109,000,000 and exchange receipts we
$28,000,000 for the same period. The government took steps to conser
foreign exchange by considerably tightening import regulations. A lo
of up to $25,000,000 was authorized April 10 for irrigation proje
in the departments of Piura and Lambayeque in northern Peru. It w
announced June 26 that the government was unable to agree with
Foreign Bondholders' Protective council on settlement of $90,000,000
debt defaulted in 1932 and that the government would directly approa
the bondholders.

**Trade and Communications.**—Imports for the first five months of 19
were 242,613 metric tons valued at 431,812,916 soles (same period
1946: 216,499 tons valued at 286,378,588 soles); exports for the first f

nths of 1947 totalled 645,949 metric tons valued at 393,461,117 soles
me period in 1946: 759,569 tons valued at 367,654,052 soles). Duty
ections for the same period were 95,016,523 soles (1946: 49,915,487
s). Export of petroleum products for the first quarter of 1947 was
57,294 bbl. and for the second quarter 1,557,556 bbl. Export of
ious products in 1946 included: copper 26,119 metric tons; lead 44,-
metric tons; zinc 59,242 metric tons; gold 4,036 kg.; silver 312
ric tons; wolfram 450 metric tons; vanadium 594 metric tons; anti-
ny 1,096 metric tons; gasoline 3,174,201 bbl.; fuel oil 2,137,063 bbl.;
de oil 1,648,066 bbl.; Diesel oil 810,876 bbl.; kerosene 452,448 bbl.
clining production led some experts to predict an end of petroleum
orts by 1953.

The government on March 8 acquired the Pato air base at Talara and
planes and miscellaneous equipment from the United States for $714,-
. On March 11, Peru concluded a civil air lines agreement with Cuba.
e Fawcett Aviation company of Peru was awarded the Inter-American
ety award for 1946 for having flown 41,000,000 passenger mi. without
ident.

**griculture.**—The estimate of cotton production in 1947 was 1,275,000
ntals of 46 kg. (1946: 1,599,178 quintals). The tobacco crop for
7 was estimated at 1,800,000 kg. (1946: 1,567,615 kg.). Tobacco
cks on hand July 31 were 1,854,740 kg., including 1,699,001 kg. of
nestic tobacco and the rest for blending. The estimate of 1947 sugar
duction was 400,000 metric tons (1946: 377,646 tons). Cottonseed
duction in 1947 was estimated at 100,000 metric tons (1946: 119,-
; tons). The ministry of agriculture was reorganized during the
r, with emphasis on decentralization. It began developing a ten-year
gram to stimulate production; this would involve an application to
Export-Import bank for a loan to finance purchase of machinery and
ecticides. Total cost of the irrigation program inaugurated April 10
s estimated at 191,000,000 soles; 50% was expected to be spent for
iipment, materials and services from the United States.

**Manufacturing and Mining.**—Tobacco processing in 1946 produced 1,504,-
5,000 cigarettes, 1,524,230 cigars and 842 kg. of pipe tobacco; estimate
cigarette production for 1947 was 1,600,000,000. The estimate of
47 guano production was 150,000 metric tons. Crude oil and natural
soline production for the first six months of 1947 was 6,800,043 bbl.
e number of producing oil wells June 30 was 3,011 as against 3,215
Jan. 1, 1946. A proposal for establishment of a government-controlled
l corporation was considered in 1947; anthracite and bituminous
erves, it was estimated, were 2,000,000,000 cu.m.

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*sion of Peru: Kings, Conquerors, Saints* (1947); Pan American Union,
*lletin* (Washington, monthly); *Foreign Commerce Weekly* (Washing-
1). (R. H. FN).

## etroleum.

World oil production during 1947 undoubtedly exceeded that of 1946 and broke an all-time
cord. Outside of the United States, the principal increases
ere registered in the middle east and possibly the U.S.S.R., al-
ough no official information as to the latter country was avail-
le. Gains were made in South American production. In the
S., the estimated total production was 1,839,600,000 bbl.
mpared with 1,733,424,000 bbl. in 1946 and 1,402,228,000
l. in 1941.

The attempt by the Soviet Union to make an oil pact with
an was defeated by the Iranian parliament late in the year.
n agreement granting oil concessions to soviet Russia in northern Azerbaijan province had been negotiated early in 1946 following the soviet delay in withdrawing their military forces from Iran. It provided for a joint Iranian-soviet oil company to exploit deposits in the province, with the soviets controlling 51%. The U.S.S.R. protested the rejection of the pact.

Another significant development in the middle east was the approval granted by the U.S. department of commerce to the Trans-Arabian Pipe Line company to ship 20,000 tons of pipe to Saudi Arabia during the fourth quarter of 1947. The Iraq Petroleum company was expected to complete its new 16-in. pipe line from Kirkuk to Haifa by the end of 1947. The company already had two 12-in. lines from the Kirkuk field to Haifa and to Tripoli, respectively, with a combined capacity of 96,000 bbl. daily. The new line would provide an additional daily capacity of 120,000 bbl.

The Trans-Arabian Pipe Line company was to construct 1,040 mi. of 30- and 31-in. pipe line with a capacity of 300,000 bbl. daily to a new shipping port to be constructed near Sidon, Lebanon. This was scheduled for completion about Jan. 1, 1950.

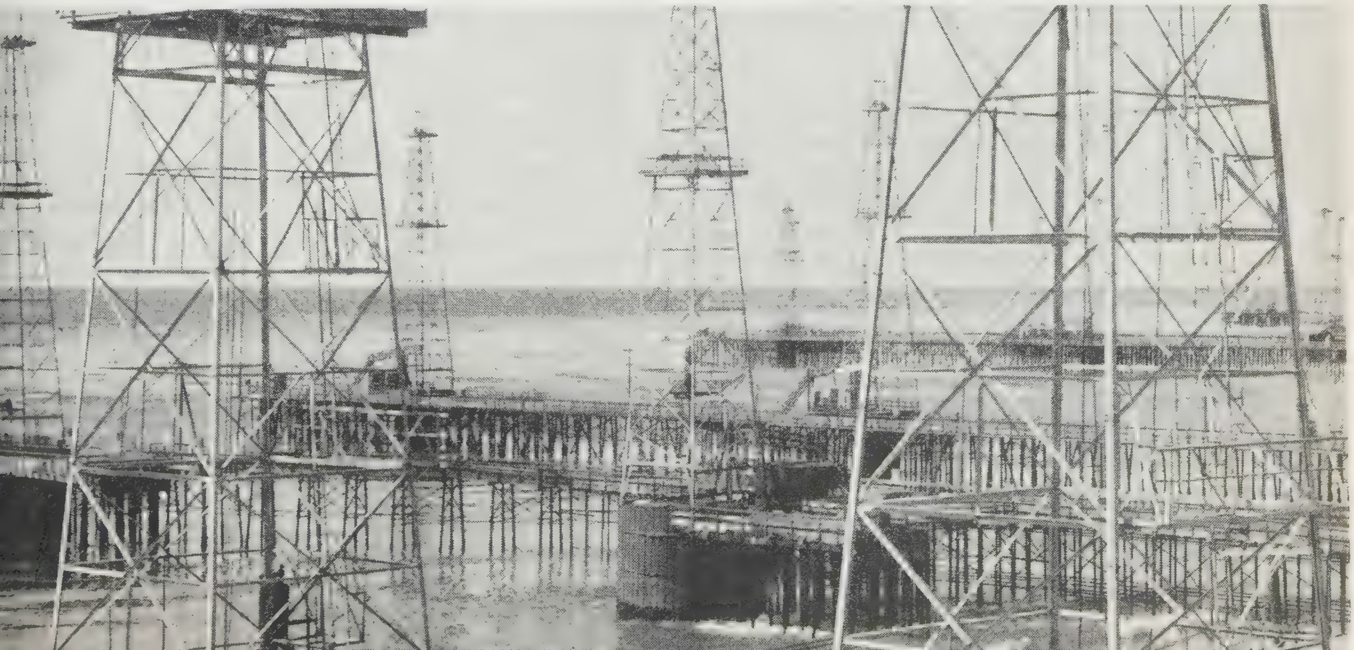
Middle East Pipe Line Co. was preparing to construct during 1950 and 1951 about 900 mi. of the biggest-inch oil pipe line yet planned, with a throughput capacity of 500,000 bbl. to 550,000 bbl. daily from Abadan and the Burghan field in Kuwait, to a Mediterranean terminus yet to be selected. Iraq Petroleum company was also planning the construction during 1952 and 1953 of a new 24-in. line, capacity about 250,000 bbl. daily, from Kirkuk to Tripoli.

These new transcontinental carriers, with Iraq Petroleum company's existing lines, would provide total pipe-line outlet from middle east oil fields to Mediterranean ports of 1,300,000 bbl. daily by Jan. 1, 1954, or shortly thereafter.

The Anglo-Iranian Oil company's refinery at Abadan had been enlarged to a capacity of 400,000 bbl. per day. Four other middle east refineries: the Arabian American at Ras Tanura, the Bahrein Petroleum company refinery on Bahrein Island, the consolidated Refineries Ltd. at Haifa and the Iraq Petroleum company's small refinery at Tripoli accounted for a total of 730,000 bbl. a day. Substantial additions were planned.

By overland shipment to the Mediterranean, the projected Arabian lines would save shipments to points west of Suez that otherwise must be made by tanker through the Red sea and the Suez canal to Port Said, involving a canal toll and an expensive tanker haul of 3,650 mi. At a lower cost by pipe line the oil would be carried only approximately 1,000 mi. to an eastern Mediterranean loading port and thence by tanker to destination.

ERRICKS of undersea oil wells in California affected by the U.S. supreme
urt decision of June 23, 1947, which declared tidal oil lands the property
the federal government rather than the state



The U.S.S.R. during 1947 retained its grip on the oil producing countries of Rumania, Poland, Hungary and to some extent Austria, while fighting against the Marshall plan for the economic relief of the 16 European nations which lined up for the plan. The interim aid program of the Marshall plan adopted by the U.S. congress late in the year included the furnishing of petroleum to these countries and left to the responsibility of the president a provision that commodities in short supply in the U.S. should be furnished whenever possible from outside sources. U.S. oil production, while breaking all records, was only just about meeting domestic requirements and therefore the bulk of the oil supplied under the interim aid program would come from the middle east and other outside oil areas.

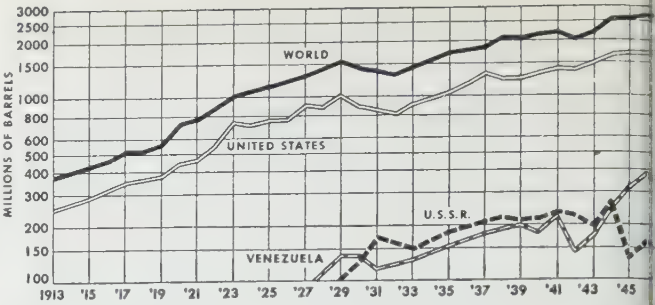
There was a heavy demand for petroleum products in the British Isles, France and other European countries despite civilian restrictions on the use of automobiles. This demand reflected the acute coal situation. The shortage of coal placed a heavy burden on oil for use as fuel. Europe's oil requirements therefore, were not primarily gasolines, but rather residual fuel to replace or supplement coal in power plants, factories and transportation systems. The use of oil for ships had also increased beyond all expectations because of the extensive war losses of coal-burning ships, and their replacement with oil-burning ships.

According to estimates made by B. Brewster Jennings, president of the Socony-Vacuum Oil company, presented at the annual meeting of the American Petroleum institute in Nov. 1947, oil consumption for the world, excluding the U.S. and also the Soviet Union because so little was known about the latter country, would approximate 2,700,000 bbl. daily in 1947 compared with 1,900,000 bbl. daily in 1938. By 1950 the consumption of these countries was expected to be 3,200,000 bbl. daily; by 1960, 4,500,000 bbl. daily, an increase of 1,800,000 or 67% over 1947. By comparison, the U.S., consuming in 1947 about 5,400,000 bbl. daily, was expected by 1960 to require 6,800,000 bbl. daily—an increase of 1,400,000 bbl. or 28%. In other words, oil consumption in Europe was expected to increase at a rate much faster than in the U.S.

In the U.S., consumption of oil products set new high records in 1947. Because of transportation shortages and lack of adequate quantities of steel and other materials for needed expansion of pipe lines, refineries and other facilities, gasoline and fuel oils became scarce in certain areas. This situation brought about some voluntary rationing on the part of oil suppliers and appeals to users for conservation of gasoline and fuel oil.

Prices of crude oil and petroleum products increased substantially during 1947. Pres. Truman asked congress to authorize rationing and price control of fuel oil and gasoline in case of public necessity. The U.S. petroleum industry representatives appearing before various congressional investigating committees asked freedom from re-establishment of controls such as were exercised during World War II and pointed out that the industry was making estimated record capital investments of more than $4,000,000,000 in the two-year period 1947–48 to meet rising demands for its products.

It was estimated that 35,000 new oil wells, a new high record, were drilled in 1947, including more than 5,000 wells for exploratory purposes in the hope of finding additional oil reserves. In the production division alone, the industry planned to make capital outlays estimated at more than $2,000,000,000 in the two-year period.



TOTAL WORLD PRODUCTION OF PETROLEUM and output of the thr principal producing countries, as compiled by *The Mineral Industry*

Plans were under way for construction of refinery facilities having a capacity of about 450,000 bbl. of crude daily, but the completion of these installations would take from 6 to 24 months from the start of work. There was a prospect that this figure would be augmented in the near future. Expenditures for refining facilities in the two years were estimated to exce $1,100,000,000.

Pipe line construction planned during the two-year period i volved an aggregate investment of approximately $440,000,00 and about $480,000,000 would be spent expanding distributi and marketing facilities.

In 1947 export licensing restrictions on motor gasoline, ker sene, gas oil and distillate fuel oil and residual fuel oil we established under the office of international trade, departme of commerce. The amounts of products to be exported durin a quarterly period were determined on the basis of a unifor questionnaire sent to all foreign governments that had bee buying oil in the U.S., requesting end-use information and d tailed figures on consumption, their own production, stocks o hand and other statistics.

The U.S.S.R. alone among these countries refused to furnis the desired information, and thereby cut itself off from U. supplies. No licences were issued for shipments to the Sovi Union after June 30, 1947, except for limited quantities whic then were in process of loading on the west coast and thos only to avoid hardship to U.S. companies, commerce depar ment officials explained. (*See* also Business Review.)

Bibliography.—*Oil & Gas Journal; National Petroleum News; Wor Petroleum; Proceedings* American Petroleum Institute XI Annual Mee ing (Nov. 10–13, 1947). (L. M. F.)

## Philadelphia.

Philadelphia is the third largest city of th United States; and although the 1940 cen sus gave the population as 1,931,334, it was estimated that th population in 1947 was about 2,100,000. Mayor: Berna Samuel (1948–52).

As rapidly as building supply shortages would permit, Phil delphia, under its Republican administration, was going ahea with a six-year improvement program of $322,700,000. Wor totalling $81,000,000 was already under way by the end of 194 Of this amount, $6,500,000 was for extension of the Mark street subway from 32nd to 36th streets; it also included ne bridges and highway extensions.

The city allocates $13,000,000 a year for health and welfa services and hospitals.

In addition to many new housing developments, new co struction was planned by private concerns. A seven-man re control commission was established to settle tenant-landlo disputes.

The Better Philadelphia exhibition sponsored by the city an its citizens, revealed what the community would look like i the future.

Construction was started on a new elementary school costi $1,150,000. Plans were almost completed for two senior hig schools, a vocational-technical high school, a junior high scho and three elementary schools, which would cost approximate $17,000,000.

The sum of $8,500,000 was being spent to rehabilitate Phil delphia's waterworks, and $11,200,000 was being used to i ve and build new sewage-disposal plants.

The Civil Aeronautics authority allocated $650,000 to South-st airport, and $15,000,000 was appropriated for airport im-vement, including a terminal building at Southwest airport, h other improvements to be built as needed.

mprovements were being made to piers, including a new pier south Philadelphia along the Delaware river front. Plans re being developed to make the port of Philadelphia second none in the country.

Playgrounds, recreation facilities and junior guidance projects re planned in increasing numbers, with an allocation of $7,-,000 for these purposes. Juvenile delinquency decreased rply during the year. (B. SA.)

**ilanthropy:** *see* DONATIONS AND BEQUESTS.

## ilately.

The year 1947 brought an important philatelic centenary—the centennial of the issuance of post-e stamps in the U.S. Since the centenary exhibition for the th of all postage stamps originally planned for London in 40 had to be abandoned because of World War II, the Cen-iary International Philatelic exhibition (commonly called pex) in New York was planned to be the greatest such owing of stamps ever assembled. That the foreign exhibits re restricted was not the fault of the planners but rather of difficulties of postwar transportation. As it was, the Cipex ibit was impressive and great. Saul Newbury of Chicago n the grand award with his collection of U.S. 19th century ues.

The more than 175,000 persons who visited Cipex saw the st public showing in more than a decade of the world's most-blicized stamp, the unique British Guiana "1-penny in colour the 6-pence" error of 1856.

The next International Stamp Exhibition was set for 1948, d Basel, Switz., was selected as the site.

**New Issues.**—In honour of Cipex, the United States issued souvenir sheet carrying replicas of the 1847 issue—five-cent d ten-cent values. A special three-cent stamp and a five-cent amped envelope were also issued. Six other three-cent stamps ere issued as commemoratives during the year by the U.S.—r Thomas A. Edison; for Joseph Pulitzer; for the medical ofession; for the "Constitution," better known as "Old Iron-des," for the state of Utah and for the Everglades National rk in Florida. For the first time after 1886, a letter-sheet was sued, a ten-cent air mail variety for foreign mail. New 5-cent mall size), 10-cent, 15-cent and 25-cent air mails were also oduced.

New Zealand had an interesting stamp-issuing year. The nual health stamps for 1947 portrayed the beloved statue of ros in Picadilly square, London. For the first time after 1890, hen they first appeared, the life insurance department stamps New Zealand dropped their adaptation of England's Eddy-one light as the exclusive design and blossomed forth in seven coloured stamps.

The wedding of Princess Elizabeth of England brought an-ouncement of bridal issues from Australia and Canada. Britain self used a special cancellation for ten days, embodying a ime of wedding bells on a true lover's-knot entwining the itials "E" and "P."

Luxembourg issued a set honouring Gen. George S. Patton, Jr., d the U.S. war-dead fallen on its soil. Franklin D. Roosevelt amps were issued by 17 countries, while the centenary of U.S. stage stamps was commemorated by Mexico, Belgium and onaco. The visit of U.S. President Harry S. Truman to Brazil as noted by that country with a stamp issue.

**Errors.**—Since errors in stamps often mean rare varieties, collectors are constantly on the lookout for these. However, errors in design that are not corrected by new issues merely bring embarrassment to the authorities who prepared them. The philatelic pundits discovered that the cannon depicted on the new U.S. "Constitution" stamp are British guns and that the portrait of Lt. John Shortland on the Australian Newcastle centenary issue was actually that of the discoverer's father. Neither stamp was reissued.

**"Stamps for the Wounded."**—This organization, which provides stamps and accessories for veterans in U.S. hospitals, continued its work on a nation-wide scale during 1947. The donations of time, stamps and materials continued to help hospitalized men pass weary hours. Most philatelic societies and clubs co-operated with personnel and material gifts.

**Literature.**—The 1948 edition of *Scott's Catalogue* (published in 1947) continued to revise the numbering system of the stamps of the U.S., begun in 1946, and the revision of editing was extended to Canadian issues.

The magazine *Philately,* announced in 1946, suspended publication, after influencing other magazines to new formats and general improvements.

Several new books and two important revisions appeared in 1947. *The Romance of Stamp Collecting,* by Ernest A. Kehr, and a colourful junior book on the theme of the U.S. centenary, *America's Stamps,* by Maud and Miska Petersham, appeared. *So You're Collecting Stamps,* by Mannel Hahn, which first appeared in 1940, was issued in a revised edition, and two volumes of *The U.S. Commemoratives of the 20th Century,* originally written in collaboration with Beverly King, were revised by Max Johl. (M. HA.)

## Philippines, Republic of the.

The Republic of the Philippines comprises an archipelago lying about 800 mi. off the east coast of Asia, and stretching from Formosa on the north to Borneo on the south.

The total area is approximately 115,000 sq.mi. The official census of 1939 gave the population as 16,000,303, including 117,487 Chinese, 29,057 Japanese and 8,709 U.S. citizens. The population was estimated in 1946 at 18,846,800. Principal cities (census of 1939): Manila (capital, 623,492); Cebu (146,817); Zamboanga (131,455); Davao (95,546); Iloilo 90,480; Legaspi 41,468.

**History.**—July 4, 1947, marked the completion of the first year of Philippine independence. The first elections since the establishment of the republic were held the following Nov. 11, and constituted an impressive triumph for the Liberal party. Seven of the eight senatorial seats were won by Liberal candidates; one lone Nacionalista, Camilo Osias, emerged victorious in the senatorial elections. Despite their failure to win many offices, the Nacionalistas showed unexpected strength.

During the first year of the republic important steps had been taken to provide for national security. A military base agreement was concluded with the U.S. on March 14, 1947, and a military assistance agreement on March 21. Vigorous steps were also taken by the Philippine government to reorganize and democratize the Philippine army.

The People's court continued to try accused collaborators during 1947, with results that were far from impressive. Difficulties in securing witnesses and arranging trials hampered the efforts of Solicitor Generals Lorenzo Tanada and Manuel Lim. Much talk was heard during 1947 of the possibility of an amnesty for accused collaborationists, but the administration continued to deny that such action was planned.

The main problem continuing to confront the Philippines was that of economic rehabilitation and reconstruction. U.S. Am-

FILIPINO WOMEN receiving U.S. money payments in May 1947, for past services rendered to U.S. forces during the World War II fighting in northern Luzon

bassador Paul V. McNutt, reviewing conditions in the Philippines on Nov. 27, 1946, had described the Philippines as ". . . a land ravaged, brutalized, burnt over, destroyed, economically crippled, psychologically shocked, and physically devastated. . . ." The great destruction and economic chaos resulting from the war made independence for the Philippines all the more difficult. Nevertheless, despite these great handicaps much progress was made during the first year and a half of Philippine independence in reviving the economic life of the country. The trade agreement with the United States continued to be the basic stimulus for revival of trade. Under terms of this act, free trade was to exist between the two countries until 1954, after which date duties would be assessed progressively at the rate of 5% each year until 1974, when all preferential trade relations were scheduled to cease. In a national plebiscite of March 11, 1947, the Filipino people accepted the "equal rights amendment" to their constitution as stipulated by the agreement, which was thus brought into full effect.

Philippine export trade developed rapidly. Exports of Philippine products during 1947 totalled $53,028,693, not including re-exports amounting to $11,158,831. Of the 1946 exports, about 73% went to the U.S. Imports totalled $295,858,574, of which 87% derived from the U.S. and Hawaii. Imports totalled $280,335,333 during the first six months of 1947, and exports $125,339,900.

The 1947–48 crop of Philippine sugar was estimated to be 429,929 short tons from a total area planted of 73,752 hectares. Shipments of copra for the first 9 months of 1947 totalled 681,930 long tons, also 25,000 tons of inedible coconut oil equivalent to about 40,000 tons of copra. Abaca production was 586,412 bales during the first 9 months. The tobacco crop in the Cagayan valley was estimated at 107,000 quintals, and the crops in La Union, Pangasinan, and Ilocos provinces were estimated to total about 50,000 quintals.

**Progress of the Rehabilitation Program.**—During 1947 the various U.S. agencies concerned with implementation of the Philippine Rehabilitation act (passed by the U.S. congress in 1946) made progress in carrying out this program. Included among these agencies were the army engineers, public health service, weather bureau, coast and geodetic survey, fish and wi life service, Public Roads administration, U.S. Maritime co mission, and Civil Aeronautics administration.

The Philippine War Damage commission faced one of t most difficult tasks of all agencies in attempting to disburse t $400,000,000 authorized in the act. By the end of 1947, ho ever, the commission was rapidly increasing the tempo of payments and was playing a vital role in the reconstruction many public buildings, schools and hospitals. Most of the su plus property granted the Philippines under the Rehabilitati act had also been received by the end of 1947.

In his message on the state of the nation on January 27, 194 President Manuel A. Roxas declared that "the consistent thre running through the entire program I have outlined for the in mediate future of our country is industrialization." A firm technical engineers and technicians appointed to survey the r public's industrial potential presented a report popularly know as the "Beyster report" which indicated possible small-scale i dustrial development for the republic in the years to come.

In September the U.S. had agreed upon the formation of joint finance commission to consider the financial and budgeta problems of the Philippine government and to make recom mendations regarding taxes, budget, public debt, currency an banking reforms, exchange and trade problems and reconstru tion and development. This commission began its work Manila in Jan. 1947 and after six months of study present its report, which provided basic information concerning t Philippine financial situation. The commission urged that t Philippines take advantage of extraordinary U.S. expenditur in the islands and suggested that encouragement be given imports of capital equipment for the reconstruction of farm mines, fisheries and factories. Imports of luxury goods an other nonessentials should be strictly limited, according to t commission. The report proposed in summary: (1) a progra for the conservation of foreign exchange for economic develo ment; (2) a taxation program designed to reduce the budg deficit to manageable proportions in the fiscal year 1948 and eliminate it in the fiscal year 1949; (3) a domestic borrowin program to cover the deficit in fiscal year 1948 and to provi capital funds thereafter; (4) a strengthening and expanding banking and credit facilities to assist both private and publ financing; (5) the establishment of a central bank and a man aged monetary system to assist the government in implementin the above program.

Nevertheless, there were certain long-range economic nee of the Philippines which could not be met out of current fund and it was believed that the government would attempt obtain certain project loans from various banking and cred sources. Projects such as those for the development of hydr electric power plants at Maria Cristina falls and at Caliray River falls required immediate capital. (E. W. Ml.)

## Philology.

In the varied fields of philological study durin 1947 there was an attempt on the one hand t assess the loss of important source material in World War I and to resume undertakings that had been interrupted by hostil ties. On the other hand, there was an evaluation of the status o investigation in many fields and the shaping of plans for initia ing new undertakings.

It was still too early to determine accurately what importan manuscripts, incunabula and rare books were war losses. Pre liminary reports indicated that the loss among documents o this type probably was not heavy; they were usually given to priority in bombproof shelters, and such damage as occurre was frequently the result of the immediate postwar confusion It was still quite possible that some manuscripts reported mis like that of the *Hildebrandslied,* might be discovered in un- l hideaways. Apparently more serious was the destruction nuch standard reference material and important stocks of ndary sources. A survey of damage to German scholarly ries was contained in Georg Leyh's *Die deutschen wissen- ftlichen Bibliotheken nach dem Krieg* (Tuebingen, 1947).

luch of the important material which had been collected for ionary projects in Europe previous to the war apparently saved. The Egyptian dictionary records, for instance, were again in the hands of the Berlin academy. But the task of ganizing staffs was difficult, and the scarcity of paper and ting materials limited actual publication. The middle Eng- dictionary centre at the University of Michigan reported dy progress in collecting and organizing material. A short ionary based on modern U.S. usage and directed by a num- of linguistic scholars made its appearance: *The American lege Dictionary,* published in trade and text editions.

lew outlets for publication aided in replacing some of the ualties of the war years. Several new periodicals representing ide range of interests welcomed philological material. Among se were the *Journal of Cuneiform Studies,* published by the erican Schools of Oriental Research at New Haven, Conn.; *dia Linguistica,* of Lund, Sweden, concerned with general blems in linguistics; *Symposium,* issued by Syracuse uni- sity in Syracuse, N.Y., emphasizing modern languages and ratures other than English; and *Die Welt des Orients,* for tern studies, appearing under the editorship of Ernst Michel Wuppertal-Ronsdorf, Germany. *Word,* which started its eer in 1945 as a venture of the Linguistic Society of New rk, offered a further outlet for philological contributions pite some delay in appearance.

he philological aspects of Biblical scholarship were accorded ention in the survey, *The Study of the Bible Today and To- rrow,* edited by Harold R. Willoughby.

Among programs at U.S. universities which offered promise philological development were those in east European studies Indiana university, where Finno-Ugric investigation was to eive special attention, and those in near eastern studies at inceton, emphasizing Arabic, Turkish and Persian.

Plans were under way to preserve valuable European material d, if possible, to distribute copies widely in the United States. though intended primarily as a precautionary measure, this ve should eventually stimulate U.S. research. (G. J. M.)

## hilosophy.

Philosophy in 1947 followed the same general lines of postwar development that had ap- ared in 1946: (1) French existentialism still held the atten- n of the public and dominated the conversation of the inter- ed but untechnical layman; (2) although students of sym- lic logic and semantics, particularly the logical positivists, nt on with their researches, the already well-developed op- sition to the more extreme claims of positivism reached a w vigour of statement; (3) U.S. scholars continued to probe o their own tradition and seek a stronger basis for and a arer justification of the ideals of democracy; (4) political ilosophers strove for such an assessment of man, the state d historic process as would clarify the complex and critical e in which they lived; (5) notable special studies in the his- y of philosophy and in systematic philosophy were published.

Jean Paul Sartre's *Existentialism* appeared in English transla- n. It contained his reply to the charges of various critics, luding both communists and Christians, that existentialism ited a mood of "desperate quietism," that it dwelt on human gradation, that it disregarded human solidarity, and that it ored the reality and seriousness of human efforts, leaving ly caprice as a principle of conduct. Sartre answered that since existence precedes essence (that is, since there is no fixed human nature), man shapes his own character and destiny, and this implies the responsibility of each person for all men and a demand for decisive action within a social context. Though the subjective self is the real starting point, Sartre argued, other selves are just as real as it and are the condition of its own existence; though there is no universal human nature, there is a universal human condition in which every man is involved; and since no God exists to take care of him, man is condemned to freedom, and in his forlornness and despair is confronted with the terrible responsibility of making himself and his society whatever they are to be. This view Sartre called a tough optimism, denying that it was either quietism, pessimism or a discouragement to action.

The opposition to the excessive claims of positivism, and especially the protest against irrationalism, came from diverse quarters, revealing a deep and widespread concern for a return to a view of man's nature which would do justice to his higher powers and restore belief in the dignity of reason. Empiricist as well as rationalist sought for a valid corrective to the belief in the relativity of knowledge and of ethical standards which had weakened liberalism between World Wars I and II and had given rise to cynicism and philosophical irresponsibility.

Paul Weiss, in *Nature and Man,* maintained, on a naturalistic basis, an ethic of freedom and responsibility. But this naturalism was not at all that of the existentialists, for nature itself became transformed into a realm containing value as well as fact. Weiss resisted the absorption of man into a meaningless or brutal nature on the one hand and his absorption into a Hegelian absolute on the other. The reality of the individual with his uniqueness and his specific concerns was vigorously defended, although a common and absolute good toward which human life is oriented was equally upheld. "Man is a natural being with a fixed core, directed toward a good which is pertinent to all that exists." (Paul Weiss, *Nature and Man.* Copyright, 1947, by Henry Holt and Company, Inc.)

In the volume *Our Emergent Civilization,* edited by Ruth Nanda Anshen (published by Harper and Brothers, 1947), the reaction against positivism, materialism and existentialism was explicit. That "objectivity of reason in human affairs which leads to the establishment of justice" was strongly defended, in the editor's introductory essay, as against the view which makes reason the mere subjective tool of biological needs. In the second essay, Brand Blanshard, also cogently defending the existence of an independent, objective factor accessible to reason which can and at times does control the course of our thought, took as his special targets three prominent denials of this thesis: (1) the reduction of thought to neurological processes; (2) the psychoanalytic explanation of thought in terms of the subconscious; and (3) the subjectivism of logical positivism. Several other distinguished philosophers, writing in the same volume, carried forward the criticism of contemporary materialistic naturalism as related to other problems of man and civilization.

Another careful analysis of the modern overemphasis upon the subjective aspect of reason and its resultant irrationalism was given in *Eclipse of Reason* by Max Horkeimer, who traced the series of relentless steps by which modern thinkers came to reject the Greek view of objective truth. He showed how the modern view, so useful in dispelling dogmatism and superstition, itself spawned a host of evils such as ideological lies, deceptive propaganda, obscurantism and reaction, until not only man's mind but even man himself had become a means rather than an end. His solution was not to return to dogmatic philosophy, still less to authoritarian religion, but rather to probe more deeply into the historic relationship between spirit and nature.

In similar vein, Arthur E. Murphy in a paper, "Ideals and

Ideologies: 1917–1947," protested the reduction of philosophical ideas to mere toys, tools or weapons and hoped for a return to philosophical responsibility in which ideas and ideals may be regarded as "reasons addressed to a community" functioning persuasively in the common life and serving as a basis for reasonable social change (*Philosophical Review,* Arthur E. Murphy, Sage School of Philosophy, Cornell university, Ithaca, N.Y., 1947). Donald Williams in *The Ground of Induction* (Harvard University Press, 1947) warned that the skeptical claim that there is no foundation for empirical judgments "will slowly shatter civilized life and thought" for it is "to deny that reason and good-will have a purchase on reality."

Clarence Irving Lewis in *An Analysis of Knowledge and Evaluation,* a work hailed by many empiricists as the most important book of the year, tried valiantly to find a satisfactory middle way, on empirical assumptions, between a transcendental view of value on the one hand and Protagorean relativism and moral skepticism on the other.

*Essays in Science and Philosophy,* by Alfred North Whitehead, a collection of previously scattered writings, rounded out a distinguished career. Notable among historical studies was Harry Wolfson's *Philo.* Arnold Toynbee's *A Study of History,* published in 1946, continued to dominate the field of philosophies of history. (E. L. Mn.)

## Phosphates.

The heavy demand for fertilizers in the war ravaged countries was rapidly stimulating world output of phosphates, and the 1946 world total is back about to the prewar level.

*World Production of Phosphates, 1941–46*

(In thousands of short tons)

| | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|
| Algeria | 492.2 | 368.8 | 84.7 | 242.9 | 442.4 | 644. |
| Egypt | 123.1 | 362.0 | 347.9 | 350.7 | 385.1 | ? |
| France | 108.8 | 125.0 | 144.4 | 102.5 | 66.8 | 93.0 |
| French Oceania | 211.9 | 194.1 | 207.7 | 224.1 | 285.5 | ? |
| Indo-China | 78.4 | 140.9 | 93.1 | 7.7 | — | ? |
| Morocco, French | 543.5 | 788.6 | 888.7 | 1,592.7 | 1,272.2 | 3,068.4 |
| Sweden | 34.3 | 87.5 | 159.0 | 177.3 | ? | ? |
| Tunisia | 1,186.2 | 969.7 | 368.9 | 575.7 | 778.7 | 1,543.1 |
| United States (sales) | 5,252.4 | 5,201.6 | 5,741.4 | 6,021.9 | 6,503.5 | 7,684.0 |
| Total | 10,483 | 8,488 | 8,311 | 9,561 | 9,837 | 13,100 |

**United States.**—Production rose from 6,047,708 short tons in 1945 to 8,029,100 tons in 1946, and sales from 6,503,530 tons to 7,683,999 tons, both new high records. Consumption increased from 6,112,566 tons to 7,041,565 tons. (G. A. Ro.)

## Photography.

Many of the important developments in photography during 1947 were in the fields of science and industry. "Nuclear track" photographic plates recorded the splitting of atoms, rocket photography became a reality, the automatic Mirar camera gave a complete radar chart of navigation conditions, and important new developments took place in colour processes. All these new applications of photography pointed up the need for trained operators in the more specialized photographic fields.

Perhaps the most spectacular event in photography during 1947 took place on March 7, 1947, when the highest aerial photograph ever made, showing 200,000 sq.mi. of the earth's surface, was taken from an altitude of 101 mi. This amazing photograph by the U.S. navy, was exposed automatically in a V-2 rocket at White Sands Proving Ground in New Mexico and actually showed the curvature of the earth. Two aerial cameras were installed amidship in the rocket. They operated automatically, taking pictures through infra-red filters to eliminate the usual aerial haze.

**Colour Photography.**—Kodak Ektacolor was announced on Aug. 25 as a revolutionary new negative colour film that could be processed by the photographer. A three-layer cut-sheet film for standard cameras using sheet film holders, it simplified the making of colour prints and photo-mechanical reproductions eliminating the need for masking and for separation negativ

After development, Ektacolor has a negative colour ima combined with positive coloured masks, which give it an ov all orange appearance. The effective printing colours are co plementary to those in the original subject. The colou couplers incorporated in the film effect automatic colour c rection. In colour print making from positive colour films su as Kodachrome and Ektachrome (a positive film announced Kodak in 1946), colour correction is achieved by making o or more masks (low density black and white negative image and binding them in register to the positive colour transparen Ektacolor eliminates these steps. The film is slower than oth colour films. Black and white prints may be made fro Ektacolor negatives for use as proofs.

Positive printing matrices may be made directly on the ne Kodak Pan Matrix film, from the original Ektacolor negati with the appropriate colour filters.

Kodak Pan Masking film became available for prepari masks for colour transparencies. In use, the new masking fil is exposed through the colour transparency by filtered ligh After development it is taped in register with the original a forms a colour-correcting and contrast-reducing mask whi improves the results in the final reproduction.

A new improved type of Ansco Color Printon was put in production with softer gradation, cleaner whites and more bri liant colours. The improvement in colour print quality ma possible by these changes represented a real advance in thre colour photography for the making of colour prints from colo transparencies. Simplified processing formulas and a wider co trol of contrast during development were additional features.

**New Cameras and Equipment.**—In the United States the were important developments in cameras and in photograph equipment. Graflex, Inc., released a new line of Pacemak cameras which included the Speed Graphic line with focal pla shutters and the Crown Graphics without this built-in featur These cameras were a complete redesign of the former Ann versary Speed Graphic cameras. The focal plane shutters the Pacemaker Speed Graphic cameras were simpler to opera and more accurate in exposure timing, and contained built- flash synchronization contacts.

A Kodak Flash Bantam camera, equipped with f/4.5 Anasti mat special lens was introduced for the amateur photograph during the year by the Eastman Kodak company. Another ne product designed for the advanced amateur and profession photographer was the 4x5 Kodak Master View camera. Th camera had a monorail track 19 in. long to permit the fro or back of the camera to be racked back and forth for focusin

Eastman Kodak company disclosed an interesting account March of how they had secretly built 1,000 miniature M (match box) cameras for use by the Office of Strategic Servic and underground forces during World War II. The MB came could be concealed in the hand and made negatives about on half inch square which could be enlarged later. Kodak also su plied vestpocket darkroom kits containing several rolls of mm. film, developing and fixing chemicals in pill form and oth small items. The MB camera made about 30 exposures on 2 of 16 mm. film. The 1-in. f/5 lens had one stop to close t aperture to f/11. The shutter operated at a speed of 1/50 se A close-up lens was also provided when using the MB came for copying documents and similar material.

Argus, Inc., introduced its 35 mm. Argus Model 21 came equipped with the new Markfinder direct-vision viewer. Th new view finder, a development of the wartime illuminated gu sight contained guide lines to indicate picture limits and cro lines for centring the subject. The Markfinder showed 25 re of the picture area than was actually recorded on the film. wever, the guide lines served as marks for the actual picture ming. Argus also brought out its Minca camera for the low- ced camera market. The Minca was equipped with an f/9.7 mm. lens and a fixed shutter operating at 1/80 sec. The nera uses Bantam-size film, making a 26x38-mm. negative.

Ansco produced the Panda and the Rediflex cameras during 47. These were both inexpensive cameras taking 12 $2\frac{1}{4}$x$2\frac{1}{4}$-in. tures on 620 roll film. Such cameras showed a trend toward wider use of new war-tested materials in small cameras. e camera bodies were made of polystyrene plastic. In Decem- Ansco made a formal showing of the new Ansco Reflex nera, which had been announced a year previously. It was newhat similar to the well-known Rolleiflex.

Kodak announced a line of Commercial f/6.3 Ektar lenses rrected for the most exacting uses by commercial photog- phers, using the modern black and white or colour emulsions. ey were fitted in the No. 3 Ilex Acme Synchro shutters. The x Optical company announced its new No. 2 Acme Synchro itter with top speed of 1/300 sec. for use with $6\frac{1}{2}$-in. f/4.5 ses. The outside diameter of the shutter, which had a built- mechanism for flash synchronization, was only $2\frac{3}{4}$ in.

A new line of Rapax shutters was brought out by the Wollen- Optical company, known as the Standard Rapax, "X" Syn- romatic-Rapax, and the Full Synchromatic-Rapax. The "X" pe had a built-in contact for flashing the electronic high- eed flashtubes and the Full Synchromatic-Rapax had a built- synchronizer for use with the standard flashlamps. Wollen- also introduced the Raptar series of lenses for various pho- graphic uses.

Trivision, the lenticular system of producing third dimen- nal still pictures, was nearly ready for public showing by the d of 1947. Bausch & Lomb Optical company delivered the st $14\frac{1}{2}$-in. f/2.2 Trivision lens to the Naval Experimental ronautical laboratory during the year. The lens was 8 in. in ameter to give maximum depth perception. The Trivision film ed with this lens was embossed with minute ridges or lenticu- tions, to give the direct vision stereoscopic effect without the e of spectacles or a special viewing device.

High-speed electronic flash lighting was applied to a new ship- ard enlarger to provide continuous enlargement without the fficulty of interference from shipboard vibrations. With this uipment, exposures could be timed at 1/10,000 sec.

**Cameras for Specialized Purposes.**—In the scientific and dustrial fields there were a number of important new camera evelopments. Fairchild Camera and Instrument corporation roduced the 35 mm. Mirar camera (marine investigators rada d record). This camera automatically recorded on 35 mm. m the image appearing on a vessel's radar scope, thereby pro- ding reliable and tamper-proof legal evidence for court cases volving marine accidents. It also made possible the radar arting of harbours, rivers and coast lines as an additional aid navigation.

The Mirar camera system was composed of three separate, terchangeable units assembled to form a single operating unit: camera body, a magazine accommodating 100 ft. of standard mm. roll film, and a periscope for transmitting, by means of irrors, the scope image to the camera lens while at the same me permitting the image to be viewed by the operator.

The camera body was equipped with a prefocused 35 mm. 2.3 Baltar lens; diaphragm stops from f/2.3 to f/16 were pro- ded. A sequence control mechanism within the camera operat- g control permitted the camera to take a picture of every cle of radar antenna scan, every other scan, 3 consecutive ans out of every 12, or 5 consecutive scans out of 60.

DOCUMENTARY photograph of a tenement on Chicago's west side, taken by Wayne Miller while on a 1946–47 Guggenheim fellowship. A group of photographs by Miller was exhibited at the Museum of Modern Art, N. Y., during Oct.–Nov. 1947

A new Oscillo-Record camera by Fairchild made photographic records of high-speed transients, stationary patterns of periodically recurring phenomena, or any type of phenomena that could be put on a cathode-ray oscilloscope. A 35 mm. roll film camera, electronic film speed control unit, periscope cone, mount, cables and data card unit comprised the complete assembly of the camera. Either an f/2.8 or f/1.5 lens was available. A shutter, adjustable for speeds up to 1/400 sec., was supplied for taking single exposures but was not used when making continuous motion recordings. Film transport speed could be varied from 1 in. per minute to 3,600 in. per minute. With a 100-ft. reel, the camera could operate from 20 sec. to 20 hr.; with the 1,000-ft. film magazine, from $3\frac{1}{3}$ min. to $8\frac{1}{3}$ days. The rate of film movement was automatically registered along the film edge and handwritten data could be recorded directly on the film. Direct observation of the cathode-ray tube while the camera was operating was made possible through the use of the periscope cone.

A cut-sheet film Fluoro-Record camera supplemented the Fairchild Roll Film Fluoro-Record camera (announced in 1946) and was designed specifically for small-scale chest X-raying surveys. The fluoride coated lens is rated at f/1.5 with a focal length of approximately $4\frac{3}{8}$ in. No shutter is provided because exposure time is determined by the duration of the image on the X-ray unit's fluorescent screen.

**The Electron Microscope.**—After World War II many large electrical concerns in Europe designed electron microscopes for commercial production. The instruments were both electrostatic and magnetic and incorporated a number of ingenious features. One of these new instruments was produced by the Philips company in Eindhoven, Holland.

From the photographic point of view, two new devices developed for the electron microscope were of interest. The first was a new method of determining the exact focus of the instrument which is quite analogous to the use of a coupled range finder on a photographic camera. This device consisted of deflecting plates which deflect the electron beam bombarding the specimen. The arrangement was such that the specimen was illuminated alternately by two parallel beams arriving from different directions. This resulted in doubling the out-of-focus final image; the displacement between the two images was determined by the degree to which the system was out of focus. The system made it extremely easy for the relatively inexperienced operator to achieve exact focus. The basic idea of deflecting the illumination was introduced by the Philips company in their instrument. The Radio Corporation of America (RCA) modified it in their own lens by using a square wave alternating deflecting potentials. Thus, in the Philips system an enhanced blurring of the image in the out-of-focus condition was achieved, while in the RCA instrument two sharp and separated images were observed.

The other development, which came entirely from the RCA laboratory, was an extremely high contrast magnetic objective lens. In electron microscope lenses, unlike ordinary lenses, the contrast in the image is controlled by the size of the aperture used, the contrast increasing as the aperture is decreased. The new objective had two components, the first with a focal length ten times longer than normal (22 mm., instead of 2.2 mm.) so that the same effective numerical aperture could be achieved with diaphragm openings ten times greater. With this it was possible to achieve numerical apertures as small as $5 \times 10^{-4}$ ($f = 1/2000$). While such small apertures result in considerable loss of resolving power, because of diffraction phenomena and Abbe's law, they give an enormous improvement in the contrast obtainable, with the result that internal structures of bacteria can be observed where the older type of lens shows a complete blank. This lens had already resulted in some startling discoveries concerning the growth of the bacteriophage particles within the bacterial cells.

Eastman Kodak company announced the development of a "photographic memory" camera for use by the U.S. navy in a large electronic calculator. This new camera would record mathematical data at superhuman speed—1,000 numbers, of 12 digits each, every second. The electronic calculator controlled and presented information in the form of spots of light on the face of a cathode-ray tube, resembling the viewing tube of a television receiver. The Kodak "memory" camera would then photograph each pattern of spots as it was produced by the moving electronic beam within the tube. Thus the numbers were permanently recorded. The film goes through a rapid development and then is projected onto photoelectric tubes for reading.

**Other Developments.**—In the field of sensitized films and paper the Eastman Kodak company produced: Kodak Velite paper for making contact prints in normal artificial illumination, eliminating the use of a darkroom; Kodak Platino paper for enlarging purposes; Kodak Illustrators' Azo paper, a contact printing paper designed for the commercial photographer; Kodagraph Autopositive paper developed to give high contrast in modern drawing reproduction.

Special "nuclear track" photographic plates made in the Eastman Kodak laboratories were used by scientists to picture actual atomic fission and to study action of highly charged nuclear particles. These sensitized plates were supersensitive to the electrical charges carried by atomic particles. At the same time they were relatively insensitive to light, which affects ordinary film, and to X-rays. When a highly charged particle sped into the emulsion a dotted line of affected silver grains was produced. This was the path of the nuclear particle through the emulsion.

The Kalart camera was the first completely new design postwar cameras. Made by the Kalart company of Stamfo Conn., it featured many innovations for a camera using $3\frac{1}{4}$x cut-sheet films. The built-in features included batteries operating the front shutter, flashing the photoflash lamps a illuminating the focuspot in the range finder. There were u usual safety devices to ensure the making of exposures. A p ture could not be made until the dark slide was withdrawn, th preventing any blanks as in the case of the ordinary pr cameras using cut-sheet films. Also the flash would not opera until the shutter was cocked and the dark slide withdrawn, th preventing misfiring of lamps.

The combination range finder and view finder was built in the camera body, and could be operated from either the rig or left side of the camera. The same dual operation was al possible with the built-in body release for the front shutt which was operated electrically. Within the view finder the was an illuminated rectangle indicating the actual picture ar covered on the film. When both eyes were kept open this illum nated rectangle appeared to be seen externally in the subje field of view. In this way the photographer could see the lim of the picture area superimposed upon the subject area in fro of the camera. This was the first time that such a view find system had ever been put on a camera.

Other features of the Kalart camera included mechanical sy chronizing adjustment from 0 to 20 milliseconds, interchang able lenses, triple extension bellows, automatic focusing bra and the usual rising and sliding front lensmount. There were n visible wires on the camera for the operation of the flashlamp The flashlamp reflectors were inserted into brackets and aut matically attached for flash use.

There were few changes during the year in the field of syn chronized flash photography. The Kalart company produce the Kalart Compak Battery-Flector, a Master Battery Case an Paraplanatic Reflector, the Synchrostrob for repeating flas tubes and a Sistogun Model II for use on the Speed Graph focal-plane shutters.

A new Kodaslide 1,000-watt projector was an important add tion to projectors using 2x2-in. lantern slides. With continue increase in the use of colour slides, this new Kodak projecto would be important for use in larger rooms and to project large brilliant image. Kodak also brought out a Brown Tone for making warm-tone prints and a ready-to-use Durol deve oper for photofinishers.

The new Agiflex, first all-British postwar camera, was show in England the latter part of the year. This single-lens refle camera made $2\frac{1}{4}$x$2\frac{1}{4}$ pictures with an f/3.5 Agilux Anastigma lens of 8 cm. focal length and a focal plane shutter. In appear ance it was similar to the prewar Korelle Reflex camera.

**Pictorial Photography.**—Revived interest in amateur pho tography during 1947 was nowhere more evident than in th pictorial field. According to the *American Annual of Photog raphy,* 3,041 pictorialists had one or more photographs accepte in a recognized salon with a total of 17,498 prints being exhib ited to the public—an increase of $33\frac{1}{3}\%$ over 1946.

The Museum of Modern Art in New York city presente three photographic exhibitions during the year of unusual inte est. One was a magnificent display of the work of Alfred Stieg litz. Another presented the candid shots of the great Frenc photographer, Henri Cartier-Bresson. A smaller show displaye the work of Leonard McCombe, Wayne Miller and Home Page. Announcement was made in the fall of the appointmen of Edward J. Steichen as director of the museum's departmen of photography.

The Photographic Society of America, largest organizatio of amateur photographers in the world, continued to grow, pass the 7,500 mark. With 34% of its membership actively en-ged in pictorial photography, the interest of the others lay in ch fields as colour, nature, technology, photo-journalism and tion pictures. (*See* also MOTION PICTURES; NEWSPAPERS D MAGAZINES; TELEVISION; X-RAYS AND RADIOLOGY.)

(W. D. MN.)

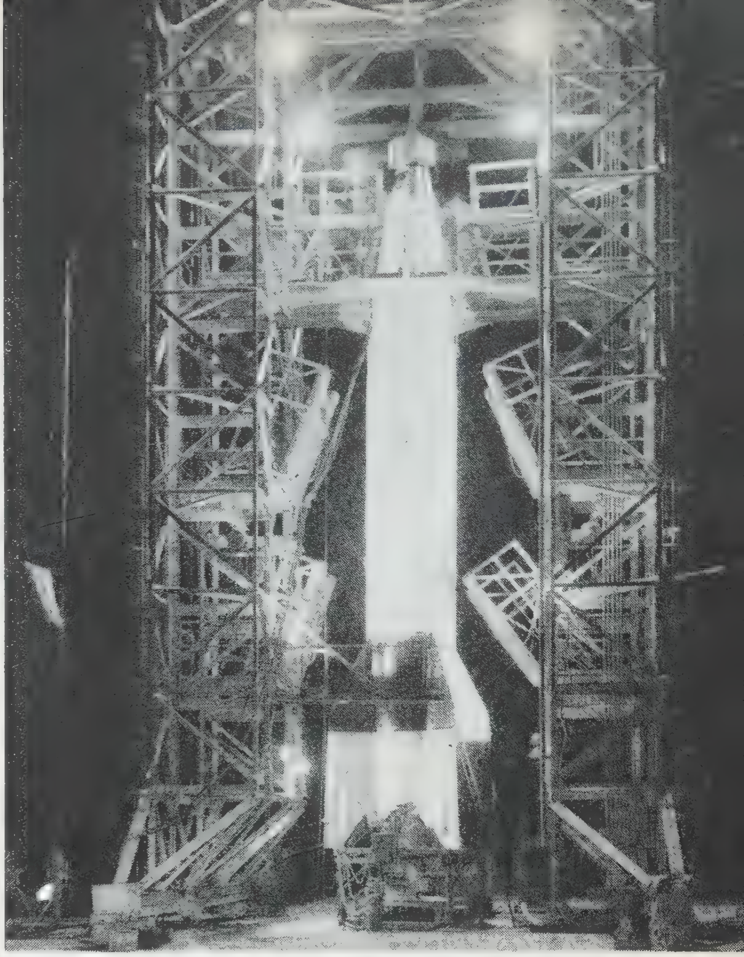
**YSICS.** The year 1947 was not marked by any discovery of such importance as to demand a re-evaluation of sting crucial experimental evidence upon which the funda-ntal concepts of physics were based. A great deal of work, dden during the years of World War II, was released for pub-ation. It was believed that "declassification" had made public arly all fundamental progress in nuclear physics, with the ception of a few numerical constants of great importance in sion. In the U.S., in 1947 the world's most active research ntre of physics, the need for trained physicists in government boratories, the strong demand from industrial organizations, d the high enrolments of students in colleges and universities mbined to create an acute shortage of trained personnel hich would require at least several years to ease. Never were S. physicists in so good a position to do good service.

**Accelerating Machines.**—Modifications of the cyclotron d betatron had been discussed theoretically in the literature r nearly two years, with the purpose of creating beams of rticles of greater energy than the standard instruments could tain. The modification consisted in adding the synchrotron inciple, often called the principle of phase stability, to the achines in their conventional form, following an idea sug-sted independently by V. Veksler in the U.S.S.R. and by M. McMillan in the U.S. The modified instruments were lled synchrotrons when their use was restricted to electron celeration, and synchro-cyclotrons when the design was for e acceleration of ions only. The most notable example of the tter type was the 184-in. instrument in the radiation labora-ry of the University of California. The 184-in. dimension dicated the diameter of the two circular pole pieces.

Although this instrument was originally planned as a con-entional cyclotron, it was adapted to the synchro-cyclotron rinciple, and developments were contained in two important apers appearing in *The Physical Review.* The first of these, D. Bohm and L. L. Foldy (*Physical Rev.,* 72: 649) treated e theoretical problem of starting an ion beam in the accelerat-g chamber. The second, by W. M. Brobeck, E. O. Lawrence, R. MacKenzie, E. M. McMillan, R. Serber, D. C. Sewell, M. Simpson, and R. L. Thornton (*Physical Rev.,* 71: 449), ecorded the initial performance of the instrument. That the ork of eight scientists could be recorded within the limits of two-page article was merely a sign that physics dealt with uch large and complex machines that a whole team was re-uired to design, adjust and maintain each of them.

Tests were made with hydrogen ions (protons) and with elium ions (alpha-particles), and though direct measurements f the energies reached were not made, it was expected that hese would be 195 and 390 Mev. respectively. The latter figure exactly twice the former on account of the double charge arried by the alpha-particle. The energies fall in the range hich was theoretically needed to carry out systematic experi-ents on the production of mesons. Since knowledge of the eson's properties appeared to be the key to a proper under-tanding of the forces in the nucleus, reports of new experi-ents, planned or performed, with particles from the synchro-yclotron were awaited eagerly.

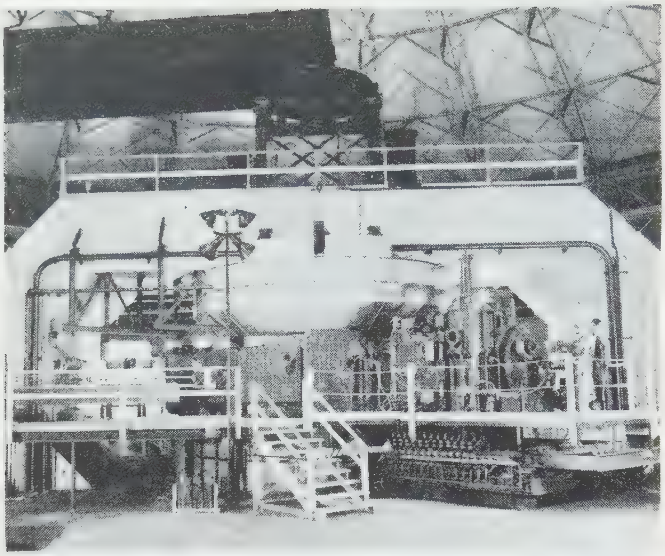
Although the pole pieces were 184 in. in diameter, it was not ossible to use the whole of the inter-polar volume effectively. or a variety of reasons, difficulties occurred in keeping the ion eam up to full strength as it spiralled outward from the centre of the dees. These difficulties were not overcome completely. The ion beam was good as far as a diameter of 80 in., after which it fell rapidly, and was lost at 164 in.



**V-2 ROCKET** on its launching stand ready for test firing, as part of an upper atmosphere research program conducted by the U.S. army and scientists of the Naval Research laboratory in 1947

Columbia university was busy with preliminary work on a 450,000,000-v. synchro-cyclotron, and larger instruments of the "race-track" variety were being designed to reach the 1,000,000,000-v. mark.

**The Uranium Pile.**—The active material of an atomic bomb, either uranium 235 or plutonium, had to be separated or manufactured in pure form from natural uranium. During World War II the preparation of these materials on a military scale was carried on only in the U.S., although scientists of other nationalities were called in to help. Plutonium was one of the final products created in a chain-reacting pile, usually of uranium and graphite. In 1945, Great Britain began to set up her own atomic energy research establishment at Harwell, where a uranium-graphite pile was operated for the first time in Europe in Aug. 1947. An account of this event under the encouraging title "Peaceful Applications of Nuclear Fission" was carried by *Nature,* 160: 451 (1947) in the form of a report of speeches made by J. D. Cockroft and others at the British association meeting in Dundee. Cockroft, the director of the establishment, emphasized that the pile was a potential though not a certain new source of power for the world. The low-power pile at Harwell, designed for experimental work only, contained several hundred tons of graphite, and probably tens of tons of uranium. So dense is uranium, however, that only about one per cent by volume was composed of that metal. Surrounding it was a concrete shield about five feet thick. Loading the pile, which meant inserting uranium in spaces purposely left in the graphite, occupied ten days. During loading, the neutron flux increased steadily, and towards the end, very rapidly, as the



THE 184-IN. SYNCHRO-CYCLOTRON, based on the principle of stable orbits, which was being used in nuclear research at the Radiation laboratory of the University of California at Berkeley in 1947

multiplication constant increased towards the critical value, unity.

This first Harwell pile was a low-power one, designed for operation at about 50 kw. Its chief function was to be the production of radioactive isotopes for use as tracer elements in physiology, metallurgy and other sciences.

A second pile for the study of power production was to be built at Harwell, using uranium sheathed in aluminum, to prevent oxidation and escape of fission products. The presence of aluminum set a serious limitation on the use of the pile for power production (via steam) since it is thermodynamically impossible with ordinary condensers to achieve high efficiency in a steam turbine operated at a temperature low enough to preserve the essential properties of the aluminum sheathing. This second pile was planned for 1,000 kw., which would permit about 1 gram of useful fission products to be manufactured per day as a side-line.

**Neutrons.**—During the fission of uranium, it was known that temporary products, lying in positions near the middle of the periodic table and possessing an unusually high neutron-proton ratio were first produced. They were unstable. They decayed, and some atoms emitted neutrons in the process. All this, however, took time. Those neutrons which were not liberated at the instant of fission, but which were freed later, were termed delayed neutrons.

The presence of four groups of delayed neutrons was apparently known in 1942, but the half lives then determined were only approximate. W. C. Redman and D. Saxon (*Physical Rev.*, 72:570) gave these half lives with much greater accuracy than before, and also gave the results of experiments they carried out on delayed neutrons from plutonium 239 irradiated in the Argonne pile. It turned out that the delayed neutrons from plutonium also occurred in four groups with the same half lives as the corresponding groups from uranium 235. The relative intensities of the four components were, however, different in the uranium and plutonium cases. The number in each component was generally greater for uranium than plutonium, and the total number of delayed neutrons, including the four components, was about twice as great per fission for U 235 as for Pu 239.

From the point of view of the structure of the nucleus these results indicated that upon fission U 235 and Pu 239 broke down in similar fashions, which suggested that the component particles were arranged in the same way in both nuclei. It was also surmised that the four mass units by which Pu 239 excee U 235 represented the stable alpha-particle which Pu 2 emitted in the course of its normal decay, and that the add tion of this alpha-particle to the lighter nucleus did not distu its fundamental structural plan.

After 1940, great emphasis was put on the study of sl neutrons, partly because it was upon these that the action of chain-reacting pile depended, and partly because nuclear tran mutations in general could be achieved more readily with slo than with fast neutrons. Information describing the interacti of neutrons with matter was usually given in terms of cro sections. A neutron cross section of (say) gold represents th effective target area which one atom of gold presents to o coming neutrons. Typical cross sections were found to b between $10^{-21}$ and $10^{-24}$ cm.$^2$ per atom. The values, howeve varied greatly from one kind of atom to another and from o neutron velocity to another.

A great many papers were published in 1947 on the cro sections of atoms for neutrons. The results were reached by variety of methods, including mechanical velocity selector crystal diffraction, and time of flight techniques. When th researches of men in different laboratories were compared was found that reasonable agreement existed as to the order o magnitude of the results, although discrepancies in matters o detail were fairly common.

**Significant Research.**—Other important developments du ing 1947 included the following: The mass of the charged meson the key to nuclear structure, was determined by William B Fretter (*Physical Rev.*, 70: 625) to be unique and to be abou 200 electron masses. Thus earlier speculations and interpreta tions of experimental results on the basis of charged meson with much smaller masses were discarded. At the University o Bristol, England, a group of physicists (*Nature*, 160: 453 studied the tracks of cosmic ray particles recorded in the emul sions of special photographic plates, and offered some evidence not entirely decisive, for the existence of neutral mesons of th same masses as charged mesons.

Experimental flights of captured German V-2 rockets con ducted by the ordnance department of the United States army at its proving grounds, White Sands, N.M., were utilized b scientists to measure the pressure and temperature of the at mosphere far above the maximum level (about 25 km. or 15 mi.) previously accessible to free balloons. Reliable data were obtained up to 120 km. or approximately 75 mi., at which alti tude the measured pressure was less than 0.0001 mm. of mer cury. With these new data it was possible in some respects t improve upon the information given in "Tentative Tables fo the Properties of the Upper Atmosphere," a 1947 publicatio of the National Advisory Committee for Aeronautics. On tw flights the V-2 rockets carried spectrographs with which th solar spectrum was photographed at an altitude of 80 km., giv ing spectrograms representing the distribution of intensity i the sun's radiation more truly than ever before obtained directly

Horace W. Babcock's measurement (*Physical Rev.*, 72: 83) o the polar magnetic field of 78 Virginis provided the thir celestial object whose angular momentum and magnetic dipol moment were known. The other two were the sun and th earth, for which two it had long been known that the dipol moments and angular momenta were directly proportional Babcock's observations on 78 Virginis confirmed the same regu larity for this third body, so that, as P. M. S. Blackett re marked, the principle must be taken seriously as a possible gen eral law of nature for all massive rotating bodies. The effec was so small that it could not be detected using masses an angular velocities attainable in laboratory experiments.

A group of U.S. chemists and physicists established th merical values governing the amount of radioactive carbon $^{14}$) normally present in living organisms. That it actually sted could be the result only of the occurrence of some neu- ns in the flux of cosmic rays. An interesting deduction was ıt in organic matter, once dead, the quantity of radiocarbon uld decrease exponentially, at a known rate. This offered a ssibility of determining the age of items like wheat kernels red in the burial places of past civilizations.

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## ysiology.

**Physiology of Discipline.**—The physiological mechanisms of discipline were lucidly discussed 1947 by R. P. MacKay, who pointed out that the conditioned lex is the unit of character in that it is the basis of all learned acquired behaviour. The amount and kind of discipline (or nditioning) that children are subjected to will largely deter- ne their adult character, including their moral stature and eir tendency toward neurotic behaviour. The elements re- ired for the inculcation of good behaviour habits are the same ments that are involved in establishing conditioned reflexes. mong the most important of these elements may be mentioned e objective, which in terms of discipline should be ethical andards such as love of truth and devotion to duty. Another ment is an atmosphere of friendliness, which, for discipline, eans that the child must be loved by the parent. Further fac- rs for successful conditioning are teaching by example, intelli- nt use of reward and punishment and consistency of atti- des.

**Experimental Insomnia.**—Prolonged wakefulness was main- ined in a large group of young men for the purpose of study- g the physiological changes which occurred. With the excep- on of an increase in the electrical activity of the brain, no her significant physiological or biochemical changes were ob- rved during 112 hr. of experimental insomnia. This indicated at the fatigue is confined to the higher centres of the central rvous system.

In tests of short duration, little change occurred in perform- nce as measured by a wide variety of tests of psychomotor ills. When sustained effort was required, however, poorer per- rmance resulted. This effect first became evident after about hr. of sleeplessness. The inability to sustain effort is related the increased difficulty of remaining awake and not to any uscular weakness.

The chief disturbances produced by sleeplessness are psycho- gical. The principal symptoms noted were apathy, bursts of nreasonable laughter, autistic expressions and the tendency to- ard hallucinations. (In the great majority of the subjects these hanges are mild and disappear following sleep.)

**Restricted Caloric Intake and Longevity.**—Several studies ublished in 1947 confirmed the fact that restricted caloric in- ake increases the average length of life of animals. An effect pon fertility and upon the incidence of tumours was also noted. Vhen the diet of mice was limited to two-thirds of the calories onsumed by litter mate controls which were fed large amounts, he protein and vitamin intake of the two groups being the ame, 25% of the mice on restricted intake were alive at an ge when all of their full-fed litter mates had died. The special train of mice used in this study showed an incidence of cancer f the breast of 19% when fed a normal diet. This fell to zero the group whose food intake was restricted. Caloric restric- ion for eight months, with subsequent full-feeding, did not pre- ent a significant incidence of mammary cancer although it aised the average age of onset of cancer above that in com- arable fully fed controls. The caloric restriction employed in hese studies retarded sexual maturation and thereby depressed the fertility of the animals. Remarkably, the calorie underfeeding did not prevent subsequent maturation and normal gestation at an age when full-fed litter mates had become sterile from senility. The mechanism of action of restricted caloric intake in increasing longevity and decreasing tumour incidence remained unknown and offered a fruitful field for research.

**Radioactive Red Cells in Determination of Blood Volume.**—The radioactive isotopes continued to find ever more extensive use as tools for physiological research. An excellent example of the application of this new technique was afforded by the use of "tagged" red blood cells for the purpose of determining the volume of blood in human subjects. Volunteer normal medical students served as donors. They were fed one of the radioactive isotopes of iron (in these studies iron 59 was used) for several weeks so that the radioactive iron became incorporated into their red blood cells. A small portion of the donor's blood was then injected into a recipient with compatible blood type in whom the volume of circulating blood was to be determined. By determining, by means of Geiger-type counters, the radioactivity of the donor's blood cells and the radioactivity of the recipient's blood cells, after enough time had been allowed to permit thorough mixing of the donor's blood with the recipient's, the amount that the donor's cells had been diluted could be determined. From this dilution factor an accurate calculation of the total blood volume of the recipient was made. It was believed that this method of determining blood volume was more accurate than those previously used. When this new method was compared with the widely used dye-dilution method, large discrepancies were observed. The greatest error in the dye method is the removal of a portion of the dye from the circulating blood by the cells which line the smallest blood vessels. Since this adsorption onto the lining cells is variable, correction for it cannot properly be made.

**Toxicity in Animals of Processed White Flour.**—For about 25 years mills had been exposing flour to nitrogen trichloride gas for the purpose of aging flour artificially. Such treatment (called "agenizing") improves the baking quality of flour so that a larger, softer loaf of bread with a silkier, somewhat whiter crumb results. It was shown in 1947 that dogs and several other species of animals are susceptible to a toxic principle produced by the action of nitrogen trichloride on the proteins of flour. Dogs were found more susceptible than any other species so far studied. When fed to dogs as a major portion of their diet, such bread produces a set of symptoms variously termed canine epilepsy, canine hysteria, running fits and fright disease. Manifestations of the condition consist of inco-ordination of movements, weakness and epileptiform convulsions. The convulsive seizures begin with a premonitory howl, followed by falling over, salivation, running or paddling movements and finally jerking movements. Electroencephalograms showed irregular brain waves similar to that seen in human epilepsy. The symptoms in rabbits, cats and ferrets appeared comparable with those in dogs, though considerably larger or more prolonged dosing was required to produce them in cats and ferrets. Monkeys showed no convulsions but in some instances displayed changes in the encephalogram. Chickens, guinea pigs and hamsters gave no evidence of toxic reactions. Twelve human volunteer subjects revealed no symptoms or encephalographic changes after eating agenized flour in amounts and for periods of time which would unfailingly produce hysteria in dogs. The decision as to whether agenized flour has any toxic effect in man awaited the outcome of detailed experiments.

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**Pig Iron:** *see* IRON AND STEEL.
**Pigs:** *see* HOGS; LIVESTOCK.
**Pineapples:** *see* FRUIT.

**Pittsburgh.** Recovering from labour disturbances of the previous year, production and trade in Pittsburgh, Pa., rebounded to peaks in 1947. For 11 months industrial production stood at 187% of the 1935–39 average or 24% above the same period of 1946, as compared with the federal reserve board's national index, which was only 9% higher. Steel operations averaged 97% of capacity, or 27% above 1946, and preliminary estimates for bituminous coal production indicated a gain of 17%.

The Bureau of Business Research of the University of Pittsburgh reported employed persons in the Pittsburgh district at 128% of the 1939 average or more than 10% above 1946. The bureau's index for pay rolls for the district stood at 242% of the 1939 level or 24% above 1946.

Retail trade in the 11 months reported 17% higher dollar volume than in the corresponding months of 1946, while department stores reported an increase of 9%.

Substantial progress was made in meeting the housing shortage. Federal Housing administration insured mortgages increased 117% in western Pennsylvania in the first eleven months.

The city council and the board of public education enacted new taxes for 1948 on personal property and on the gross volume of mercantile enterprises. The city also enacted a tax upon amusements admission fees, and the school board adopted a per capita levy. As 1947 ended, several of these new levies were under court attack as unconstitutional.

Long effort to eliminate excessive smoke over Pittsburgh culminated when a city ordinance took effect, requiring the burning of smokeless fuel or the use of equipment which would burn bituminous coal smokelessly. Steps were under way to extend control throughout Allegheny county. The Pittsburgh Consolidation Coal company announced plans to build a $120,000,000 plant to convert coal to gas and other smokeless fuels.

The Pittsburgh Parking authority was organized to erect municipally-owned, multilevel garages in the downtown district. Construction was vigorously advanced on the Penn-Lincoln high-speed parkway to bring the traffic of U.S. routes 22 and 30 from the east into the business district.

Political history was made when, at the November election, the Democratic party made a clean sweep of county offices for the first time.

A sample survey for the U.S. census bureau indicated that the metropolitan district increased in population about 5% or 106,000 to a total of 2,100,000 after the 1940 census. Latest official population figure for Pittsburgh was 671,659 as enumerated in 1940, slightly less than half that of Allegheny county, including 3 other cities, 74 boroughs and 51 townships. City area was approximately 54.3 sq.mi. and county area 747 sq.mi. Taxable real estate was assessed in Allegheny county at $1,925,000,000 of which $970,000,000 was in Pittsburgh. (C. F. Ls.)

**Pius XII** (1876– ), the 262nd successor of St. Peter in the see of Rome, was elected by the cardinals in conclave on his 63rd birthday, March 2, 1939, and was crowned as pope on March 12. (For details of his early life, see *Encyclopædia Britannica.*)

Consolidation of the peace and reconstruction of the world particularly Europe, on humane and Christian lines continued to be the foremost concerns of the pope during 1947. Addressing members of two Italian women's organizations on Jan. 22, he urged them to enkindle in themselves an ardent zeal to collaborate in the redemptive work of Christ by living the greatness of a Christian life in its fullness with persevering constancy. Quoting St. Ignatius of Antioch, the pope said: "In times during which it is the object of the world's hatred, Christianity is not a matter of persuasive words, but of greatness." In similar vein on the feast of St. Benedict, March 21, 1947, he issued an encyclical letter, *Fulgens Radiatur,* urging the peoples of the Christian world to pattern their lives upon the principles of religion else human society will collapse.

During an audience with members of the United States delegation to the International Labour Office conference in Geneva on July 16, the pope re-emphasized the right and duty of the church to teach the moral aspects of economic problems. He called attention to basic principles of sound social order including respect for human dignity and the dignity of labour, the solidarity of all people in the human family, and the demands of the common good over individual gain.

On Oct. 29 in the course of an address to the minister plenipotentiary of the republic of El Salvador to the Holy See, the pope urged all who have the cause of a just peace at heart to make use of the opportunities offered by the United Nations even if it appears that their appeals for peace remain unheeded at present.

While receiving members of the United States subcommittee on immigration and naturalization on Nov. 3, Pius XII pointed out that the question of immigration today "presents a wholly new problem"; that while always the welfare of a country as well as that of the prospective immigrant must be considered and will sometimes dictate restrictive legislation, "circumstances will at times almost cry out for the easing of the application of the law."

The most important papal document of the year was the encyclical on the liturgy, *Mediator Dei,* issued on Nov. 20. It stressed the importance of social worship, at the same time warning against abuses and unauthorized innovations.

On Dec. 18, the pope issued a short encyclical letter, *Optatissima Pax* ("Most Desired Peace"), calling especially for the prayers of children for the peace of the world. In his radio message of Christmas Eve, the pope pointed the way to international peace and reconstruction: "Only through prayer and work through truthfulness and courage, through a genuine and universal spirit of brotherhood, will the year 1948 be for wounded Europe and for the nations torn by discord, a year of rebirth and peace." On Dec. 31, warning that 1948 would be a year of decision and crisis, he rejected the idea it would also be one of the most calamitous in history.

On several occasions Pius XII became the target of soviet press attacks. After telling visiting newspapermen on Jan. 18 that a new totalitarianism had succeeded naziism, the *New Times,* Moscow, condemned him as an international reactionary and said the Vatican conducted an "anti-Soviet, antidemocratic campaign throughout the world." In October, the U.S.S.R *Literary Gazette* attacked him for backing U.S. foreign policy; previously Pius XII had mentioned to visitors that sometimes force is legitimate in enforcing law and order.

During the year the pope addressed several messages to U.S. Catholics. On the first day of Lent, in a radio broadcast, school children were urged to contribute "pennies and dimes" to aid starving youth in Europe. In October Holy Name men, at their ional rally in Boston, Mass., were told laymen have an im- tant task to perform in social and spiritual reconstruction. Oct. 12, in a radio address to the National Conference of tholic Charities convention at New Orleans, La., Pius XII rned of the dangers from "social and racial bias." To the ional meeting of the Catholic Rural Life conference (*q.v.*) he it a telegram commending work for displaced persons and ir resettlement. On Nov. 29 U.S. Catholics were urged to aid hungry of Europe and the Orient.

The Swedish government specially honoured the pope in bruary, conferring upon him a medal for his outstanding serv- s to humanity. (*See* also ROMAN CATHOLIC CHURCH; VATI- N CITY STATE.) (J. LaF.)

## ague, Bubonic and Pneumonic.

Recurrences or new eruptions plague in alarming proportions were not reported during 47, but an outbreak occurred in Turkey along the southern ontiers of Urfa during March and April after several years quiescence or absence of the disease. It was assumed that source of this outbreak developed from sporadic cases nong the nomadic peoples of Syria, among whom recurrences minor degree had not been uncommon. Human cases were ported also from large sections of Africa, eastern and western ia, Oceania, and smaller numbers from South America.

Establishment of the infection among rodents of the field and untryside (sylvatic plague) served as a reservoir of en- micity in some countries. A review of investigations in the ited States which had been conducted consistently for the 1 years prior to 1948 specified 9 genera of rodents, and 9 ecies of the genus *Citellus* in which plague was found; 6 addi- onal genera and 2 species of *Citellus* from which plague-in- cted fleas were collected; and 25 species of fleas which served vectors under controlled experiments in the laboratory. eterminations were made from collections of more than 595,- 0 field animals of 5 orders and 45 genera, which included 26 ecies of the genus *Citellus* and its subgenera; and from more an 1,186,000 fleas among which were one or more species of , genera. These systematic investigations extending over ap- oximately the western half of the United States among the digenous rodents and their fleas indicated the potentialities r tenacious persistence of the enzootic.

Observations in other countries were confirmatory. Canada ported the presence of plague in fleas collected from ground uirrels (*Citellus richardsonii*) in Alberta and Saskatchewan, d the reporters remarked that there was no colonization of mestic rats in Alberta, though there was in the larger cities Saskatchewan. During 1947 evidence was obtained also of enzootic among field animals along the Peruvian-Ecuadorean oundary, which gave rise to 19 human cases among a scattered d sparse agricultural population. The investigator reported ere was a complete absence of domestic rats in the region; d the fleas (*Xenopsylla cheopis, Ceratophyllus londiniensis*) hich are the transmitting vectors elsewhere in the country ere not present. The tissues of a black squirrel and of a pool seven brown ground squirrels were infected with plague, and ve dead native field rats were found. The predominant flea as of the genus *Rhopalopsyllus,* whose ability as a vector was eing subjected to experimental examination.

The explanation of the persistence of plague over years in eas of northern latitudes or seasonal cold temperatures (Can- da, United States, Manchuria, etc.), in which principal rodent osts hibernate for several months, was a subject of speculation ased on the survival of fleas under protected conditions in the boratory, and on suggestive observations in the field. It was emonstrated that infected fleas (*Diamanus montanus*) will survive in a temperature of 40° C. from October to March in nests with hibernating ground squirrels (*Citellus richardsonii, C. townsendii*), and, though most of them become cleared of the bacterium, a few remain infected and an occasional one will produce the disease in other hosts by biting when removed from the nest after the period of hibernation.

It was determined during the same series of experiments that an occasional ground squirrel into whose skin the microorganism of plague (*Pasteurella pestis*) was introduced artificially within a few days after the animal had begun its hibernation continued its sleep without interruption, awoke four months later, and was alert, active and appeared entirely normal through a period of six days after awaking. On the seventh day illness with plague developed, followed by death on the eighth day, with infection at the site of inoculation, an adjacent bubo, and a bacteremia with distribution of the microorganism throughout the organs. Thus it was demonstrated that the infection can be carried four months in fleas under the conditions of hibernation of ground squirrels; and in a latent state in the squirrel which was infected shortly after the beginning of its winter sleep.

It may be noted as a possible contributing factor to the recrudescence of the disease in spring that the fleas began active copulation upon removal from the nest at 40° C. to a temperature of 65° C. Thus the nest in nature would probably have a greatly increased population of potential flea vectors at the time of the increase of the host numbers with the birth of the young.

Pneumonia of plague can be induced in white mice, and in other experimental animals by instillation of a suspension of *P. pestis* into the nares. It was shown that treatment with streptomycin of mice infected by this method will prevent the development of the pneumonia, even though the drug is administered 48 hours after the instillation. It appeared also that mice immunized by the administration of suspensions of the microorganisms which have been killed by chemicals will not develop pneumonia when the instillations are made subsequently.

Preparations for immunizing purposes were made by extracting masses of the dried bacteria with acetone followed by neutral saline solution. Two water soluble reagents (antigens) were obtained which produced antibodies in the serum of the animals to which they were administered.

The destruction of rats on ships by the periodic application of 1080 (sodium fluoracetate) was adopted by U.S. quarantine authorities in lieu of ship fumigation. The poison is dissolved in water contained in small paper cups which afford drinking water for the animals at suitable stations in their runways on the ships.

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**Plant Industry, Soils and Agricultural Engineering, Bureau of:** *see* AGRICULTURAL RESEARCH ADMINISTRATION.
**Plasma, Blood:** *see* PHYSIOLOGY.

## Plastics Industry.

During 1947 the plastics industry underwent, for a few months, a rather painful but very salutary recession which resulted in a strengthened industry and in important new applications for plastic products. This slump, first felt in March, was apparent chiefly in the thermoplastic materials which, among other things, find a large market in household applications, and was the direct result of the reduction of inventories and curtailment of orders by retailers.

By the end of July, however, retailers had liquidated their stocks of uneconomic plastics products; the industry was in the course of developing new applications for its materials and was paying more attention to merchandising. As a result, statistics indicated, the industry used about 10% more resins and cellulosics in 1947 than in 1946.

In view of the fact that many moulders had considerable idle machine time during the year, the record of new machine sales, while far below that of 1946, was surprisingly high. Totals for the year were estimated at 420 compression presses, 350 injection presses and 180 extruders, making a new total of machines in the moulding and extrusion industry as follows:

| Type | 1941 | 1945 | 1946 | 1947 |
|---|---|---|---|---|
| Injection* | 1,000 | 1,720 | 3,275 | 3,625 |
| Compression | 8,000 | 12,065 | 12,975 | 13,390 |
| Extrusion | — | 850 | 1,150 | 1,327 |

*The figures do not include "made to order" or "made in the plant" injection presses now operating in the industry.

The new and modernized equipment, coupled with speed-producing accessories such as preheaters for thermosetting materials, resulted in production which was actually much larger than could be indicated by machine statistics; pieces were being moulded in both thermoplastic and thermosetting materials of a size that would have been considered impractical two years previously.

**The Cellulosics.**—Improved industrial design in the direction of heavier moulded cross-sections, made possible by advances in moulding equipment and technique, raised cellulose acetate out of its consumption slump in the fall of 1947. Examples were brush handles, toys and luggage handles. Cellulose acetate sheet material for packaging use held its ground throughout the thermoplastic recession period; new automatic machinery for the manufacture of set-up acetate boxes was a contributing factor.

In places where low-cost, high-impact material was required, such as in toilet seats, football helmets and even in telephone bases cellulose acetate butyrate made decided advances. The speed of injection moulding and the colourability of the materials gave them wider acceptance in new fields.

Ethyl cellulose, famous as the nose of the proximity fuse during World War II, came into wider usage in practically unbreakable toys, in bowling pins, golf club heads, small radio cabinets, hearing aids and refrigerator parts. Its biggest uses continued to be in mixture with amorphous wax as a strip coating for the packaging of machine parts, and in lacquer for the coating of wire insulations.

Cellulose propionate and cellulose acetate propionate, two fairly new moulding compounds, were under continuous test for new applications in many fields.

**Polystyrene.**—Consumption of polystyrene was approximately 92,000,000 lb. in 1947 compared with 67,000,000 lb. in 1946. This 37% increase was far less than was expected at the beginning of the year and was considerably less than the capacity for producing the polymer. The entire styrene production outlook was influenced by the synthetic rubber program, using 75% of butadiene and 25% of styrene monomer.

Ethylene, one of the bases of styrene monomer, with heavy use in antifreeze, detergents and other chemicals, was in short supply in 1947. Benzol, another base material for styrene, and a material with many markets apart from the plastics industry in which it is also a source of phenol, was also in short supply.

Household applications for polystyrene in 1947 were innumerable, including small radio cabinets, refrigerator parts, electrical applications and wall tile. More than 40 moulders went into th production of polystyrene wall tile.

A surface coating for polystyrene mouldings was introduce which was declared to improve the scratch resistance of th pieces, cut down their electrostatic quality and make them mo resistant to hydrocarbons. During 1947 a new high temperatu resistant polystyrene was also introduced which was declared t be boilable for short periods of time. It was being used kitchen utensils, such as tea strainers, and in other objects whe high heat may be encountered. Some progress was made in th use of polystyrene foam as insulating material for freezer plan and cold storage buildings and even for domestic construction.

**Acrylics.**—Because of the limitations of the peacetime ma ket for acrylic sheet in large aircraft construction and becaus of the partial collapse of the immediate postwar market fo fabricated acrylic ornaments and novelties, the acrylic busines in 1947 was limited. Late in the year, however, the industr was given a boost by newly-developed applications of this ma terial to signs and displays of all kinds. In these application acrylic was formed into large shapes, coloured and lighted fro the interior.

Acrylic moulding powder also showed a volume increase lat in the year because of its increased use in the automotive indus try for escutcheons, horn buttons and other decorative element. Here the process for moulding and applying metallics and colou to the interior, making a very beautiful three-dimensional orna ment, became standard as it did in the refrigeration field. I addition to these new uses, there were developments in monome castings for display purposes; watches, silverware and simila fine merchandise were embedded in acrylic castings for stor counter and window displays. A high heat-resistant or boilabl acrylic was being used in 1947 to a greater extent in medica equipment.

**Polyethylene.**—Of all the thermoplastics, polyethylene prob ably made the most spectacular progress in application durin 1947. This material, developed in England during the war, an later produced in large quantities by two U.S. firms, has th lowest specific gravity of any plastic and floats in water.

Polyethylene was used in moulding refrigerator bowls an covers, bottle caps and closures, squeezable bottles for the cos metic industry, electrical parts and chemical equipment includ ing pipe fittings. It was extruded over wire for coaxial cable fo use in the television field. In sheet form it was used in flexibl packaging, as well as for refrigerator bowl covers and severa kinds of low-temperature protection including masts or pylon for television broadcasting. Through a new development calle flame spraying, it was applied experimentally as a surface coat ing or paint with the expectation that it would prevent the col lection of ice. It was also extruded in monofilament form fo use in textile weaving and in very fine tubes for medical appli cations.

**The Vinyls.**—Although the vinyls with a volume of 180,000, 000 lb. in 1947 came second only to phenolics, neither in pro duction nor consumption did they hit the peaks expected. As i was, shortage of plasticizers was serious.

A peculiarity of the vinyls in marketing, because of the wid range of formulation available, is that when one market falls o another can be opened. The use of polyvinyl acetate put up i collapsible tubes for the blowing of balloons by children di verted 400,000 lb. in one month from normal channels. Whe shower curtains became seriously over-produced, the use o vinyl in flooring came to be significant. In 1947, there were fiv manufacturers of vinyl floor tile or roll material for flooring Vinyl butyral as a coating for textiles, spread on with a knife became popular in the manufacture of tablecloths. For upho stery, both supported and unsupported vinyl chloride sheet re used.

The extrusion of vinyl progressed enormously during 1947, e of the main items being garden hose. Extruded vinyl for e and cable covering remained an important application. ore than 1,000,000 lb. of vinyl were used to coat wall covering terials. Vinyl for moulding did not expand, although some of new plastisol or paste compounds showed progress.

An important contribution to vinyl technology during 1947 s the development of the nitrile rubber-type plasticizer which rally bonds or alloys itself with the vinyl and does not mite. A sheet material made from nitrile-plasticize vinyl was t into use in a package for oleomargarine. The colour cape of gelatin was placed inside the package and the housewife rely took the package at room temperature and kneaded it til the colour was well dispersed through the margarine.

**Polyvinylidene Chloride.**—This material, the base resin for ich was produced by only one U.S. maker in 1947, maintained fairly steady market in woven monofilament form for use as ndow screening and automobile slip cover upholstery. It also s given new uses in chemical, paper and textile plants.

**Nylon.**—Production and use of this material for moulding rposes increased during 1947. Improvements in moulding chniques led to its being moulded into gears, grommets and shers. Tap washers of nylon received a thorough market testg and were shown to outlast fibre or rubber washers by many onths. Dip-dyed nylon moulded tumblers and infants' feeding shes which are unbreakable, boilable and permanent were marted with some success although price was a deterring factor. ylon was also used in medical instruments, an important example being a holder-applicator for a radium capsule used in cancer eatment.

**Phenolics.**—Consumption of phenolic materials in 1947 was eyond expectation. Moulding powder use alone increased from 40,000,000 lb. in 1946 to almost 200,000,000 lb. in 1947. Much ster press cycles and larger pieces accounted largely for the crease. Large radio cabinets, vacuum cleaners, office equipent, handles and knobs, caps and closures, communication and ectrical equipment were among the uses.

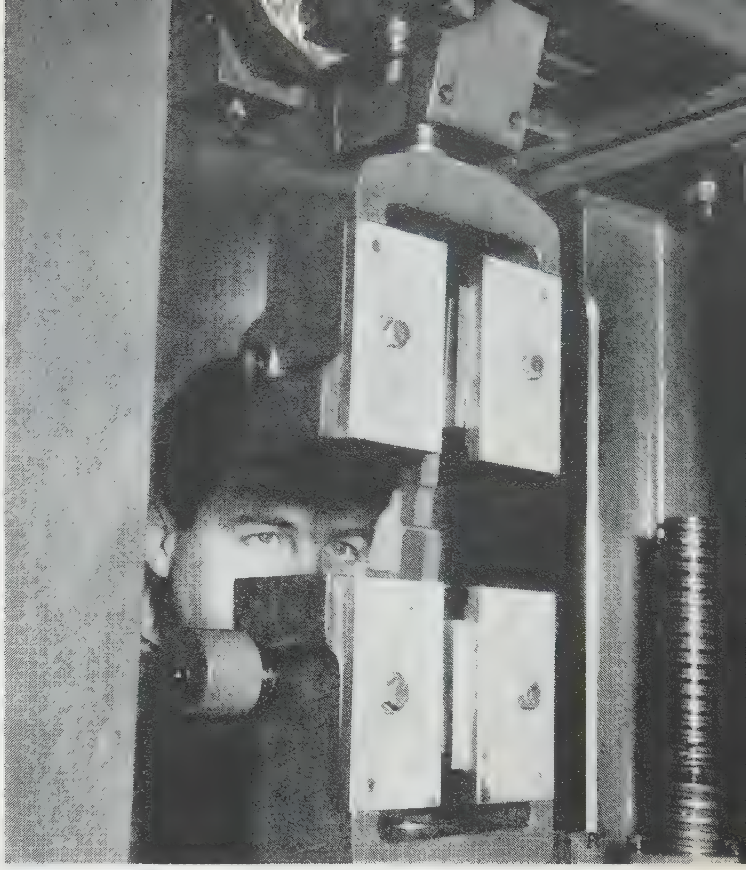
**Urea and Melamine.**—Production of both urea formaldeyde and melamine formaldehyde moulding materials was short f demand in 1947, although the supply of both improved raplly. A new development in moulding of urea and melamine, articularly applied to melamine tableware, was the use of a heet of paper printed in several colours to provide a multiolour effect in a one-colour moulding.

Melamine laminating resins were increasingly used in 1947, articularly in the decorative laminates but also with glass fibre the electrical field. Melamine and urea adhesives for plywood nd furniture manufacture were used in greater quantities than ver before.

**The Polyesters.**—These peculiar war-born materials showed ery little except promise until 1947, chiefly because the resins ere all tailor-made for each job or doctored in the processing lants, and rather antiquated and slow production methods were sed in the moulding. In 1947, however, at least a few large aplications for low-pressure moulded polyesters (with glass mat nd fabric fillers) developed—including large size boats and lugage.

**High-Pressure Laminate.**—About 65,000,000 lb. of highressure laminates were produced in 1947, this figure being quite bit lower than the wartime high level of production but higher han 1946 production. Approximately 15% of the U.S. laminate anufacture was in decorative material with melamine surface. lant capacity increased materially during 1947.

**World Developments.**—Great Britain, while still short of any materials, expanded its plastics industry during 1947 and worked out countless new applications. One peculiarity of the industry was its concentration on the construction field. Wallboard was made of sawdust with resins, acrylics were used in formed pieces for bathroom and kitchen sinks and extensive uses were developed for extrusions in construction.



ALLOY of synthetic rubber with plastic resin being tested at the Bayway refinery, Linden, N.J., in 1947. Evidencing tremendous strength, the plastic alloy broke only after a pressure of 5½ tons per square inch was applied

In Canada lignin, waste material derived from wood in the manufacture of paper, was combined with phenolic resin and surfaced with melamine sheet to make solid sheets of various thicknesses which could be used for either table tops or for wall surfaces.

Australia's plastics industry also expanded in both material production and moulding and fabrication. An all-plastic refrigerator, cylindrical in shape, was produced.

Western Europe and the Scandinavian countries were not back to prewar levels in plastics, although some progress was made. India, Palestine, Egypt, every country in South America, China and the Philippines all had entrepreneurs working toward the opening of plastics industries. (*See* also CHEMISTRY; ELECTRICAL INDUSTRIES; MACHINERY AND MACHINE TOOLS; MUNITIONS OF WAR; PAINTS AND VARNISHES; RAYON AND OTHER SYNTHETIC FIBRES; RUBBER.) (C. A. BN.)

## Platinum Group Metals.

The metals of this group, platinum, palladium, iridium, osmium, rhodium and ruthenium, are so closely associated that world production must be reported as a group.

Table I.—*World Production of Platinum Group Metals, 1940–46*

(In thousands of fine ounces)

| | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|---|
| Canada, total . . . . | 200.0 | 221.7 | 507.8 | 345.7 | 200.4 | 666.9 | 244.6 |
| Platinum* . . . . . | 108.5 | 124.3 | 285.2 | 219.7 | 157.5 | 208.2 | 130.4 |
| O. P. M.† . . . . . | 91.5 | 97.4 | 222.6 | 126.0 | 42.9 | 458.7 | 114.2 |
| Colombia‡. . . . . . | 35.9 | 37.3 | 49.2 | 40.0 | 36.1 | 35.1 | 43.8 |
| So. Africa§. . . . . . | 72.0 | 73.3 | 73.8 | 73.7 | 80.6 | 75.9 | 75.1 |
| United States‖ . . . . | 41.6 | 32.7 | 33.0 | 37.6 | 40.5 | 31.0 | 26.3 |
| World Total (est.) . . | 465 | 479 | 778 | 634 | 520 | 971 | 576 |

*Platinum content of nickel refinery residues. †Other platinum metals, mostly palladium. ‡Crude platinum. §Crude content of ores and concentrates; ordinarily these figures are increased by about 10% by recoveries of osmiridium in gold mining. ‖Total crude and refined.

Table II.—*U.S. Production of Platinum, 1941–46*

(In fine ounces)

| | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|
| Production, total . . | 32,730 | 33,044 | 37,552 | 40,549 | 31,046 | 26,312 |
| Crude. . . . . . | 26,236 | 23,239 | 27,162 | 33,625 | 26,551 | 22,949 |
| Refined . . . . . | 1,805 | 4,333 | 5,205 | 3,286 | 1,068 | 555 |
| O. P. M.* . . . . | 4,689 | 5,472 | 5,185 | 3,638 | 3,427 | 2,808 |
| Imports, total. . . . | 309,995 | 315,002 | 362,251 | 356,212 | 383,298 | 407,210 |
| Crude. . . . . . | 244,849 | 263,376 | 263,893 | 137,192 | 172,029 | 76,012 |
| Refined . . . . . | 9,865 | 32,254 | 41,272 | 70,150 | 72,849 | 119,853 |
| O. P. M.* . . . . | 55,281 | 19,372 | 57,086 | 148,876 | 138,420 | 211,345 |
| Supply, platinum | | | | | | |
| Refinery, output. . | 98,376 | 244,226 | 234,320 | 132,452 | 162,032 | 92,947 |
| Secondary. . . . | 37,522 | 56,150 | 68,613 | 85,942 | 58,942 | 40,385 |
| Imports, refined. . | 9,865 | 32,254 | 41,272 | 70,150 | 72,849 | 119,853 |
| Total . . . . . | 145,763 | 332,630 | 344,205 | 288,544 | 293,823 | 253,185 |
| Sales . . . . . . | 190,075 | 269,176 | 344,719 | 275,648 | 336,851 | 234,479 |
| Stocks. . . . . . | 150,887 | 160,724 | 176,560 | 159,173 | 138,839 | 187,624 |

*Other platinum metals.

In addition to the countries in Table I, there are several minor producers, while the U.S.S.R. has an undisclosed output which has been variously estimated at 100,000–150,000 oz. annually. There was an appreciable output in Canada during the years 1938–44 which had not previously been accounted for, and which is now included in the 1945 figures.

**United States.**—The salient statistics on platinum production and supply in the United States are summarized in Table II.

Shifts in the use of platinum to the various consuming industries are shown in Table III.

Table III.—*Sales of Platinum in the U.S. to Consuming Industries*

(In fine ounces)

| | 1939 | 1943 | 1945 | 1946 |
|---|---|---|---|---|
| Chemical . . . . . . . . . | 20,306 | 131,716 | 115,816 | 31,107 |
| Electrical . . . . . . . . . | 11,952 | 185,281 | 107,260 | 35,007 |
| Dental and medical. . . . . | 13,755 | 27,044 | 30,871 | 21,859 |
| Jewellery. . . . . . . . . | 47,385 | 438 | 81,305 | 144,015 |
| Others . . . . . . . . . . | 6,868 | 240 | 1,599 | 2,491 |
| Total . . . . . . . . . | 100,264 | 344,719 | 336,851 | 234,479 |

During the first three quarters of 1947 there was a reduction in refining activity, imports, and sales to well below the level of 1946. Platinum recovered by refiners dropped to 73,387 oz., crude imports to 38,944 oz., refined imports to 88,889 oz., and platinum sales to 157,878 oz. (G. A. Ro.)

**Plums:** *see* Fruit.

**Plutonium:** *see* Atomic Energy; Physics.

## Pneumonia.

Transmission of primary atypical pneumonia was accomplished in 1946 by spraying bacteria-free filtrates of throat washings and sputum from patients sick with this disease into the nose and throat of normal human volunteers. The disease was again reproduced by inoculating similar materials from experimentally infected persons into a second group of volunteers. In both instances some of the inoculated volunteers came down with minor respiratory illnesses without signs of pneumonia. These studies suggested a possible relationship of the group of minor respiratory diseases to the atypical or viral pneumonias.

Further studies were reported in 1947 by the Commission on Acute Respiratory Diseases concerning the transmission of some of these minor respiratory illnesses to healthy human volunteers by means of bacteria-free filtrates of throat washings obtained from persons with such illnesses. Two distinct types of illness were induced. One was an infection like a head cold of brief duration which developed after an interval of 24 to 48 hr.; the prominent features included nasal congestion and profuse watery discharge with a minimum of sore throat. The other was an infection characterized by a longer and more severe illness, prominence of sore throat, minimal nasal symptoms and an incubation period of five to six days. These illnesses were distinguishable. Primary atypical pneumonia did not develop in any of the subjects. The results of these experiments indicated that at least two filtrable agents, presumably viruses, may induce minor respiratory illnesses in man.

Additional experiments were then undertaken to determine whether persons recovering from the experimentally induced minor respiratory illness had become immunized to reinoculations with bacteria-free filtrates from patients acutely ill with these two types of illness or with atypical pneumonia. Persons who had received the filtrates which had induced the illness having the relatively long incubation period (that is, five or six days) were found to be immune to reinoculation with similar material. Those who received filtrates which induced the coryza-like illness after an incubation period of two days or less were still susceptible to infection with the same material. Cross-immunity was not demonstrable with either filtrate. Furthermore, primary atypical pneumonia could be induced in some persons after they recovered from either of these minor illnesses. The results of these reinoculation studies provided additional proof that at least two distinct filtrable agents or viruses may induce minor respiratory illnesses (common cold, pharyngitis and tracheobronchitis) in man and suggested that these agents are probably distinct from the virus or viruses of primary atypical pneumonia.

**Q Fever.**—An influenzalike disease caused by a rickettsial agent, and often associated with a severe form of atypical pneumonia, Q Fever was first described in Australia. The disease had already achieved prominence in 1947 because of a number of epidemics among laboratory workers in the National Institute of Health and in certain army medical laboratories as well as among British and U.S. troops in the Balkan area. Sporadic cases were reported in certain parts of the United States where the rickettsia had been isolated from ticks, and later in Panamá, where the agent had not yet been found in animals or insects.

Two outbreaks of Q fever among stock handlers and slaughter-house workers were also reported in the United States. In one, which occurred in Amarillo, Tex., there were 55 cases and 2 deaths among 136 employees in 3 establishments, an attack rate of 40%. Epidemiological investigations revealed that cattle were probably the source of the infections. Apparently, a single shipment could account for all of the cases, and interestingly enough, there was no detectable illness in these cattle.

The second outbreak took place in one of the large packing houses in Chicago and involved primarily men working on a sheep- and calf-killing and dressing floor. There were 33 cases among 81 men employed on the floor. The spattering of blood and other body fluids was particularly noticeable in such operations as the washing of carcasses and the handling of viscera, and studies made among the 19 men who worked at these jobs revealed 15 cases of the disease, an attack rate of 79%. The average incubation period of the disease in this epidemic was 19–25 days.

The long incubation period of Q fever makes it possible for a person to acquire the infection in one part of the world, remain well for a considerable period and then come down with the symptoms of disease in a remote area where Q fever is not known to occur. This was illustrated by an isolated case reported from Boston. In that case, which was proved to be Q fever by demonstrating the development of specific antibodies in the patient's blood, the disease was acquired near Naples, Italy, an area where the Q fever rickettsia had been shown to be the cause of many severe infections in U.S. troops and in natives. The patient became ill while crossing the Atlantic en route home and had a full-blown pneumonia when he arrived in Boston.

**Treatment by Streptomycin.**—The availability of streptomycin had extended the field of usefulness of antibacterial therapy to include certain infections caused by organisms not affected or only slightly influenced by penicillin or sulfonamides.

umonias caused by certain gram-negative bacilli, notably *bsiella pneumoniae* (Carl Friedländer's bacillus) or *Hemous influenzae* (influenza bacillus of Richard Pfeiffer) are ng these infections, and some reports of treatment of such s appeared. The results were not uniformly favourable, ely because of the nature of the infections. In addition, rapid development of extreme degrees of streptomycin reance by the bacteria during treatment sharply limited the ctiveness of streptomycin in the pneumonias, as in many r types of infection. In Friedländer's pneumonia particu/, the early occurrence of areas of destruction of lung tissue abscess formation militated against the rapid and come destruction of the organisms by the antibiotic. Resistant ins soon appear and render further treatment practically ess. Nevertheless, rapid recoveries were reported with strepycin in severe cases of this disease in which the mortality other forms of therapy is high.

**neumonia and Old Age.**—Bacterial pneumonia remained erious and highly fatal disease to people in the older age ups. The case fatality rate in patients with pneumococcal umonia who were more than 50 years old was still between % and 50% in 1947, even after treatment with penicillin or onamides. Results of attempts to prevent the occurrence of e of these pneumonias by immunization with vaccines coning of the specific sugars contained in the capsules of types nd II and later types I, II and III pneumococci were reted.

he study was carried out among aged persons in some New k institutions over a period of 6 years; 5,750 persons were nunized and 5,133 comparable persons served as controls. ring the total period of observation, there were 99 cases of umonia with 40 deaths among the immunized, and 227 cases h 98 deaths caused by pneumonia among the controls. Among immunized persons, the incidence rate was 17.2 per thousand the mortality rate was 6.2 per thousand as compared with incidence of 44 per thousand and a death rate of 19.0 per usand among those not immunized. The case fatality rate similar in the 2 groups: 40% in the patients with pneunia who had been immunized and 43% in those who had pneumonia and had not received the polysaccharide injections. Similar though less striking results in younger persons had been reported previously by other workers. The results suggested that immunization with a polyvalent pneumococcus polysaccharide antigen might prove useful during epidemics of pneumonia, in persons in institutions, in elderly persons and in those who have a tendency to recurring pneumonia.

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**Poetry:** *see* American Literature; Book Publishing; Canadian Literature; English Literature; French Literature; Literary Prizes; Russian Literature; Spanish-American Literature; Spanish Literature.

**Poland.** A republic in northeastern Europe between the U.S.S.R. in the east and Germany in the west, the Baltic in the north and Czechoslovakia in the south. Area: 119,734 sq.mi. (before Sept. 1, 1939: 149,922 sq.mi.); pop. (Feb. 14, 1946, census): 23,911,172 (Sept. 1, 1947, est.: 24,775,000; est. Sept. 1, 1939: 35,339,000). Area of eastern Poland annexed by the U.S.S.R.: 69,469 sq.mi. with a pop. of *c.* 10,772,000, including about 3,900,000 Poles. Area of the "recovered lands" in the west (former territories of Germany and free city of Danzig): 39,120 sq.mi. with a pop. (1939 est.) of 8,300,000, including *c.* 1,067,000 Poles. Chief cities (pop. Jan. 1, 1947, est.): Warsaw (cap., 550,000); Lodz (596,000); Cracow (305,000); Poznan (268,000); Wroclaw (Breslau) (201,000); Gdansk (Danzig) (170,000). Language: Polish (99.6%). Religion: Roman Catholic (99.3%). President: Boleslaw Bierut;

PLACED PERSONS in Poland shown in transit in their unheated boxcars ing the early months of 1947

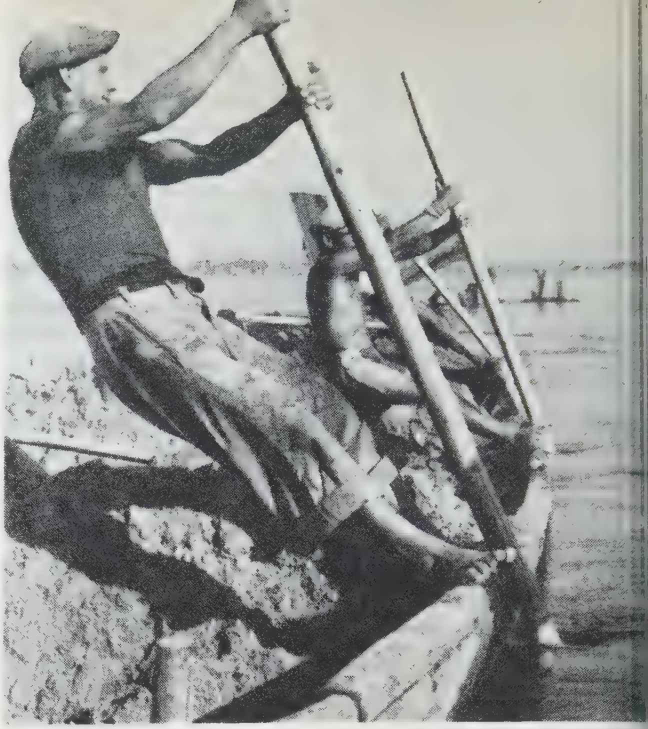
prime minister: Józef Cyrankiewicz.

**History.**—In 1947 communist control in Poland considerably increased and the constitutional opposition practically disappeared. The main political event of the year was the election of Jan. 19; the official figures showed that 11,413,618 voted out of 12,701,056 persons entitled to do so: 9,003,682 (89.8%) voted for the communist-controlled Democratic bloc and 1,154,847 for the Polish Peasant party; the pro-government (so-called Catholic) Work party received 530,979 votes, the dissident Peasant (New Liberation) party 397,751 and other smaller groups the rest. Out of 444 seats in the diet (*Sejm*) the Democratic bloc received 382 seats (118 Communists, 108 communist-controlled Peasants, 118 left-wing Socialists and 38 Democrats), the Polish Peasant party 28, the Work party 17, the New Liberation 13 and the Independents four. That the elections were neither free nor fair was officially stated both in the U.S. and Britain.

The new diet on Feb. 5 elected as president of the republic Boleslaw Bierut, who two days later appointed a new government. Although the premiership was held by a left-wing Socialist, Józef Cyrankiewicz, the Communists controlled all key posts.

On Feb. 19 a provisional constitution was adopted which enabled the government to rule by decree, and provided for only two short sessions of the diet, in spring and autumn, lasting together only three months. The government might not pass decrees affecting certain important matters of state (budget, monetary system, taxation, conscription and ratification of international agreements), and all decrees on other matters were to be submitted to the diet for confirmation. But the constitution created a state council composed of five persons, president of the republic (chairman), the speaker and two deputy speakers of the diet and the president of the state audit chamber, whose powers were great indeed, since it could promulgate as law any measure proposed by the government which the diet refused to pass within three months.

With its decisive majority in the diet and control of the government the Communist party did not show any tolerance toward its political opponents. Shortly before the elections it refused the demand of Zygmunt Zulawski to form an independent Socialist party and it made certain that the so-called Catholic Work party should be subservient by vetoing Karol Popiel as its leader and putting forward in his place a Communist, Feliks Widy-Wirski. It was announced in July that 23 prominent Socialist leaders, critical of Cyrankiewicz's submissiveness to the Communists, were arrested and charged with plotting to overthrow the government and with spying for a foreign intelligence service. In August and September a big trial of 17 leading Poles accused of organizing an underground patriotic body, the W.I.N. (*Wolność i Niepodległość,* or Freedom and Independence), took place in Cracow. Eight of the accused were condemned to death and nine to terms of imprisonment. Among the latter, two well-known leaders of the Polish Peasant party, Stanislaw Mierzwa, its deputy secretary general, and Karol Buczek, editor of the party newspaper in Cracow, were condemned to 10 and 15 years, respectively. The charge of subversive plotting and of espionage was, therefore, brought right to the door of Stanislaw Mikolajczyk, who had tried to carry out the Yalta policy. On Oct. 12 Mikolajczyk was accused of being "an ally of foreign imperialists." It was a danger signal. The leader of the Polish Peasant party and three of his closest political friends decided to escape. Mikolajczyk arrived in London on Nov. 3. Wincenty Bryja, the treasurer of the party, was arrested in Czechoslovakia and handed back to the Polish security police, but two prominent members of the executive committee, Kazimierz Bagiński and Stefan Korboński, managed to join Mikolajczyk in London. On Nov. 25 Mikolajczyk left by plane for the United States.



POLISH bargeworkers on the Vistula are shown dredging the river bott for the fine sand used in reconstruction work on the buildings of Wars during 1947

*Foreign Policy.*—The overriding consideration of the gover ment in all matters of foreign policy was to side with t U.S.S.R. The soviet decision to make the Marshall plan ineffe tive caused the Polish government to start a campaign agai the west in general and "American imperialism" in particul As a result, it was announced in Washington on July 23 th there would be no U.S. post-U.N.R.R.A. credits for Poland a that an already agreed loan of $40,000,000 by the U.S. Expo Import bank was cancelled. The ravaged economy of Pola could, however, profit during 1947 from a credit, granted June 1946, of $50,000,000 for the purchase of U.S. surpl property abroad.

The most vital issue in Polish foreign policy was that of i western frontier. George C. Marshall, U.S. secretary of stat asked on April 9 at the Moscow conference for a final delimit tion of this frontier. He did not question the incorporation Danzig, of the southwestern part of east Prussia and of t former German Upper Silesia with Poland, but proposed t division between Poland and Germany of the remaining ar east of the Oder-Neisse line. Vyacheslav Molotov, in the nam of the soviet government, opposed the U.S. suggestion, pointi out that the Potsdam conference of the Big Three did n restrict itself to establishing the new frontier between Pola and Germany, but also adopted a decision on the immedia transfer of all Germans from Polish territories east of the Ode Neisse line. Accordingly, by April 1947, this transfer of t Germans was practically ended and in their place nearly 5,00 000 Poles were already settled on the former German lan Molotov stated that the Potsdam decision was formally pr visional so long as no peace treaty with Germany was signe essentially, however, it was final and not subject to revisio

There was practically no difference of opinion among Poles Poland or abroad on this issue. The Polish press stated th out of about 8,500,000 Germans who were living before Wor War II on the Polish territory as existing in 1945, only abo 2,100,000 remained there by Feb. 1, 1946. From that date Sept. 1, 1947, 2,002,827 Germans were repatriated. At the sa time 1,486,351 Poles from the former Polish eastern provin and 1,368,544 coming from Germany and other countries western Europe returned to Poland mainly to the "recover ls." Finally, an important migratory movement took place n 1945 onward from the overpopulated central Polish prov- s toward the west. In this situation the cession was bound e regarded as final at least by the Poles.

he British-Polish agreement for settlement of outstanding ncial questions, signed on June 24, 1946, was ratified on e 19, 1947. In order to meet the debts for civilian expendi- by the former Polish government-in-exile, amounting to ,000,000, the Warsaw government undertook to hand over to tain £3,000,000 of the £7,000,000 Polish gold reserves de- ited with the Bank of England, and to pay £10,000,000 in ling in 15 annual instalments, the first payment to be made 952. The debt of £47,500,000 expenditure on the pay of the ish armed forces in the west was left in abeyance, and Britain to make no claims for repayment of £73,000,000 spent on armament and equipment of the Polish forces. Finally, sur- s British military stocks of £6,000,000 were to be made ilable to Poland.

A 20-year treaty of friendship and mutual assistance between and and Czechoslovakia was signed in Warsaw, completing network of bilateral pacts uniting the four Slav republics eastern Europe between themselves and each of them with U.S.S.R.

*oles Abroad.*—By May 1947 there were in Great Britain out 123,000 Polish soldiers of the former Polish armed forces o had fought with the Allies in the west. Of these about 000 enrolled in the Polish Resettlement corps, the adminis- tor of which was Lt. Gen. G. I. Thomas, appointed by the tish government under the Polish Resettlement act of March 1947. It was estimated that by Oct. 1947 of those outside corps 30,000 were repatriated to Poland; 6,000, who had so refused either to join the corps or agree to be repatriated, re contained in "recalcitrant" camps; 8,000 emigrated to ance, Canada, Argentina and other countries. These figures not include the Poles described as displaced persons in Ger- ny and Austria. It was announced on Jan. 1, 1947, that there re still 388,861 Polish citizens (many of them Ukrainians or ws) refusing to return to Poland. Of the Poles remaining in eat Britain, by Dec. 1947 about 55,000 had found employ- ent there.

**Education.**—For the school year 1946–47: primary schools 20,132, teach- 80,440, pupils 3,260,000; secondary schools 758, teachers 9,914, pupils 5,200; vocational schools and courses 1,992, teachers 12,154, pupils 4,505; universities and other establishments of higher education 34, ofessors and teachers 7,094, students 80,841.

**Banking and Finance.**—Budget (est. for 1947): revenue Zl.185,512,- 0,000, expenditure Zl.174,400,509,900. National debt (pre-1939 in- otedness excluded): Zl.29,380,000,000. Bank notes circulation: (Aug. , 1946) Zl.44,217,900,000 (Aug. 31, 1947) Zl.73,086,000,000. Ex- ange rate (official): 1 zloty = 1 U.S. cent; in Nov. 1947, however, was officially announced that the National Bank of Poland was paying 400 for every dollar for certain kinds of transfers from abroad.

**Trade and Communication.**—Foreign trade (official figures for 1946 blished in Warsaw in dollars): imports $139,628,000 (70.4% from U.S.S.R.); exports $132,834,000 (49.4% to the U.S.S.R.). The value Polish foreign trade in 1946 was nearly half the prewar level, but, be- use of the rise in prices, its volume was considerably lower. Merchant pping: clearance of vessels in external trade (monthly averages for ańsk and Gdynia): (1938) 938, (Jan.–Aug. 1947) 332. Railways: ssenger journeys (monthly average in million persons): (1938) 18.8, an.–Aug. 1947) 26.2; freight traffic (monthly average in million short miles): (1938) 1,279, (Jan.–Aug. 1947) 1,428. Civil aviation (Jan.– ne 1947): number of flights 2,416; miles flown 465,874; passengers nsported 26,334; freight carried 258.5 short tons.

**Mineral Production and Manufacturing.**—(In short tons) coal: (1946) 016,800, (Jan.–July 1947) 35,447,500; monthly average (1938) 3,493,- 0, (Jan.–July 1947) 5,065,500. Iron ore: (1946) 466,095, (Jan.–July 47) 308,997; monthly average (1938) 80,300, (Jan.–July 1947) 44,- 3. Zinc and lead ores: (1946) 650,547, (Jan.–July 1947) 495,813; nthly average (1938) 46,200, (Jan.–July 1947) 70,830. Pig iron: 946) 798,310, (Jan.–July 1947) 504,266; monthly average (1938) 400, (Jan.–July 1947) 72,038. Raw steel: (1946) 1,341,371, (Jan.– y 1947) 945,908; monthly average (1938) 132,000, (Jan.–July 1947) 5,129. Crude petroleum: (1946) 128,416, (Jan.–July 1947) 79,903; nthly average (1938) 46,530, (Jan.–July 1947) 11,415. Artificial tilizers: (1946) 382,051, (Jan.–July 1947) 247,755; monthly average 938) 93,436, (Jan.–July 1947) 35,394. Index numbers of industrial duction (1938 = 100): (Jan.–July 1947) 112. Index numbers of em- yment, excluding agriculture (1938 = 100): (Jan.–July 1947) 118.

**Food and Agriculture.**—In short tons 1946: wheat 680,449, rye 3,039,135, barley 741,092, oats 1,118,711, potatoes 20,580,472, sugar beets 3,381,608. Livestock (June 30, 1946); horses 1,729,500, cattle 3,910,500, pigs 2,674,000, sheep 727,100, goats 547,000. By July 1947 it was estimated in Warsaw that about 9,000,000 town dwellers would be compelled to live on 1,800 calories a day (500 calories below normal). U.N.R.R.A. shipments to Poland (from July 1, 1945, to June 30, 1947): $481,260,000 ($20.1 per head of population). Cost-of-living index numbers of a working-class family in Warsaw (1938 = 100): (June 1945) 5,358, (June 1947) 9,450.

(K. Sm.)

**Pole Vaulting:** *see* Track and Field Sports.

## Police.

Although more than two years had elapsed since hostilities ceased in Europe, Africa, Asia and on the seven seas, the closing days of 1947 still found police protection in most parts of the world operating under the influence of World War II. Inside the ring of communist states and their satellites, secret police still held sway. In Japan, Germany and Austria the dual operations of civil and military police served to emphasize divided objectives of domestic tranquillity for the peoples of defeated countries and military security for the occupation forces. In France and Italy the year was marked by political and industrial rioting and political upheavals that shook those democratic states to their foundations and put their police and military forces to severe tests of competence. On the other hand, the police of the United States, which had handled almost 5,000 industrial disputes in 1946, were somewhat relieved of their burden when the number fell by 28% in 1947. Moreover the strikes were of lesser magnitude. Thus, police in the United States were returning to something like normal conditions affecting public order. In the matter of police manpower, which had declined slightly from 1942 to 1945, there was quick recovery in 1946 to levels that topped those of record-high 1942; and a new upthrust in 1947 brought various population groups of cities to still higher ratios of police to population.

**Table I.**—*Numerical Strength of U.S. Municipal Police Forces, 1941–47*

(Number per 1,000 inhabitants)

| Population groups of cities | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | 1947 |
|---|---|---|---|---|---|---|---|
| Group I—Over 250,000 . . . . . . | 2.12 | 2.13 | 2.07 | 2.02 | 1.94 | 2.14 | 2.23 |
| Group II—100,000 to 250,000 . . . | 1.45 | 1.50 | 1.47 | 1.45 | 1.42 | 1.56 | 1.61 |
| Group III—50,000 to 100,000 . . . | 1.37 | 1.46 | 1.40 | 1.36 | 1.35 | 1.52 | 1.59 |
| Group IV—25,000 to 50,000 . . . . | 1.23 | 1.29 | 1.24 | 1.21 | 1.22 | 1.36 | 1.43 |

In England and Wales the return to prewar police strength was much slower in arriving. In fact, the shortage in regular police personnel was still more than 10% in 1947. A part of this was due to natural attrition during the war years and to continuance of many police in military service overseas. Part of it, also, was traceable to lagging police pay-scales in the face of rising costs. Steps were taken to secure the release of police still in military service, and police recruiting missions were dispatched by the home office to encourage new police enlistments in the military theatres of the middle east, far east and India. Meanwhile compensation scales and allowances were increased, but still the strength quotas lagged behind authorized levels.

In the United States active recruiting for replacements and enlargements apparently was more productive in attracting recruits of satisfactory quality, partly no doubt as a result of substantial increases in compensation for many federal, state and city forces. This was reflected in a rise of municipal police expenditures for salaries by about 20% over 1943 levels. Highest salaries for patrolmen in U.S. cities were close to $4,000 per annum, though the average for large cities was still only slightly in excess of $3,000, and for small places around $2,400.

The percentage of U.S. crimes cleared by arrest continued to be slightly lower than the levels attained in the years immediately preceding World War II. The crime problem itself was somewhat less than in prewar years, though substantially higher than the midwar trough. Traffic accidents likewise had risen

Table II.—*Per Cent of Crimes Cleared by Arrest in U.S. Cities, 1941–1946*

| Uniform Crime Classification | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|
| Murder and nonnegligent manslaughter | 88.1 | 90.6 | 90.5 | 90.8 | 86.9 | 88.5 |
| Negligent manslaughter | 86.6 | 86.1 | 84.0 | 81.5 | 82.7 | 81.8 |
| Rape | 76.2 | 81.2 | 74.0 | 74.8 | 74.1 | 74.1 |
| Robbery | 40.4 | 43.3 | 38.1 | 38.7 | 36.2 | 37.1 |
| Aggravated assault | 75.0 | 80.5 | 73.7 | 75.7 | 76.2 | 78.7 |
| Burglary; breaking or entering | 32.0 | 31.5 | 30.7 | 31.6 | 31.3 | 29.1 |
| Larceny (except auto theft) | 22.7 | 25.0 | 24.1 | 23.6 | 22.8 | 22.0 |
| Auto theft | 24.4 | 24.6 | 26.5 | 24.4 | 26.4 | 28.8 |

from the low points recorded during the war, though still below the high point reached in 1941. While improvements had been made in many respects, 1947 brought no new factors into the police training situation. The Federal Bureau of Investigation (FBI) through its national academy still trained each year some highly selected and experienced men from state and municipal forces. Some of the latter were themselves leaders in their police training programs and the widespread net of zone schools sponsored by the FBI and state and local authorities brought brief instruction to the members of many smaller police forces. But there were as yet no means by which thorough police preparation and supplementary training could be made available to all members of some thousands of small local forces.

On this score the police outlook in England and Wales was far more favourable. Comprehensive coverage for all police forces was effected through 9 district schools for basic police training covering 13 weeks of resident instruction. A management committee of chief constables in each district operated under the general supervision of a central advisory committee on recruitment and training representing the local authorities.

Moreover, under the terms of the Police act of 1946, it was provided that after April 1, 1947, only two noncounty boroughs (Cambridge and Peterborough) might maintain police forces of their own. Forty-five local police forces, most of them quite small, thereby were absorbed into existing county constabularies.

One of the questions absorbing much official attention in the United States was the matter of police unions. With few exceptions, professional police administrators vigorously opposed the introduction of such media into their respective forces, and police regulations often expressly prohibit membership in them. While the process of unionization was slow, it was not everywhere halted by official opposition. In 77 cities of more than 100,000 population, police unions were in 1947 established in only 10.

The year 1947 was notable not only for the number of decisions in state courts upholding police regulations that prohibit police unions, but the supreme court of the United States on two occasions declined to hear appeals by police officers who had been dismissed from police employment for violating such regulations.

Most important conference was that of the International Association of Chiefs of Police, which held its 54th annual meeting in Duluth, Minn., Sept. 21–25. Though consisting chiefly of U.S. and Canadian representatives, delegates were present from Costa Rica, Mexico and Sweden. Subjects discussed included a proposal that the association set up regional organizations in various parts of the world, thereby facilitating the active participation of its members in many lands. Public relations of police, police communications and radio allocation problems, professional standards, interforce co-operation, police training, model police buildings, traffic safety, control of commercialized vice, and mass picketing and strikes as a police problem also received extended consideration.

The state and provincial forces of the United States and Canada also held special sessions in conjunction with the meeting at Duluth. The subject matters discussed were in many respects related to the topics covered by the general meeting, though with special reference to both urban and rural police problems.

(*See* also CRIME; FEDERAL BUREAU OF INVESTIGATION; K NAPPING; SECRET SERVICE, U.S.).

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**Poliomyelitis:** *see* INFANTILE PARALYSIS.

**Political Parties:** *see* COMMUNISM; DEMOCRATIC PAR ELECTIONS; POLITICAL PARTIES, BRITISH; REPUBLICAN PAR SOCIALISM.

## Political Parties, British.

**Labour Party.**—The cl cut program with which Labour party started the year 1947 left little scope for in vation. In home politics the government was committed to nationalization of electricity and transport before the sec session of parliament was over. By the use of the "guilloti and the imposition of a strenuous parliamentary timetable, volving the continued prohibition of private members' bills showed itself determined to remove all obstacles to the ra discharge of its electoral promises. Its immense majority a continued success at by-elections seemed during the first h of the year to put this program beyond the scope of effect opposition, and its main tactical preoccupation was the activ of a body of dissidents in its own ranks.

In May a large body of Socialists voted against the gove ment's National Service bill imposing peacetime conscripti and in deference to this criticism the period of service was duced from 18 months to a year. This rebuff was administe by a combination of highly incongruous elements, compris Welsh Nationalists, conscientious objectors, the representati (always numerous in the ranks of Labour) of traditional Brit radicalism, with its inherited aversion to large armies, an handful of intellectuals who took the occasion to attack Ern Bevin's foreign policy. This last group had already achie some coherence under the banner "Keep Left" and had pu lished a pamphlet condemning the government's dependence the United States, urging it to create a western European bl to preserve strict neutrality between the U.S.S.R. and United States, and to conclude discriminatory trade agreeme with soft currency countries. The official Labour reply to t criticisms of Bevin's policy, contained in a pamphlet publish by Labour party headquarters on May 22 called *Cards on Table,* firmly placed the blame for Anglo-soviet misunderstan ings on Russia's policy of pursuing "the elimination of Brit as a European and middle eastern power," denied the charge dependence on the U.S. and said that if more coal could be p duced the country would be still more independent. At t annual conference of the Labour party at Margate the issue w joined between the government and its critics, and Bevin cured an overwhelming majority. "Keep Left's" demand more stringent action against restrictive practices won little su port from the trade unions, and the conference made it cle that organized Labour insisted on collective bargaining as t proper means of determining wages. At the Trade Union co gress at Southport in September the scene was re-enacted, w the difference that the government's new crisis and Bevi favourable observations on economic co-operation with the co monwealth and western Europe had already anticipated some the main criticisms of the left. The real test of left-wing opp sition came when the government postponed the Iron and St bill for a year, and the dissidents accepted with little protes series of social reforms and a promise to deprive the house lords of half its delaying power as an adequate program 1948. The crisis had brought about a closing in the ranks of t

our party, which ended the year far more united than it
begun it.

**Conservative Party.**—Much of the Conservative party's
rgy during the first half of the year was absorbed in admin-
ative reorganization and a vigorous campaign for recruit-
t. The special attention given to local government was
dsomely rewarded in November by a net gain of 625 seats.
hin the party there was a broad division of opinion between
advocates of *laissez-faire* economics, on which the general
tion had been fought, and those who, reverting to an earlier
y tradition, asserted the need for a measure of central con-
over national economic life. Within both groups there were
umerable shades of emphasis.

s the year advanced Conservatives became increasingly
ptical of the wisdom of an indiscriminate attack on economic
trols. After the coal crisis the burden of most opposition
icism was not that the government had planned too much
that it had foreseen too little. In October the party con-
ence at Brighton supported, with only three dissidents in a
eting estimated to be about 3,000 strong, the Industrial
rter, elaborated by a committee under the chairmanship of
A. Butler and published in May; this statement of policy
ame the accepted basis of party activity. It accused the
ernment of lacking policy at the centre and imposing too
ch control at the circumference. It urged the appointment
a minister of economic affairs to be charged with strategic
nning, and to be assisted in determining the outlines and
ectives of economic policy by a committee of employers and
de-unionists. The detailed application of these plans would
left to industry (*e.g.*, the government would determine the
ioning of raw materials among industries, but would leave
ir distribution in each industry to be settled in consultation
ong members of that industry). The party would not de-
ionalize the Bank of England or the mines but would intro-
ce into all nationalized industries new methods of manage-
nt and administration. These methods, which would gradu-
y be extended to private industry, would assure the worker
tain fundamental rights, reasonable remuneration, oppor-
ity for promotion, protection against unjust dismissal, par-
ipation in the running of industry and a share in profits. At
same time the conference passed by a large majority a
tion reaffirming the party's imperial tradition and protesting
ainst proposed reductions in imperial preference. In spite of
persistence of some individual eccentricities of approach
ese broad principles of policy commanded general assent in
party and provided a coherent basis for attacks on the gov-
ment.

**Liberal Party.**—In spite of its electoral defeat and many
appointments at by-elections, the Liberal party refused asso-
tion with the Tories and continued to expand its activities.
statement of party policy in April reaffirmed its faith in pro-
rtional representation, the reform of the house of lords and
e trade, declared the party to be inexorably opposed to na-
nalization and to favour economic planning by means of fiscal
licy and supported joint control in industry. In some respects
party's program was indistinguishable from that of the
ries, but historical animosities apart, free trade could not be
conciled with imperial preference, and many Liberals also dis-
rned in plans for industrial self-government, when advanced
the Tories, the germs of industrial fascism, a system under
ich workers would be induced to surrender the contractual
sis of their employment in return for subjection to the au-
ority of their employers. The Liberal party in practice as-
med the function of an independent critic of government on
ints where the special principles of liberalism were involved.

**Communist Party.**—The Communist party suffered heavy losses at the local government elections in November. It attacked Bevin's foreign policy as anti-Russian and Sir Stafford Cripps's economic policy as wanting vigour. The fact that the party was not invited to join the Cominform was variously interpreted as a tribute to the strength of socialism and a rebuke to the Communists for insufficient zeal in the execution of their program.

**Fascist Movement.**—A political phenomenon, attracting much attention, some hostility and a little anxiety, appeared in East London. The British League of Ex-Servicemen bore marked resemblances to Sir Oswald Mosley's prewar British Union of Fascists and strongly attacked the Jews. Its proceedings were closely watched by the police, but the government refused to introduce coercive legislation against them. (T. E. U.)

**Polo.** For the second successive year a Mexican team visited the United States. Although they won their way to the final round of the National Open championship, which they had won in 1946, they were defeated in that match by the Old Westbury team of Pedro Silvero, Clarence Combs, Jr., Stewart B. Iglehart and George Oliver. In the Monty Waterbury Memorial cup matches which followed the Open, the Hurricanes were victorious. A special East-West match was also held at the Meadow Brook club, Westbury, Long Island, with the West winning.

Because of the continued shortage of players it was not held feasible by the United States Polo association, governing body of the game, to renew any but the top polo championships. A step toward remedying this shortage in ensuing years was taken when the Polo association inaugurated a school for youngsters at the Blind Brook Turf and Polo club at Port Chester, N.Y. A group of selected boys from all over the country took the six-weeks' course with Stewart B. Iglehart, Cecil Smith and Michael Phipps, the three top rated 10-goal men in the country, and others doing the instructing. Robert E. Strawbridge, Jr., was re-elected chairman of the association with George C. Sherman secretary-treasurer and Devereux Milburn, Jr., vice-chairman.

Indoor polo was played throughout the winter and spring of 1946–47, with championships held at the Squadron A armoury in New York. Indoor polo outdoors was successfully inaugurated at the Orange Bowl in Miami during the Florida season. The beginning of the 1947–48 season saw Chicago re-enter the game for the first time after the beginning of World War II. (R. F. K.)

**Popcorn.** The U.S. popcorn crop of 1947 was poor, only 96,395,000 lb. compared with the 1936–45 average of 151,152,000 lb. and the 253,092,000 lb. harvested in 1946. The small crop was the result of a sharp reduction in acreage and yield caused by wet weather in the spring and early frost in the fall. Acreage was 80,700, compared with 154,600 in 1946 and a 10-year average of 109,994. The average yield was 1,194 lb. per acre compared with 1,637 lb. in 1946. California was the only state that exceeded its 1946 production. In 1947 Ohio had only one-third of a normal crop, Indiana three-fifths and Oklahoma one-half. Improved hybrid varieties were being grown to a large extent. About three-fourths of the Illinois crop of 1947 was of the Yellow Pearl variety.

Popcorn prices ranged around $4.00 per bushel to growers in 1947 compared with $3.50 in 1946, $3.77 in 1944 and an average of $2.25 during 1935–43. The retail price generally rose from 5 cents to 10 cents per bag. (J. C. Ms.)

**Popular Music:** *see* MUSIC.
**Population, Movements of:** *see* REFUGEES.
**Populations of the Countries of the World:** *see* AREAS AND POPULATIONS OF THE COUNTRIES OF THE WORLD.

**Porto Rico:** *see* Puerto Rico.

**Portugal.** A republic of western Europe, forming part of the Iberian peninsula and bounded on the north and east by Spain and on the south and west by the Atlantic ocean. Area (including Azores and Madeira): 35,413 sq.mi.; pop. (est. 1946) 8,223,000. Chief towns: Lisbon (cap., 709,179); Oporto (262,309); Coimbra (35,437). Language: Portuguese; religion: predominantly Roman Catholic. President: General Antonio Oscar de Fragoso Carmona; premier: Dr. Antonio de Oliveira Salazar.

**History.**—At the end of January, sentences were finally passed on the army officers implicated in the revolt of Oct. 1946. In April a new revolt failed: it began with a dock and shipyard strike and the sabotaging of 20 army planes at Sintra airfield; a plot to organize garrison revolts against the regime at Tomar, Tancos and Entroncamento was discovered. For two days a state of alarm was proclaimed.

Four senior officers, two of them Monarchists, were sent to Funchal and the Cape Verde Islands, ostensibly on special missions, and numerous arrests were made.

Celebrations of the 800th anniversary of the capture of Lisbon from the Moors by Afonso Henriques began in May and lasted throughout the summer.

In May, the 20th anniversary of the revolution which brought in the existing regime was celebrated by a military parade in Lisbon.

The first half of the year showed an adverse trade balance of more than £12,000,000, following an excess of imports over exports of £22,000,000 during 1946. Both the wine and the olive harvests of 1947, however, were exceptionally good.

Air development continued, and a new air agreement with Canada, providing a return service from each country, was concluded in May. (E. A. P.

**Education.**—(1945) Primary schools 10,079, scholars 528,109; ondary schools 43, scholars 17,281; universities 3, students 7,813.

**Banking and Finance.**—Revenue (est. 1946) ordinary 3,018,000, escudos; extraordinary 1,363,000,000 escudos; expenditure (est. 19 ordinary 3,017,000,000 escudos; extraordinary 1,363,000,000 escu public debt (Dec. 1944) domestic and foreign 9,389,000,000 escu notes in circulation (1947) 8,199,000,000 escudos; commercial b deposits (1947) 9,000,000,000 escudos; savings bank deposits (19 8,403,000,000 escudos; gold reserve (June 1946) 6,057,000,000 escu Exchange rate (1946) 1 escudo = 4.03 U.S. cents; (1947) 1 escud 4.028 U.S. cents.

**Trade and Communication.**—External trade (1946): imports 6,8 000,000 escudos; exports 4,584,000,000 escudos. Communications transport (1945): roads, first and second class, 9,180 mi.; railways o to traffic 2,191 mi.; passengers carried (1946) 49,200,000; goods car 5,646,600 short tons; vehicles licensed (1944): cars 47,469, motorcy 4,604, cycles 141,872; shipping: (Jan. 1, 1943) 313,534 gross tons.

**Agricultural and Other Production.**—Production (1946) in short to coal 409,900; lead 1,520; tin (exports) 385; cement 392,640; bu 1,520; cheese 1,150; meat 50,400; wheat 435,600; maize (19 243,012; rye (1945) 132,944; oats (1945) 81,344; barley (19 73,224; potatoes (1945) 692,000; wet fish (1945) 4,537. (*See* a Portuguese Colonial Empire.)

**Portuguese Colonial Empire.** Total area (approx 803,835 sq.mi.; to population (1940 census): 10,879,000 excluding metropolit Portugal, the Azores and Madeira. Certain essential facts a figures relating to the colonial possessions of Portugal are giv in the accompanying table.

**History.**—The appointment of Capt. Teófilo Duarte as co nial minister was followed in March 1947 by the announceme of the granting to Mozambique of a loan of 600,000,000 escud (£6,000,000) for industrial developments. Previously, a simil loan of 250,000,000 escudos had been granted to Angola.

At the beginning of the year Portuguese India was granted statute giving it the status of a metropolitan province.

The 17th century Portuguese Jesuit missionary to India, Jo de Brito, was canonized in June; the ceremony was made t occasion for an empire pilgrimage. (E. A. P.)

*Portuguese Colonial Empire*

| Country and Area (in sq.mi.) | Population Census, 1940 (000's omitted) | Capital, Status, Governor | Principal Products Exports—1945 (in short tons) | Imports and Exports (in thousand escudos) | Road, Rail (1943) and Shipping | Revenue and Expenditure est. 1 (in thousand escud |
|---|---|---|---|---|---|---|
| AFRICA | | | | | | |
| Angola (Portuguese West Africa) 481,351 | 3,738 | Luanda, colony, *governor-general:* Commander Vasco Lopes Alves | maize 116,676<br>cane sugar 40,796 | (1945)<br>imp. 587,750<br>exp. 645,525<br>(1946, 6 months)<br>imp. 320,750<br>exp. 441,110 | rds. 21,949 mi.<br>rly. 1,477 mi.<br>shpg. (entered)<br>(1946, first 6 months)<br>301,270 tons<br>(cleared)<br>315,265 tons | rev. 368,252<br>exp. 368,252 |
| Cape Verde Is. 1,557 | 181 | Praia, colony, *governor:* Commander João de Figueiredo | salt 6,907<br>preserved fish 640<br>coffee 160 | (1945)<br>imp. 165,750<br>exp. 151,100<br>(1946, 7 months)<br>imp. 182,257<br>exp. 151,182 | rds. 326 mi.<br>shpg. (entered)<br>(1946, first 6 months)<br>1,573,797 tons<br>(cleared)<br>1,574,758 tons | rev. 22,778<br>exp. 22,778 |
| Portuguese Guinea 13,948 | 351 | Bolama, colony, *governor:* Commander Manuel Maria Sarmento Rodrigues | groundnuts 40,105<br>palm kernel oil 560 | (1945)<br>imp. 82,275<br>exp. 94,775<br>(1946, 9 months)<br>imp. 65,625<br>exp. 70,548 | rds. 1,649 mi.<br>shpg. (entered)<br>(1946, first 10 months)<br>41,271 tons<br>(cleared)<br>43,228 tons | rev. 44,616<br>exp. 44,616 |
| São Tomé and Principe Is. 372 | 60 | São Tomé, colony, *governor:* Capt. Carlos de Sousa Gorgulho | cacao 7,039<br>coffee 415 | (1945)<br>imp. 27,775<br>exp. 52,600<br>(1946, 8 months)<br>imp. 34,095<br>exp. 73,346 | rds. 199 mi. | rev. 11,831<br>exp. 11,831 |
| Mozambique (Portuguese East Africa) 297,731 | 5,086 | Lourenço Marques, colony, *governor-general:* (vacant) | cane sugar 502,203<br>copra 44,415<br>wood 82,354 | (1945)<br>imp. 768,900<br>exp. 521,875 | rds. 16,667 mi.<br>rly. 1,349 mi.<br>shpg. (entered)<br>4,521,425 tons | rev. 636,398 (actual)<br>exp. 636,398 (actual) |
| ASIA | | | | | | |
| Portuguese India 1,538 | 624 | Nova Gôa, colony, *governor-general:* Dr. José Bossa | fish, spices, coconuts and copra | (1940)<br>imp. 102,025<br>exp. 16,900 | (1940)<br>rds. 411 mi.<br>rly. 50 mi.<br>shpg. (entered)<br>698,414 tons | rev. 47,013<br>exp. 47,013 |
| Macao 6.2 | 375 | Macao, colony, *governor:* Commander Gabriel Mauricio Teixeira | fish, preserves and cement | — | rds. 12 mi. | rev. 64,121<br>exp. 64,121 |
| Timor 7,332 | (est. 1936) 464 | Dilli, colony, *governor:* Capt. Oscar Ruas | coffee, sandalwood, wax and copra | (1940)<br>imp. 3,625<br>exp. 4,150 | (1939)<br>rds. 1,039 mi.<br>shpg. (entered)<br>91,215 tons | rev. 9,430<br>exp. 9,430 |

**rtuguese Possessions in Africa:** *see* PORTUGUESE CO-
IAL EMPIRE.

**st Office.** The audited revenues of the post office department for the fiscal year 1947, as stated he records of the comptroller general of the United States, ounted to $1,299,141,041.43.

here was also reported to the treasury department the items ed in the act of June 9, 1930, indicating the estimated post- that would have been collected if the services had been on egular pay basis, in the case of penalty and franked mail, e-in-county mail, differentials in second-class mail matter and e matter for the blind. These amounted to $92,198,225.

The expenses of the department for the fiscal year as audited ounted to $1,504,798,756.42, of which amount $45,613,793.94 s on account of prior years. There was $103,329,796 unpaid account of the 1947 fiscal year. This left a total expense for fiscal year 1947 of $1,562,514,758, resulting in a gross erating deficit on an accrual basis of $103,329,796. This ount does not include pending retroactive payments to rail- ds and air mail service in Alaska.

The tremendous increase in the volume of mail handled by post office department for other branches of the government d been a matter of concern to congress and the department a number of years. Thousands of tons of forms, pamphlets, culars and supplies were sent by government departments d establishments free of postage under the "penalty privi- e." In order to control and limit the use of the penalty mail vilege, congress passed the "penalty mail law," effective July 1944, which provided that departments and agencies (except war, navy and post office departments) account for all mat- bearing the penalty indicia and pay into the treasury as scellaneous receipts, and not as postal revenue, the cost of ndling such matter. The records disclosed that during the cal year ended June 30, 1947, there were mailed 1,602,267,019 e pieces, weighing 223,122,507 lb., a decrease of 92,727,730 ces and a decrease of 28,817,667 lb. from the 1946 fiscal year.

On June 30, 1947, war savings stamps were on sale at 41,759 ices. Sales from July 1, 1946, to June 30, 1947, amounted to 4,700,908.05.

During the fiscal year ended June 30, 1947, 7,189,836 U.S. vings bonds, having a sale value of $426,714,375 were sold. At e close of 1947, bonds were on sale at 26,774 post offices, in- uding 1,373 branches and stations, a net decrease of 153 over e preceding year. Through the 41,759 post offices and 3,383 ations being conducted under contract agreement as well as 967 stations and branches, there were received, transported d delivered 37,500,000,000 pieces of mail matter during the cal year, having a weight of 4,500,000 tons, representing an in- ease from the previous fiscal year of 1,300,000,000 pieces of ail and 1,000,000 tons.

On June 30, 1947, there were 3,383 stations being conducted der contract agreement. The average cost per contract unit s $798, and the total cost of operation during the fiscal year nounted to $2,699,032, whereas the receipts from the sale of mps at these contract stations amounted to $36,381,031 dur- g the calendar year 1946.

During the fiscal year, city delivery service was established 984 additional cities, thereby increasing to 5,067 the number cities in which this service was operated. Of this number two ere changed from village delivery to city delivery service. llage delivery was in operation at 109 post offices.

**Postmasters.**—During the fiscal year there were 440 presi- ntial appointments of postmasters at offices with salaries $1,800 to $12,400 per annum. Fourth-class postmasters were mmissioned to 2,103 offices during the year as vacancies occurred through various causes.

CREW MEMBERS of a U.S. naval air transport service plane transferring mail and priority cargo to a dog sled for more localized delivery in Alaska during 1947

**Dead Letters.**—During 1947, it was impossible to deliver 18,184,742 letters, a decrease of 2.63% from the previous year. A total of 4,353,906 were returned to the senders, of which 363,180 were found to contain valuable enclosures; 81,443 of them contained money, amounting to $223,445.91. There were also 695,110 unclaimed parcels and articles found loose in the mails. These parcels were sold at public auction and $183,061.51 realized.

**Air Mail.**—On June 30, 1947, there were 102,454 mi. of domestic air mail routes, an increase of 45,077 over June 30, 1946. During 1947 six new domestic air mail routes were established. On October 1, 1946, the domestic air mail rate was reduced to five cents an ounce. This includes not only the United States and its territories and possessions, but wherever the United States postal service is in operation. The new rate also applies to Canada and Mexico.

"Air Letter" service was inaugurated to all foreign countries on April 29, 1947. Designed for the purpose of world-wide mailing for ten cents, the air letter sheet is the postwar sequel to the V-mail. Unlike V-mail, however, air letter sheets are not photographed but are designed to average a minimum of 150 to the pound. No inclosures are permitted in the air letter. Messages are written in the inner side of the sheets, which can be folded into the form of an envelope on which is printed a postage stamp and bears regular air mail markings. Air letter sheets manufactured by private concerns under permit will be accepted for mailing after ten cents in postage has been affixed. The air letter marks another step toward closer linking of communication with the rest of the world.

The first helicopter air mail service was inaugurated by the post office department in the Los Angeles, Calif., area on Oct. 1, 1947. This route gave direct air mail service between the Los Angeles airport and nine outlying communities to the north. Many other towns were served indirectly through these offices. On the same day, a shuttle service began operation between the airport and the terminal annex post office in downtown Los

Angeles. Two other helicopter air mail routes were serving cities to the east of Los Angeles. Savings in transit time of from 4½ to 19 hr. was possible in the Los Angeles area through the operation of the helicopter service. More than 2,000,000 people would benefit from this new air mail service.

In the foreign field air mail rates were reduced Nov. 1, 1946, from a previous high of 70 cents a half ounce to a maximum of 25 cents. To South America the new rate was 10 cents per half ounce; to Europe and North Africa, 15 cents per half ounce; the rest of Africa, near east, Asia and South Pacific, 25 cents per half ounce.

The air mail service performed a total of 68,000,000,000 pound miles of service during the fiscal year 1947.

**Rural Delivery.**—The rural delivery routes in operation on June 30, 1947, required a total daily travel of 1,449,767 by rural carriers in providing service to approximately 29,810,927 patrons. The policy of consolidating rural routes to absorb vacancies was continued. Operation of the rural delivery service resulted in an expenditure of $129,481,821 for the fiscal year as compared with $117,335,322 for the previous year, an increase of $12,146,499. The amounts saved through consolidation of routes were utilized to establish new routes and provide extension of existing routes. Thereby 8,229 more miles were covered by rural carriers at the close of the fiscal year 1947 than in 1946.

**Postal Savings.**—The postal savings system continued to merit a widespread public demand for its services: the depositors numbered 4,196,517 for 1947, an increase of 1.47% above the preceding year. The balance due depositors by outstanding certificates of deposits was $3,392,621,491, an increase of $273,100,681 or 8.75%. In addition there was held in trust for depositors accrued interest of $100,974,847.07 and unclaimed deposits of $151,970, making a total of $3,493,748,308.07.

At the end of the year, postal savings certificates were on sale at 7,225 depositories, including 916 branches and stations, but savings stamps were on sale at all post offices and practically all branches and stations.

**Buildings.**—During the fiscal year ended June 30, 1947, the post office department operated 3,262 government-owned buildings. No new buildings were completed during the fiscal year. Through reassignments of space within these buildings, agencies of the government which were occupying or had intended to occupy commercial quarters were accommodated, with a saving of $405,202.

Expiring leases numbering 617 were renewed in the year 1947. The square foot cost of renewing leases was increased from 92.8 cents in 1946 to 96.4 in 1947. There were 153 new leases made, including 101 for offices previously occupying space on a monthly rental basis, the new contracts providing improved quarters and in many instances complete new equipment. (I. GG.)

**Canada.**—For the fiscal period 1946–47 gross postal revenue exceeded $86,400,000, the highest figure in post office history. In the same period the post office issued $321,728,000 of money orders payable in Canada and $7,829,000 payable abroad. Air mail postage was reduced, through the establishment of the quarter-ounce weight unit in place of the half-ounce weight unit, to countries in Europe, Asia, Africa, Central and South America, Oceania, Australia and New Zealand.

The post office facilitated the sending of gift parcels of food, clothing, and medical supplies to the war-devastated countries. Parcel post rates to the United Kingdom were reduced at the commencement of 1947 and the 20-lb. weight limit for parcels was restored. Money order services on a restricted basis were resumed during 1947 to such countries as Norway and Iceland, and to several countries in the orient and the South Pacific.

During the 1946–47 fiscal year a 4th transcontinental flight in both directions was added to the trans-Canada air mail sy tem. New services linked Montreal, Que., Ottawa, Ont., a Washington, D.C.; Toronto, Ont., and Cleveland, O.; Fo William, Ont., and Duluth, Minn.; Victoria, B.C., and Seatt Wash.; Halifax, N.S., and Boston, Mass. On the prairies, m planes commenced stopping at Saskatoon, Sask.; Swift Curre Sask.; and Medicine Hat, Alta. New air mail services we opened to Flin Flon, Man., and Prince Rupert, B.C.; and a mail stops began at Cranbrook, Castlegar and Penticton, in Br ish Columbia. Air stage services were extended during 1947 Richmond gulf and Port Harrison, Que., on the eastern sho of Hudson bay, and frequency was increased to four trips a nually. Air mail miles flown in Canada in the fiscal year 194 47 totalled 20,104,976 (1945–46: 15,215,816 miles).

During 1947 special delivery service for air mail and surfa mail was adopted. (C. CY.)

**Great Britain.**—Post office transactions during the ye ended March 31, 1947, totalled £3,354,000,000, an increase £196,055,000 on the previous year's figures. Savings bank d posits, which in 1945–46 had amounted to £647,588,000, reache the figure of £753,688,000 in 1946 (including release benefi to service personnel), while the number of deposit accounts March 1947 was 25,000,000, 3,000,000 more than in Marc 1946. The capital value of deposits was £1,980,000,000 at th same date. Savings certificates purchased during the ye amounted to £209,461,000, an increase of £5,250,000 on th previous year.

The number of letters and packets delivered was more tha 7,000,000,000, as compared with 6,230,000,000 in 1946, and tha of parcels handled was 239,000,000. The total for letters an packets was still below the prewar level, and the number o parcels handled dropped from 257,000,000 in 1945–46 and 284 000,000 in 1944–45.

In 1946 air mail services had been made available to mos countries overseas. By the end of the year a daily service wa in operation over the North Atlantic, and air mails reached Ne York and Montreal a day after leaving London. British Sout American airways service carried mails several times weekly t Brazil, Uruguay, the Argentine and Chile and linked up with network of air services in South America. Increased availabilit of services to Australia and South Africa brought both countrie postally within five days of London.

In March 1947 the post office staff numbered 352,000, with yearly wage bill of £95,336,000, compared with £72,300,000 fo the previous year. There were still some 12,000 experience members with the forces or on loan to other government depart ments.

Wilfred Paling succeeded the earl of Listowel as postmaste general in June 1947. (*See* also PHILATELY; PHOTOGRAPHY TELEGRAPHY.) (C. NS.)

## Potash.

Production statistics for all of the major countrie except Poland and U.S.S.R. are presented below.

*World Production of Potash, 1941–46*

(In thousands of short tons of $K_2O$ content)

| | 1941 | 1942 | 1943 | 1944 | 1945 | 194 |
|---|---|---|---|---|---|---|
| France | 742 | 692 | 786 | 552 | 160 | 56 |
| Germany | 2,394 | 2,291 | 2,300 | 2,123 | ? | |
| Spain | 129 | 99 | 96 | 128 | 125 | |
| Palestine | 56 | 57 | 52 | 58 | ? | |
| United States | 525 | 679 | 739 | 835 | 874 | 93 |
| Total (est.) | 3,970 | 3,900 | 4,030 | 3,760 | ? | |

**United States.**—Within the past few years the domesti potash industry has become self-sufficient, and with a surplu for export. Production of crude salts rose from 1,588,305 shor tons in 1945 to 1,687,735 tons in 1946, with a potash content o 931,812 tons. Consumption increased from 1,490,719 tons t 1,569,225 tons, with 867,197 tons of potash content. Outpu ot ahead of sales, and in spite of increasing consumption and ports, stocks were being accumulated. (*See* also FERTILIZERS.)

(G. A. Ro.)

## otatoes.

Total production of all types of potatoes grown in the United States was estimated at 384,407,000 . or about 100,000,000 bu. less than the record crop of 484,- 1,000 bu. grown in 1946, and only slightly above the 376,122,- o bu. average of 1936–45. In the 19 late potato states, the 47 crop was 19% less than 1946 and 2% less than the aver- e. The acreage grown in 1947 was 2,111,900, about 15% less an the area of 1946 but more than the average. The yield was t at 182 bu. per acre—less than the 186.3 bu. record of 1946 t 50 bu. more than the average.

In Maine and New York yields were only slightly less than 1946, and the quality of the crop was good. Idaho, the cond largest potato-producing state after Maine, had a low eld because of the short growing season and harvested a total op of less than the average. The early potato states had be- w average crops while the midseason states' crop was near the erage.

Farm prices of potatoes ranged higher in 1947, from an aver- e of $1.29 per bushel in January to $1.69 in July. They then clined, as the harvest advanced, to a level of about $1.50 per shel in the fall, but advanced to $1.72 in December. Gov- nment price support operations were conducted on a large ale to care for the 90,000,000-bu. surplus of potatoes remain- g at the end of 1946. About 25,000,000 bu. were estimated a total loss by decay in storage and in the field. Export ipments in 1947 were not generally successful, large quantities oiling in transit. Early in 1947 the government announced the ice-support program to be 90% of parity, which was about 12% higher than a year earlier. The government purchased only 2,000,000 bu. of the early 1947 crop. By mid-September about 11,000,000 bu. had been purchased.

Table I.—*U.S. Potato Production, 1947, 1946 and 10-year Average, 1936–45*

(In thousands of bushels)

| State | 1947 | 1946 | 10-yr. Average |
|---|---|---|---|
| te Crop | | | |
| aine | 62,790 | 78,402 | 47,572 |
| aho | 25,600 | 45,390 | 32,797 |
| ew York | 20,130 | 23,760 | 12,616 |
| orth Dakota | 20,100 | 18,750 | 15,616 |
| olorado | 19,240 | 19,780 | 14,871 |
| nnsylvania | 17,985 | 20,066 | 20,184 |
| innesota | 14,520 | 17,365 | 18,839 |
| ichigan | 12,390 | 18,327 | 20,976 |
| alifornia | 11,220 | 13,110 | 10,574 |
| regon | 10,140 | 13,520 | 8,620 |
| isconsin | 10,080 | 11,865 | 14,593 |
| ashington | 8,840 | 10,120 | 8,120 |
| ebraska | 8,060 | 11,725 | 9,657 |
| hio | 5,460 | 7,560 | 9,539 |
| diana | 3,750 | 4,480 | 4,946 |
| onnecticut | 3,425 | 4,392 | 3,043 |
| est Virginia | 3,375 | 2,860 | 2,935 |
| assachusetts | 3,178 | 3,604 | 2,749 |
| olorado | 2,498 | 3,330 | 2,419 |
| yoming | 2,480 | 2,542 | 2,011 |
| outh Dakota | 1,840 | 2,842 | 2,107 |
| ontana | 1,820 | 2,210 | 1,798 |
| hode Island | 1,512 | 1,742 | 981 |
| ermont | 1,080 | 1,392 | 1,694 |
| nois | 1,056 | 1,764 | 2,754 |
| wa | 975 | 2,880 | 4,524 |
| ew Hampshire | 893 | 1,250 | 1,192 |
| evada | 483 | 672 | 467 |
| ew Mexico | 306 | 340 | 306 |
| ermediate Crop | | | |
| ew Jersey | 13,140 | 14,076 | 9,988 |
| rginia | 9,450 | 10,676 | 8,706 |
| entucky | 3,366 | 3,996 | 3,540 |
| issouri | 2,120 | 3,354 | 3,910 |
| aryland | 2,087 | 2,244 | 2,246 |
| izona | 1,740 | 1,836 | 588 |
| nsas | 1,188 | 1,636 | 2,200 |
| elaware | 336 | 354 | 356 |
| rly Crop | | | |
| alifornia | 26,040 | 33,210 | 13,016 |
| orth Carolina | 9,216 | 12,616 | 8,453 |
| xas | 4,536 | 5,883 | 4,009 |
| abama | 3,330 | 4,646 | 4,288 |
| orida | 3,272 | 6,249 | 3,973 |
| nnessee | 2,880 | 3,404 | 3,121 |
| kansas | 2,520 | 3,293 | 3,226 |
| uth Carolina | 2,440 | 3,576 | 2,541 |
| uisiana | 1,643 | 2,280 | 2,725 |
| ssissippi | 1,460 | 2,160 | 1,596 |
| eorgia | 1,422 | 1,909 | 1,450 |
| klahoma | 1,035 | 1,500 | 1,948 |

The world potato crop of 1947–48 was estimated at 7,081,-000,000 bu. in September, slightly below the 7,133,000,000 bu. crop of 1946–47 but only 16% less than the 8,418,000,000 prewar average (1935–39). Total 1947 acreage was put at 51,000,-000, not much below the prewar average of 53,000,000. Smaller crops in Europe resulted from drought and shortage of fertilizer. The world's average yield was estimated at 139 bu. per acre compared with 160 bu. per acre in prewar years. Before World War II the crop of central and western Europe amounted to 71% of the European total, but the five countries—Austria, Germany, Belgium, France and Poland—produced only 56% of the 1947–48 crop. The German crop was estimated at only two-thirds of prewar and Poland's total only one-half the 1935–39 average.

Table II.—*U.S. Sweet Potato Production in Leading States, 1947, 1946 and 10-year Average, 1936–45*

(In thousands of bushels)

| State | 1947 | 1946 | 10-year Average |
|---|---|---|---|
| Louisiana | 7,470 | 10,800 | 8,267 |
| North Carolina | 7,360 | 7,320 | 7,847 |
| Georgia | 6,545 | 7,020 | 7,180 |
| South Carolina | 5,940 | 6,090 | 5,165 |
| Alabama | 5,084 | 5,525 | 5,885 |
| Mississippi | 4,350 | 5,152 | 5,801 |
| Virginia | 3,500 | 3,250 | 3,566 |
| Texas | 4,675 | 6,570 | 4,828 |
| Tennessee | 2,325 | 3,150 | 3,886 |
| Maryland | 1,330 | 1,690 | 1,254 |
| Florida | 1,275 | 1,088 | 1,182 |
| California | 1,200 | 1,224 | 1,232 |
| Arkansas | 1,190 | 1,558 | 1,969 |
| Kentucky | 1,040 | 1,118 | 1,360 |

**Sweet Potatoes.**—The U.S. sweet potato crop was estimated at 57,178,000 bu. in 1947, compared with a crop of 66,424,000 bu. in 1946 and an average (1936–45) of 64,200,000 bu. The acreage dropped 5% below 1946, to a total of 611,400, compared with 676,100 in 1946 and an average of 737,700. The average yield was 93.5 bu. per acre compared with 98.2 in 1946 and a ten-year average of 87.2 bu. The mid-Atlantic states of Virginia and North Carolina had larger crops but the reduction in Louisiana, Mississippi and Texas brought down the total.

Prices of sweet potatoes rose to $2.70 in Aug. 1947, then declined to $2.04 in December. The high August prices were mostly for the stored 1946 crop which was still being shipped. The government announced support prices in August to extend from September to April 1948. Some purchases were made by the government in September when prices began to decline. These quantities were diverted to school-lunch uses. (*See* also FOOD SUPPLY OF THE WORLD; VEGETABLES.) (J. C. Ms.)

## Poultry.

U.S. production of poultry decreased in 1947. On Jan. 1, 1947, the number of chickens on farms was estimated at 475,442,000—10% less than the 530,203,000 counted in 1946 but 3% more than the ten-year average for 1936–45. Because of the smaller number of chickens raised in 1946, the number of pullets was 12% less than a year earlier. The chicken flocks were made up of 60% pullets, 32% hens and 8% other chickens. By July 1 the number of young chickens of 1947 hatching was estimated at 567,400,000, about the same as in 1946 but 1% less than the ten-year average.

Great confusion developed in Oct. 1947, when the government's campaign to save grain for Europe was begun. Consumers were urged to consume no poultry one day a week. The wisdom of this action was challenged by poultrymen, who argued that the reduced consumption of poultry meat would result in delayed marketing and the feeding of more grain to poultry. They urged that the policy be changed to encourage the consumption of fowl, thereby reducing the amount of grain for poultry feeding. The net result of the campaign showed in December that farmers had not greatly reduced their flocks nor limited egg production. The price of chickens to producers in Jan. 1947 was 25.6 cents per pound; it continued steady with a small advance to 27.9 cents in September followed by a decline to 25.2 cents in December.

The total number of broiler chickens raised during 1947 was estimated at 295,300,000. Chicken meat production was put at 3,445,000,000 lb. compared with 3,568,000,000 lb. in 1946. Per capita civilian consumption was 23.7 lb., compared with 25.3 lb. in 1946. Total egg production for 1947 was estimated at 5,016,000,000 doz.

World poultry production declined in 1945, particularly in Europe, to the lowest level in five years. The rebuilding of flocks was retarded by shortage of grain feeds. Eggs were also scarce for hatching because of their use for human food. Production gained slowly in 1947 and the United States, Argentina, Ireland and Cuba were the only countries in which production was less than that of 1946. Canada and Australia, important sources of eggs for Great Britain, continued to produce more in 1947.

**Turkeys.**—On Jan. 1, 1947, the estimated number of turkeys on farms was 6,632,000, 22% less than the record 8,493,000 head of 1946 and 4% less than the ten-year (1936–45) average of 6,915,000. The total number raised was estimated at 34,667,000 compared with 41,109,000 in 1946 and the record production of 44,221,000 in 1944. This reduction in the industry resulted from the sharp decline in prices in late 1946 from about 40 cents per pound in October to 30 cents in Jan. 1947. Large stocks placed in cold storage in late 1946 were not profitable to the storage firms, and in 1947 movement into storage was reduced. Supply for the holidays in 1947 was almost as large as in 1946 because of the reduced into-storage movement. Average civilian consumption of turkey meat was estimated at 4.1 lb. in 1947 compared with about 3 lb. in prewar. Military requirements were reduced to about 15,000,000 lb. in 1947 compared with 100,000,000 lb. in 1944. Prices to producers in 1947 continued at about 30 cents per pound until October, when they advanced to 34 cents; by December they had risen to 39 cents. Improvements in turkey raising continued through expansion of commercial farms, better breeding, feeding and disease control. (*See* also EGGS.) (J. C. MS.)

**Precious Stones:** *see* GEM STONES.

### Presbyterian Church.

The Reformed Churches holding the Presbyterian system, within the United States of America, were 12 in number in 1947 and included 18,370 ministers, 18,582 churches and 4,061,231 communicant members, with approximately 8,000,000 adherents.

The year was marked by gains in all departments of work, and for the Presbyterian Church in the United States of America, it was one of the best in its long history. During the year, 111,952 new communicant members were added to this church, setting an all-time record; there were 50,000 more names on the rolls of the Sunday schools; there were 67,623 infant baptisms, representing an increase of more than 20,000 over the year before. Similarly, the total contributions of the church were $78,567,368, exceeding those of the previous year by $18,884,987 and breaking all records.

Negotiations between the Presbyterian Church in the United States of America and the Presbyterian Church in the United States (Southern) continued and a revised plan of reunion was referred by the two general assemblies to their respective presbyteries for study and comment. After the Joint Drafting committee had studied the comments received, the plan of reunion might be revised in further particulars, and then transmitted t the two supreme judicatories for further action. During th year there was no meeting of the committees studying the proposed articles for a basis of union between the Presbyterian Church in the United States of America and the Protestan Episcopal Church in the United States of America.

The Presbyterian Church in the United States (Southern had a net gain in membership of 15,853, the largest gain in th history of the church. A notable first year's work was done b its newly created special committee on work among Negroes.

The synods of the Evangelical and Reformed Church, and th congregations and associations of the Congregational-Christia Church, were, at the close of the year, voting on a basis of union If the votes in both denominations were favourable—and it wa expected that they would be—the union was expected to b consummated in the fall of 1948.

Church World Service, the organization of the World Council of Churches for overseas relief and reconstruction, was wel supported by the membership of Presbyterian and Reformed Churches, and continued to relieve distressed peoples and devastated areas of the world. The restoration fund of the Presbyterian Church in the United States of America reached th large sum of approximately $25,000,000.

**Europe.**—Under the auspices of the reconstruction department of the World Council of Churches, a conference on evangelism opened in Geneva, Switzerland, in Feb. 1947. Participant from 15 different countries came together to discuss their common task of world evangelism. This theme was uppermost in all the Reformed Churches, which were endeavouring to recreate the work destroyed by World War II. The annual synod o the Reformed Church of France met at Mazamet with 80 delegates from 16 districts. The first meeting of the church assembly of the Evangelical Church in Germany met at Treysa, with 111 delegates, including 45 leading persons in church life from the eastern (soviet) zone. In the Hungarian Reformed Church a great spiritual review of adult church members was in preparation. The synod called upon all adult members to make a personal confession of faith in their churches in face of the congregation. The church in Yugoslavia asked the Hungarian Reformed Church synod to consider the introduction of a church constitution which would contain all the Hungarian Reformed Church communities in the world. (*See* also CHURCH MEMBERSHIP.) (W. B. PU.)

### Presidents, Sovereigns and Rulers.

The following list includes the names of those holding chief positions in their countries as of Jan. 1, 1948.

| Country | Name and Office | Accession |
|---|---|---|
| Afghanistan | Mohammad Zahir Shah | 1933 |
| Albania | Dr. Omer Nishani, President of the Praesidium of the People's Assembly | 1946 |
| | Col. Gen. Enver Hoxha, Prime Minister | 1944 |
| Arabia, Saudi | Abdul-Aziz ibn Abdurrahman al-Faisal Al-Sa'ud, King | 1927 |
| Argentina | Gen. Juan Domingo Perón, President | 1946 |
| Australia | William John McKell, Governor General | 1947 |
| | Joseph B. Chifley, Prime Minister | 1945 |
| Austria | Karl Renner, President | 1945 |
| | Leopold Figl, Chancellor | 1945 |
| Belgium | Leopold III, King (in exile) | 1934 |
| | Prince Charles, Regent | 1944 |
| | Paul-Henri Spaak, Prime Minister | 1947 |
| Bolivia | Enrique Hertzog, President | 1947 |
| Brazil | Gen. Eurico Gaspar Dutra, President | 1946 |
| Bulgaria | Mintcho Neychev, President of the Grand National Assembly | 1947 |
| | Georgi Dimitrov, Premier | 1946 |
| Burma | Sao Shwe Thaik, President of the Constituent Assembly | 1948 |
| | Thakin Nu, Prime Minister | 1946 |
| Canada | Field Marshal Viscount Alexander of Tunis, Governor General | 1946 |
| | W. L. Mackenzie King, Prime Minister | 1935 |
| Ceylon | Sir Henry Monck-Mason Moore, Governor and Commander in Chief | 1944 |
| Chile | Gabriel González Videla, President | 1946 |
| China | Generalissimo Chiang Kai-shek, President of the National Government | 1943 |
| | Gen. Chang Chun, President of the Executive Yuan | 1947 |
| Colombia | Mariano Ospina Pérez, President | 1946 |
| Costa Rica | Teodoro Picado Michalski, President | 1944 |
| Cuba | Dr. Ramón Grau San Martín, President | 1944 |

| Country | Name and Office | Accession |
|---|---|---|
| choslovakia | Dr. Eduard Beneš, President | 1940 |
|  | Klement Gottwald, Premier | 1946 |
| mark | Frederick IX, King | 1947 |
|  | Hans Hedtoft, Prime Minister | 1947 |
| inican Rep. | Gen. Rafael Leónidas Trujillo y Molina, President | 1942 |
| dor | Carlos Julio Arosemena, President | 1947 |
| pt | Farouk I, King | 1936 |
|  | Mahmoud Fahmy el-Nokrashy Pasha, Premier | 1945 |
|  | Sean T. O'Kelly, President | 1945 |
|  | Eamon de Valera, Premier | 1932 |
| opia | Haile Selassie I, Emperor | 1930 |
| and | Juho K. Paasikivi, President | 1946 |
|  | Mauno Pekkala, Prime Minister | 1946 |
| ice | Vincent Auriol, President of the Fourth Republic | 1947 |
|  | Robert Schuman, President of the Council of Ministers | 1947 |
| many | Allied Control Commission: |  |
|  | Gen. Lucius D. Clay (U.S.). | 1947 |
|  | Gen. Sir Brian Hubert Robertson (Gr. Brit.) | 1946 |
|  | Marshal Vasili D. Sokolovski (U.S.S.R.) | 1946 |
|  | Gen. Joseph Pierre Koenig (Fr.) | 1945 |
| at Britain | George VI, King | 1936 |
|  | Clement R. Attlee, Prime Minister | 1945 |
| ece | Paul I, King | 1947 |
|  | Themistocles Sophoulis, Premier | 1947 |
| temala | Juan José Arévalo, President | 1945 |
| ti | Dumarsais Estimé, President | 1946 |
| duras | Gen. Tiburcio Carías Andino, President | 1933 |
| gary | Zoltan Tildy, President. | 1946 |
|  | Lajos Dinnyes, Prime Minister | 1947 |
| and | Sveinn Björnsson, President | 1944 |
|  | Stefan Johann Stefansson, Prime Minister | 1947 |
| a, Dom. of | Earl Mountbatten of Burma, Governor General | 1947 |
|  | Jawaharlal Nehru, Prime Minister | 1947 |
|  | Mohammed Riza Pahlavi, Shahanshah | 1941 |
|  | Ibrahim Hakimi, Premier | 1947 |
| l | Feisal II, King | 1939 |
|  | Abdul-Ilah, Prince Regent | 1941 |
| y | Enrico de Nicola, President | 1948 |
|  | Alcide de Gasperi, Prime Minister | 1946 |
| an | Hirohito, Emperor. | 1926 |
|  | Katayama Tetsu, Premier | 1947 |
|  | Gen. Douglas MacArthur, Supreme Commander for the Allied Powers | 1945 |
| ait | Sheikh Sir Ahmed ibn Jabir al Subah | 1921 |
| anon | Sheikh Bishara al-Khuri, President | 1943 |
|  | Riyad bey al-Sulh, Premier | 1946 |
| eria | William V. S. Tubman, President. | 1944 |
| chtenstein. | Franz Joseph II, Sovereign Prince | 1938 |
|  | Alexander Frick, Chief of Government | 1945 |
| embourg | Charlotte, Grand Duchess | 1919 |
|  | Pierre Dupong, Premier | 1937 |
| xico | Miguel Alemán, President | 1946 |
| naco | Louis II, Prince | 1922 |
| rocco | Sidi Mohammed ben Youssef, Sultan | 1927 |
|  | Gen. Alphonse-Pierre Juin, French Resident General | 1947 |
| pal | Tribhubana Bir Bikram Sah, King | 1911 |
|  | Sir Padma Shumshere Jung Bahadur Rana, Prime Minister | 1946 |
| therlands | Wilhelmina, Queen | 1898 |
|  | Juliana, Princess Regent | 1947 |
|  | Louis J. M. Beel, Prime Minister | 1946 |
| wfoundland | Sir Gordon Macdonald, Governor | 1946 |
| w Zealand | Lt. Gen. Sir Bernard Freyberg, Governor General. | 1946 |
|  | Peter Fraser, Prime Minister | 1940 |
| caragua | Dr. Victor Manuel Román y Reyes, President | 1947 |
| rway | Haakon VII, King | 1905 |
|  | Einar Gerhardsen, Prime Minister | 1945 |
| nan (Muscat) | Sir Sayyid Said bin Taimur, Sultan | 1932 |
| kistan, Dom. o | Mohammed Ali Jinnah, Governor General | 1947 |
|  | Nawabzada Liaquat Ali Khan, Prime Minister | 1947 |
| lestine | Gen. Sir Alan Gordon Cunningham, High Commissioner and Commander in Chief | 1945 |
| namá | Enrique A. Jiménez, Provisional President | 1945 |
| raguay | Gen. Higinio Morínigo, President | 1940 |
| ru | José Luis Bustamente y Rivero, President | 1945 |
| ilippines, Rep. of the | Manuel A. Roxas, President | 1946 |
| land | Boleslaw Bierut, President of the National Council of the Homeland of the Polish Provisional Government | 1945 |
|  | Jósef Cyrankiewicz, Prime Minister | 1947 |
| rtugal | Gen. Antonio Oscar de Fragoso Carmona, President | 1928 |
|  | Dr. Antonio de Oliveira Salazar (Prime Minister), President, Council of Ministers | 1932 |
| mania | Constantin Parhon, President of Praesidium of National Assembly | 1948 |
|  | Petru Groza, Premier | 1945 |
| lvador, El | Gen. Salvador Castañeda Castro, President | 1945 |
| am. | Phumiphon Aduldet, King | 1946 |
|  | Khuang Aphaiwong, Provisional Premier | 1947 |
| uth Africa. | Maj. Gideon Brand van Zyl, Governor General | 1946 |
|  | Field Marshal Jan C. Smuts, Premier | 1939 |
| ain | Gen. Francisco Franco, Chief of State (President of the Council of Ministers). | 1938 |
| dan | Sir Robert George Howe, Governor General | 1947 |
| eden | Gustavus V, King | 1907 |
|  | Tage Fritiof Erlander, Prime Minister | 1946 |
| itzerland | Enrico Celio, President, Swiss Confederation | 1947 |
| ria | Shukri el-Quwatli, President | 1943 |
|  | Jamil Mardam Bey, Premier | 1946 |
| ans-Jordan | Abdullah ibn Hussein, King | 1946 |
|  | Tawfiq Pasha Abu-Huda, Premier | 1947 |
| nisia | Sidi Mohammed al Amin, Bey. | 1943 |
|  | Jean Mons, French Resident General | 1947 |
| key | Gen. Ismet Inönü, President | 1938 |
|  | Hasan Saka, Provisional Premier | 1947 |
| ion of Soviet Socialist Republics | Nikolai Mikhailovich Shvernik, President of the Praesidium of the Supreme Soviet | 1946 |
|  | Generalissimo Joseph V. Stalin, Chairman of the Council of Ministers | 1946 |
| ited States | Harry S. Truman, President | 1945 |
| uguay | Luis Batlle Berres, President | 1947 |
| tican City | Pius XII, Pope | 1939 |
| nezuela | Rómulo Betancourt, Provisional President | 1945 |
| men | Imam Yahya ben Muhammed ben Hamid ed Din, King | 1904 |
| goslavia | Ivan Ribar, President of the Praesidium | 1945 |
|  | Josip Brozovich or Broz (Tito), Premier | 1944 |
| nzibar | (Sir) Shaikh Khalifa bin Harub, Sultan | 1911 |
|  | Sir Vincent Glendary, British Resident | 1946 |

**Price Administration, Office of.** The Office of Price Administration was officially ended May 31, 1947, after about five years of statutory authority to stabilize prices of goods and services as well as residential rentals. At the height of its wartime activity, OPA had set ceiling prices on more than 80% of goods and services in the nation's private economy and controlled residential rentals in areas where more than three-fourths of the U.S. population lived. In addition, the office administered 13 rationing programs under delegation of authority from the president.

Scheduled to end June 30, 1947, with the expiration of the Price Control Extension act of 1946, the earlier liquidation date was made possible by a presidential order which provided for remaining functions to be taken over by other government agencies.

Control over prices of most goods and services had been lifted by Nov. 1946. However, sugar rationing, price control over sugar, certain sugar products and rice and control over residential rentals were continued.

Price control and rationing of sugar were made the responsibility of the secretary of agriculture as of April 1, 1947, under the Sugar Control Extension act signed by the president March 31, 1947. The secretary discontinued sugar rationing, except to industrial users, as of one minute after midnight of June 11, 1947, on the grounds of sufficient supply.

Under the president's executive order, remaining OPA obligations were disposed of as follows: effective May 4, 1947, rent control was transferred to the housing expediter and determination of subsidy claims, except as otherwise specified, to the Reconstruction Finance corporation.

Effective June 1, 1947, the program for premium payments on copper, lead and zinc ores and the auditing of the government industrial alcohol purchase program was transferred to the secretary of commerce, as was the responsibility for the final liquidation of the Office of Temporary Controls, including the Office of Price Administration. The order authorized the shifting of related records, property and personnel along with each function.

Officers to whom functions were transferred under the order were specifically given authority to institute, maintain or defend civil proceedings relating to these matters in any court, including the emergency court of appeals. The attorney general was directed to co-ordinate, conduct, initiate, maintain or defend litigation before the emergency court of appeals for or on behalf of the secretary of agriculture, the secretary of commerce and the Reconstruction Finance corporation, and litigation pending against violators of regulations or orders pertaining to prices of commodities no longer under control. He was also charged with all litigation arising out of directive 41 of the Office of Economic Stabilization relating to the withholding of subsidies because of noncompliance with, or violation of, control orders.

Thus, all pending litigation was taken over by the department of justice.

On Jan. 7, 1947, the issue was raised in congress as to whether or not a general amnesty for violators of the Emergency Price Control act should be issued. Some of the reasons a general amnesty was not granted were the effect it would have on general law enforcement and particularly the enforcement of government regulations which are temporary in nature, and the inequity that would result from collecting fines and penalties from violators whose cases were tried before price decontrol and not proceeding with the cases that had not reached trial prior to termination of price controls.

However, a series of directives issued by OPA, known as enforcement exceptions, made possible the dismissal of all cases where the amount of the overcharge was $200 or less, or where the only violation involved was of a procedural nature (for example, failure to file a report, to petition for an increase or to seek authorization) and where the facts affirmatively showed that had the seller followed the proper procedure, he would have been allowed to charge the prices at which he actually sold.

Enforcement activities of OPA resulted in a total of more than 280,000 enforcement sanctions instituted against violators of price, rent and rationing regulations, and in the collection of more than $73,000,000 for the U.S. government. Approximately 6,000 cases were transferred to the department of justice on June 1, 1947, involving pending government monetary claims under section 205 (e) of the act, amounting to more than $50,000,000. OPA was successful in more than 95% of the court cases completed by it. (*See* also PRICES; RATIONING.)

(W. E. RY.)

**Prices.** During 1947 the subject of prices received more attention than any other topic dealing with the domestic economy of the United States. At the same time, there were more misconceptions and differences of opinion as to why prices were high and rising and what might be done about halting the rise than was warranted by even a rudimentary knowledge of the economics of prices.

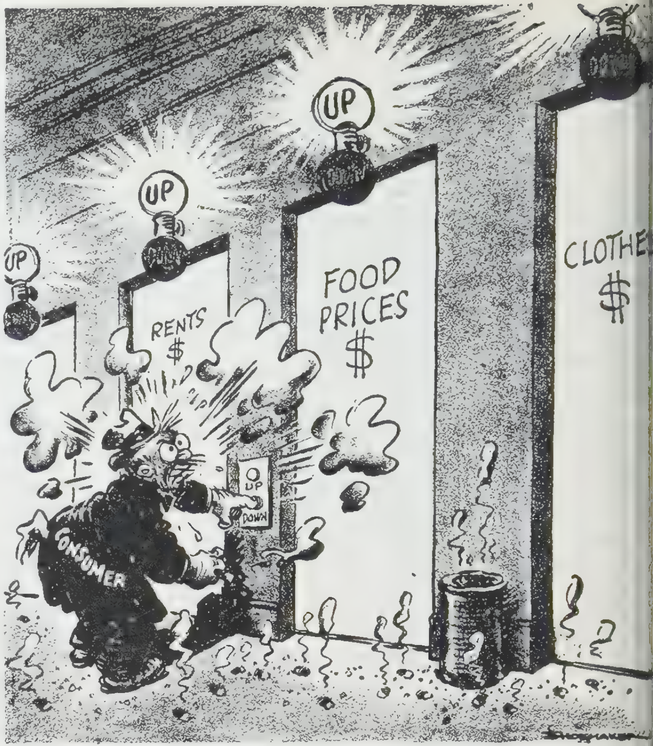
**Table I.**—*Per Cent Change in Wholesale Prices, by Major Commodity Groups, United States, Selected Periods, 1939–47*

| Commodity | World War II (Aug. 1945 from Aug. 1939) | Post World War II (Dec. 1947 from Aug. 1945) | World War II to end of Dec. 1947 | Year 1947 |
|---|---|---|---|---|
| Farm products | +108 | +53 | +217 | +15 |
| Foods | + 58 | +69 | +167 | +12 |
| Hides and leather products | + 27 | +73 | +120 | +15 |
| Textile products | + 47 | +46 | +114 | + 8 |
| Fuel and lighting materials | + 17 | +41 | + 64 | +24 |
| Metal and metal products | + 12 | +45 | + 62 | +12 |
| Building materials | + 31 | +59 | +109 | +19 |
| Chemicals and allied products | + 28 | +45 | + 87 | +10 |
| Housefurnishing goods | + 22 | +29 | + 57 | +12 |
| Miscellaneous | + 29 | +27 | + 64 | +10 |
| All commodities other than farm products and food | + 25 | +44 | + 79 | +15 |
| All commodities | + 41 | +52 | +115 | +14 |

Source: Computed from wholesale prices published by the bureau of labour statistics, United States department of labour.

Contrary to popular belief, increases in wholesale prices during 1947 proceeded at a slower pace than during the postwar period as a whole or during the post-price-control period as a whole. As shown in Table I, the average prices of all commodities rose 14% during the year, an average of 1.17% per month. Except for fuel and lighting materials (which increased at the rate of 2% per month) and building materials (which increased at the rate of 1.58% per month) the increases were substantially the same for all classes of commodities. The reasons for the concern about the wholesale price increases in 1947 were three: (1) the percentage changes were based on prices that were already quite high at the beginning of the year; (2) the rate of increase was substantially above that occurring during the World War II period, being more than twice as high (1.17% per month compared with 0.57% per month during the period from Aug. 1939 to Aug. 1945); and (3) the consistent increases provided no indication of a possible plateau being reached shortly, or of a possible downturn in prices.

During the entire period from Aug. 1939 to the end of 1947, average wholesale prices of all commodities increased 115%. Approximately 36% of this increase took place during 72 months of the war (from Aug. 1939 to Aug. 1945) and about 64% occurred in the 28 months after the war ended (from Aug. 1945 to the end of 1947). Consequently, the rate of price increase in the postwar period was nearly five times as high (2.28% per month) as it was during the war period (0.57% per month).



"A LIMIT TO HIS PATIENCE," a cartoon by Shoemaker of the *Chicag Daily News* on the primary grievance of U.S. consumers in 1947

For the entire period under consideration, by far the largest increase in wholesale prices was in the field of farm products which in Dec. 1947 were 217% higher than in Aug. 1939. On explanation of this meteoric rise was that such prices wer relatively low in 1939.

**Table II.**—*Per Cent Change in Wholesale Prices, by Major Commodity Group Selected Periods, 1942–47, and Level of Prices at End of 1947 Compared to High Post World War I in 1920*

| Commodity | March 1942 from Aug. 1939* | June 1946 from March 1942† | Dec. 1947 from June 1946‡ | Dec. 1947 from high po World Wa in 1920§ |
|---|---|---|---|---|
| Farm products | +69 | +36 | +38 | +14 |
| Foods | +43 | +17 | +59 | +21 |
| Hides and leather products | +26 | + 5 | +67 | + ‖ |
| Textile products | +42 | +13 | +33 | −25 |
| Fuel and lighting materials | + 7 | +13 | +36 | −43 |
| Metal and metal products | +11 | + 8 | +35 | − 4 |
| Building materials | +23 | +18 | +44 | +11 |
| Chemicals and allied products | +30 | + ‖ | +44 | −20 |
| Housefurnishing goods | +20 | + 8 | +22 | −10 |
| Miscellaneous | +22 | +10 | +22 | −32 |
| All commodities other than farm products and foods | +19 | +11 | +36 | −18 |
| All commodities | +30 | +16 | +43 | − 4 |

*From the beginning of World War II to the beginning of general price controls.
†From the beginning of general price controls to the end of general price controls.
‡From the end of general price controls to the end of 1947.
§See Table III for the high month for the various commodities.
‖ Less than .5%.
Source: Computed from wholesale prices published by the bureau of labour statistic United States department of labour.

Another way of viewing what had happened in wholesal prices is through an analysis of the price changes by period related not only to the war itself but also to price control measures. As shown in Table II, during the 30 months from Aug 1939 to the effective date of the general maximum price controls, the rise in the average wholesale prices of all commoditie accounted for 26% of the total increase from Aug. 1939 to th end of 1947, averaging 1% per month. Increases in the price of farm products, however, averaged 2.3% per month, an foods averaged 1.43% per month, the same as in textile products. Some of the classes of commodities registered relativel small increases as they were already affected by selective pric controls beginning with March 1941. During the 52 months o general price control, wholesale prices of all commodities increased 16%, averaging 0.31% per month, with farm product prices increasing on an average of 0.69% per month, or mor ble III.—*World War I: Per Cent Change in Wholesale Prices, by Major Commodity Groups, United States, Selected Periods, 1914–22*

| Commodity | World War I Nov. 1918 from July 1914 | High post World War I 1920 from Nov. 1918 | High post World War I 1920† from July 1914 | Low post World War I 1921–22‡ from high post World War I 1920 |
|---|---|---|---|---|
| products | +111 | +13 | +138 | −53 |
| ls | +104 | +16 | +137 | −44 |
| s and leather products | + 89 | +55 | +192 | −51 |
| ile products | +158 | +36 | +252 | −54 |
| and lighting materials | +105 | +84 | +277 | −61 |
| al and metal products | + 81 | +10 | + 99 | −36 |
| ling materials | + 92 | +65 | +218 | −46 |
| micals and allied products | +128 | −2* | +123 | −43 |
| sefurnishing goods | + 75 | +51 | +164 | −32 |
| ellaneous | + 62 | +25 | +102 | −50 |
| l commodities other than farm products and food | + 98 | +34 | +165 | −44 |
| l commodities | +103 | +23 | +148 | −45 |

Chemicals reached a high in April 1918, dropped and recovered but never again hed the high level of April 1918.

The high month in 1920 was May for farm products, June for foods, February for hides leather products, April for textile products, August for fuel and lighting, August for al and metal products, April for building material, May for chemicals, July for house-ishings, July for miscellaneous, August for all commodities other than farm and foods, for all commodities.

The low month in 1921 was June for farm products, August for textiles, August for all modities other than farm and foods, September for fuel; and in 1922 was January for ls, May for hides, August for metals, March for building materials, July for chemicals, for housefurnishings, August for miscellaneous, January for all commodities.

ource: Computed from wholesale prices published by the bureau of labour statistics, ed States department of labour.

an twice as fast. The increases in prices recorded for the riod of general price control do not include black market erations or possible quality deterioration and to that extent derstate the actual price increases. Finally, 56% of the total ice increases took place in the 18 months from the termina-n of general price control in June 1946 to the end of 1947, eraging 3.11% per month, which was three times as much of increase as occurred before general price control was adopted d ten times as much as the average monthly increase during e control period.

Wholesale prices of all commodities were high in 1947 and ere consistently rising. Whether they were so high as to cause arm and grave national concern could be seen in part from a mparison with price increases that took place in the World ar I period and the level reached at the high point in 1920. ata for such a comparison are presented in Table III, also in e last column of Table II. During the 51 months of the war om July 1914 to Nov. 1918 the prices of all commodities creased 103%, an average of 2.02% per month, while during e postwar period of approximately 20 months from Nov. 18 to the high points reached in 1920 the prices increased nly 23%, an average of 1.15% per month. The total increase r the entire period of 71 months was 148%, an average of 08% per month, compared with a total increase in such prices om the beginning of World War II in Aug. 1939 to the end 1947 of 115%, an average of 1.15% per month.

Part of the explanation for the larger total increase in prices uring World War I may lie in the fact that the increases arted from a lower level in 1914 when the yearly average dex of wholesale prices of all commodities was 68.1, compared ith an index of 77.1 for 1939, the latter being 13.2% higher. nother explanation might be that the U.S. had not reached the eak of prices by Dec. 1947, if history was to repeat itself, and at the peak reached at that time might be even higher, in rt because of the increased demand for U.S. products from road to be supplied under one plan or another.

In fact, the prices of all commodities in Dec. 1947 were 4% elow the peak of 1920. To this there were three notable ex-eptions. Average wholesale prices of foods were 21% above e peak of 1920, prices of farm products were 14% above ch peak, and the prices of building materials were 11% above e 1920 peak. Thus it was not so much a question of over-all holesale prices as it was one of wholesale prices in given areas ith which the public was vitally concerned, namely foods and building materials. It is interesting to note that the average prices of all commodities other than farm products and foods were 18% below the peak of such prices in 1920 and that in certain areas like fuel and lighting materials, textile products and chemicals they were even lower than that. This might mean that in some of these areas (as happened in Dec. 1947 in the substantial increase in the price of gasoline and other petroleum products) further price increases would materialize or that in some areas such as textiles and chemicals there was ample capacity to supply existing demand.

When the break in prices came after World War I, the average prices of all commodities declined 45% from the peak, and in general there was a tendency for the decline to be more severe in those areas in which the rise was the steepest. In no class of products was the entire gain in prices wiped out, and none returned to the prewar price level. For all commodities, the average prices at the low point of the recession in 1922 were still about 36% above those at the beginning of the war in July 1914, and for all commodities other than farm products and foods, they were 48% higher.

Table IV.—*Per Cent Change in Cost of Living (Consumers' Retail Prices), by Major Commodity Groups, United States, Selected Periods, 1939–47*

| Commodity | World War II Aug. 1945 from Aug. 1939 | Post World War II Oct. 1947 from Aug. 1945 | Oct. 1947 from Aug. 1939 | Oct. 1947 from Dec. 1946 |
|---|---|---|---|---|
| Food | +51 | +43 | +116 | +8 |
| Clothing | +46 | +29 | + 88 | +7 |
| Rent | + 4 | + 6 | + 10 | +6 |
| Fuel, electricity and ice | +14 | +12 | + 28 | +8 |
| Housefurnishings | +45 | +29 | + 87 | +6 |
| Miscellaneous | +24 | +14 | + 41 | +4 |
| All Items | +31 | +27 | + 66 | +7 |

Source: Computed from data published by the bureau of labour statistics, United States department of labour.

On the retail level, as reflected by the cost of living indexes published by the bureau of labour statistics, prices in 1947 increased only about one-half as much as they did on the wholesale level. The increase for all items during the year averaged 7%, and in food it was but one point higher. For the entire war and postwar period covered by the data in Table IV, the cost of living increased 66%, 47% of the increase having taken place prior to the end of the war and 53% in the postwar interval. This meant that the Oct. 1947 dollar, in terms of consumer purchasing power, was worth only 60 cents compared with the Aug. 1939 dollar. It follows, therefore, that, by and large, a person who failed to earn in the later period at least 66% more than he earned in 1939 was actually worse off than he was prior to the war.

Table V.—*Per Cent Change in Cost of Living (Consumers' Retail Prices), by Major Commodity Groups, United States, Selected Periods, 1942–47, and Level at End of 1947 Compared to High Post World War I in 1920*

| Commodity | March 1942 from Aug. 1939* | June 1946 from March 1942† | Oct. 1947 from June 1946‡ | Oct. 1947 From high post World War I June 1920 |
|---|---|---|---|---|
| Food | +27 | +23 | +38 | + 9 |
| Clothing | +23 | +27 | +20 | −10 |
| Rent | + 4 | −§ | + 6 | − 4 |
| Fuel, electricity and ice | + 7 | + 6 | +13 | +19 |
| Housefurnishings | +20 | +29 | +20 | +11 |
| Miscellaneous | +10 | +16 | +11 | +41 |
| All items | +16 | +17 | +23 | +10 |

*From the beginning of World War II to the beginning of general price controls.
†From the beginning of general price controls to the end of price controls.
‡From the end of price controls to Oct. 1947.
§Less than .5%.

Source: Computed from data published by the bureau of labour statistics, United States department of labour.

The rise in the cost of living was by no means the same in all items. Food costs rose 116% during the entire period of some 98 months covered by the data in Table IV. About 23% of this rise took place, as shown in Table V, before general price controls became effective, another 25% during the period of such

"HE'S FORGOTTEN THE REST OF THE ACT," a faithful, if comic analogy to the U.S. price levels of 1947, by Alexander in the *Philadelphia Evening Bulletin*

control (not counting black and gray market operations), and 52% in the 16 months following termination of general price controls. The price of clothing went up 88% during the entire period, of which about 26% took place before general price controls became effective, 33% during the period of such control, and the remaining 41% after termination of controls. The magnitude and the pattern of the price increases occurring in housefurnishings were practically the same as in clothing. Rents, however, remained relatively constant. The total increase was but 10%, of which four points were marked up prior to the General Maximum Price Regulation (G.M.P.R.); practically no increases took place during such general price controls; and only six points were marked up from June 1946 to Oct. 1947 because rents remained under control.

Compared with the rise in the cost of living in the World War I period, as shown in Table VI, when it was doubled by 1920 over July 1914, the rise in the cost of living in World War II, amounting to 66%, was relatively mild. During the previous period, when the high point was reached in 1920, food prices had risen 126%; clothing, 176%; and rent, 51%. As price controls were few, about 60% of the rise took place during the war and 40% afterward, while in World War II only 47% of the rise took place during the war and 53% afterward.

Table VI.—*World War I—Per Cent Change in Cost of Living (Consumer Retail Prices), by Major Commodity Groups, United States, Selected Periods, 1914–22*

| Commodity | World War I Nov. 1918 from July 1914 | High post World War I June 1920 from Nov. 1918 | High post World War I, June 1920 from July 1914 | Low post World War March 1922 from high post World War I, June 1920 |
|---|---|---|---|---|
| Food | +79 | +26 | +126 | −36 |
| Clothing | +93 | +43 | +176 | −39 |
| Rent | +20 | +26 | + 51 | +19† |
| Fuel, electricity and ice | +27 | +17 | + 49 | + 5† |
| Housefurnishings | * | * | * | −31 |
| Miscellaneous | +54 | +19 | + 82 | + 1 |
| All Items | +60 | +26 | +101 | −20 |

*Not available.
†Held up during the 1921–22 decline.
Source: Computed from data published by the National Industrial Conference board for the period 1914–20 and bureau of labour statistics, United States department of labour for the period 1920–22.

Toward the end of 1947 the cost of living level was 10% above that reached at the peak in 1920. Fuel and power, housefurnishings and food were all above the peak of 1920 by 19%, 11% and 9%, respectively. On the other hand, clothing was 10% below the peak of 1920, and rent was 4% below the 1920 high. When the break came and the bottom was reached in March 1922, the cost of living as a whole declined 20% from the 1920 peak and proportionally larger declines took place in the price of foods (36%), clothing (39%) and housefurnishings (31%).

Rents, however, were 19% higher than in 1920 and remained high for some years afterward.

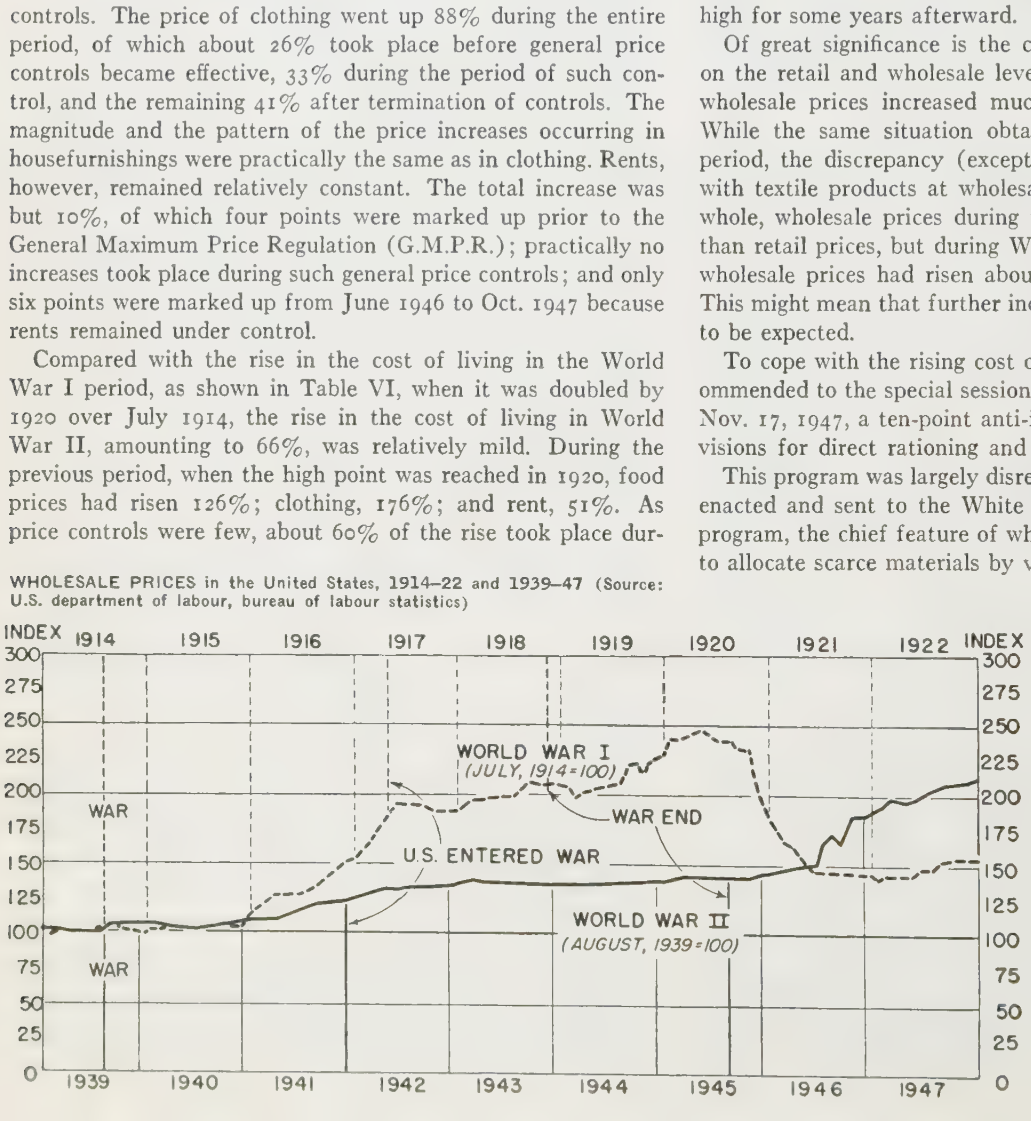
Of great significance is the comparison in the price changes on the retail and wholesale levels. Except in housefurnishings, wholesale prices increased much more than did retail prices. While the same situation obtained during the World War I period, the discrepancy (except in clothing at retail compared with textile products at wholesale) was much smaller. On the whole, wholesale prices during the first period rose 47% more than retail prices, but during World War II to the end of 1947 wholesale prices had risen about 74% more than retail prices. This might mean that further increases in the cost of living were to be expected.

To cope with the rising cost of living, President Truman recommended to the special session of congress, which convened on Nov. 17, 1947, a ten-point anti-inflation program including provisions for direct rationing and price controls.

This program was largely disregarded, and in its place congress enacted and sent to the White House on Dec. 19 a substitute program, the chief feature of which was permission for industry to allocate scarce materials by voluntary agreement under anti-trust law exemption with approval of the attorney general. Thus, as the year 1947 drew to a close, with an innocuous national program at hand, the problem of inflation and of high prices that continued to rise remained substantially the same as it had been throughout the year. (*See* also INCOME AND PRODUCT, U.S.; PRICE ADMINISTRATION, OFFICE OF.)

(T. N. B.)

WHOLESALE PRICES in the United States, 1914–22 and 1939–47 (Source: U.S. department of labour, bureau of labour statistics)



**Great Britain.**—*Wholesale Prices.*—The rise in imported food prices, continuous throughout World War II, was accelerated late in 1946 and in 1947, lecting the shortage of world agricultural supplies in relation world demand. The general level of prices of imported food-ffs at the end of 1947 was about two and one-half times the 38 level. Much of the rise was absorbed through large and in-asing subsidies as the commodities passed on toward the con-nption stage. The standard index numbers of wholesale food ces meant little, being mixtures of rising import prices and of ble domestic prices. On the other hand, markets for basic terials were dominated by world or import prices, which on average were about twice the 1938 level by the end of 1945 d nearly three times in the latter part of 1947. All index num-rs of materials' prices at wholesale showed this rise.

There was no adequate measure of rising prices of manufac-ed goods. The index of the board of trade was unrepresenta-e since it omitted many products derived from materials ıch as timber) which had risen most in price. The prices of ınufactures for export rose sharply from the middle of 1946 ward, probably faster than wholesale prices of manufactures general. Even so, the terms of trade tended to become un-vourable, with the increase in price of manufactured exports s than that of imported foods and, particularly, of imported aterials. Considerations of the "hardness" or "softness" of reign currencies became increasingly important. Britain was rced often to buy in relatively dear (but "soft") markets and sell under more competitive conditions.

Conclusions based on wholesale price index numbers, how-er, must be accepted with caution. The price structure in 47 was neither normal nor stable. The direction of domestic d overseas trade was radically different from that before the ar. The composition of such index numbers as that of the ard of trade was inappropriate to conditions of 1946–47, both to items covered and as to the weights used in combining em.

*Retail Prices.*—The old cost of living index was discontinued the ministry of labour in the middle of 1947. The index was ther narrowly based on a limited list of food and other prices d individual price changes were combined on the basis of orking-class purchases before World War I. These facts made possible to keep the computed value of the index stable, by e device of manipulating subsidies on a relatively small num-er of items. This was, in effect, the official policy. The course the index and its components was an illustration of price anipulation rather than an indication of the genuine rise in rices paid by working-class families. Increases in rates, in the rices of clothing and fuel and in the tobacco duty in the spring 1947 were deliberately offset, in the index figure, by increased ubsidies and artificially reduced prices of sugar, eggs and other ems.

Table VII.—*Wholesale and Retail Price Index Numbers, United Kingdom*

(Average 1938=100)

| | 1945 | 1946 | 1947 | | | |
|---|---|---|---|---|---|---|
| | Dec. | Dec. | March | June | Sept. | Nov. |
| holesale prices* (board of trade) | 167 | 177 | 181 | 187 | 192 | 200 |
| Food | 162 | 161 | 163 | 170 | 169 | 175 |
| Basic materials | 203 | 223 | 227 | 235 | 259 | 273 |
| Intermediate products | 175 | 195 | 204 | 212 | 219 | 229 |
| Manufactures | 144 | 161 | 165 | 167 | 169 | 175 |
| holesale prices† (*Statist*) | 179 | 220 | 233 | 240 | 251 | 264 |
| Food | 164 | 166 | 168 | 176 | 184 | 190 |
| Materials | 188 | 254 | 274 | 279 | 294 | 311 |
| port and export prices* (board of trade) | | | | | | |
| Food, imports | 195 | 216 | 226 | 236 | 238 | 239 |
| Materials, imports | 214 | 235 | 246 | 271 | 284 | 295 |
| Manufactures, exports | 195 | 210 | 220 | 227 | 237 | 241 |
| st of living*‡ (ministry of labour) | 130 | 131 | 131 | 130/100 | 101 | 103 |
| Food | 120 | 120 | 120 | 115/100 | 100 | 103 |
| Rent and rates | 104 | 105 | 105 | 109/100 | 100 | 100 |
| Clothing | 166 | 167 | 164 | 166/100 | 101 | 102 |
| Fuel and light | 153 | 155 | 156 | 157/100 | 100 | 107 |
| imated index of retail prices | 150 | 155 | 155 | 160 | 161 | 166 |

*Reproduced from the *Monthly Digest of Statistics* with the permission of the controller of M. stationery office.

†Reprinted by kind permission of the *Statist*, London (figures converted from *Statist* basis), d of the London and Cambridge Economic Service *Bulletin*, London, Aug. 1947.

‡After June 1947, new interim index of retail prices based on June 17, 1947=100.

The new interim index of retail prices introduced in mid-1947 was a double improvement on the cost-of-living index which it replaced. The new index included a wider selection of items and a number of additional groups not in the old index. Fresh vegetables and fruit were now represented under food, for example, and furniture, entertainment and drink were additions. Further, the new index was based on working-class purchases, not in 1914, but in 1937–38. Being more broadly based, the new index would be less affected than the old by changes in subsidies. On the other hand, it would be more sensitive to changes in indirect taxes; *e.g.*, on drink and tobacco.

The immediate utility of the new index was limited by the fact that it tied prices back only to June 1947 and made no comparison with prewar prices. However, if estimates of individual price changes from 1938 were combined with the weights of the new index, an estimate could be made of the general change in retail prices paid by working-class families after 1938 (*see* London and Cambridge Economic Service, *Bulletin*, Aug. 11, 1947). The increase over 1938 could be put at 50% by the end of 1945 and 60% by mid-1947. These estimates still took account of subsidies; they showed changes in actual prices paid, some of which were kept low by subsidies.

Increased duties on beer, wines and spirits and higher rates of purchase tax on a wide range of items were introduced in the budget of Nov. 1947. A new policy on subsidies was also announced, whereby total expenditure on them was to be kept stable, so that further increases in prices of imported food would show up in retail prices. The index of retail prices therefore rose at the end of the year, and further rises were to be expected.

**Europe.**—In countries less affected than most by the war—Scandinavia, Eire and Switzerland—the course of wholesale and retail prices was not very different from that in Britain. In the middle of 1946, wholesale prices had been nearly stationary for some time at a level about 70%–100% above that of 1938. A slow upward movement then started, a reflection to a greater or less extent of the rise in prices of imported commodities. The cost of living also rose rather slowly, but even at the end of 1947 it was generally little more than 60% above 1938.

In contrast, in such liberated countries as the Netherlands and Czechoslovakia, prices increased very sharply, both at wholesale and retail, in the months after V-E day, reaching levels between two and three times that of 1938. The rise then tapered off, and 1947 was a year of relatively stable prices.

In other countries, inflationary forces were not kept completely under control and the usual records of prices in domestic currencies meant very little. In France, for example, wholesale prices in francs were recorded in 1947 at a level more than 10 times the 1938 figure; the corresponding multiple was 12½ times for retail food prices in Paris. Here, it was more relevant to inquire to what extent consumers had access to and used controlled, free or black markets (*see* also AGRICULTURE; BLACK MARKETS; BUSINESS REVIEW; CONSUMER CREDIT; STOCKS AND BONDS; WAGES AND HOURS; and articles on individual commodities.) (R. G. D. A.)

**Primary Education:** *see* EDUCATION.

## Prince Edward Island.

Smallest province of Canada, crescent-shaped Prince Edward Island lies in the Gulf of St. Lawrence 9 mi. from the mainland. Area: 2,184 sq.mi.; it is 130 mi. long, with an average width of 21 mi. Pop. (1941): 95,047; (1947 est.) 94,000. The largest centre is the provincial capital, Charlottetown, with a population in 1941 of 14,821.

**History.**—Liberal Premier Walter J. Jones went to the country in December and won a 4th straight Liberal victory (1943 election: 20 Liberals, 10 Progressive-Conservatives; 1947 election: 24 Liberals, 6 Progressive Conservatives). The Liberals got 51% of the vote, Progressive-Conservatives 45%, Co-operative Commonwealth federation 4%.

The new federal $5,500,000 ferry, "M. S. Abegweit," to carry passengers and freight between the island and the New Brunswick mainland, went into service in August. It was the most modern icebreaker of its kind, and the heaviest ship ever built in a Canadian shipyard (7,500 tons). The Canadian National railways announced reduced ferry rates for trucks when loaded with farm and fish products. In an election campaign address, Premier Jones promised abolition of road taxes.

The government announced a plan for an $8,000,000 province-wide electrification program under a provincial commission. In 1944 of 16,968,000 kw.hr. generated, only 4,320,000 kw.hr. were from publicly owned plants. Wood-lot conservation was begun by an educational campaign among wood-lot owners to reduce the annual $2,000,000 loss from disease, parasites and indiscriminate cutting.

**Education.**—In the 1944–45 school year, 19,648 pupils were enrolled in all educational institutions. The average daily attendance in provincially controlled schools was 12,984. In 1944–45 there were 665 teachers in provincially controlled schools, toward which the government granted financial support of $318,460.

**Agriculture and Fishing.**—In 1946 there were 474,900 ac. in field crops (the peak was 505,500 ac. in 1940), with crop values at $15,344,000 (1945: $18,975,000). The 1946 potato production amounted to 5,723,000 tons (1945: 4,601,000 tons). The 1947 lobster catch fell off because of heavy rains, cold weather and rough seas. The "tunnel" (controlled hot air) system of drying cod and hake replaced sun drying.

**Production.**—The gross value of 1945 production was $36,431,776. The net value was $20,604,911, which was .34% of Canada's total. Per capita production was $223.97. (C. Cy.)

**Princeton University.** An independent institution, devoted to the liberal arts and sciences, situated in Princeton, N.J. During 1947 Princeton concluded a year-long celebration of the 200th anniversary of its founding. Events included a series of academic conferences in various fields of learning, bringing together, in total, 1,000 scholars and men of affairs from all parts of the world; and two major convocations, the second of which, in June, climaxed the bicentennial celebration and was attended by Pres. Harry S. Truman and other national leaders and delegates from 400 educational institutions and learned societies in the United States and other countries.

The year, otherwise, was notable for the successful conversion, despite overcrowded conditions, to peacetime operation, including re-establishment of many of the characteristics of Princeton's prewar residential life.

In the fall Princeton inaugurated its new plan of study in the liberal arts and sciences. The program, which the class of 1951 was to be the first to pursue, provides wider opportunity for general education in underclass years and increased possibilities for independent study and original work in upperclass years.

Princeton introduced a program in near east studies, permitting undergraduates, for the first time, to choose the languages, culture and social institutions of that area as a field of concentration. It also began a long-range systematic self-study of its own product in an effort to substitute ascertained fact for opinion regarding its educational methods and their results.

By the end of the year, the new Dillon gymnasium was completed sufficiently to afford partial use and work on the Firestone Memorial library was reaching the final stage. (For statistics of endowment, enrolment, faculty, library volumes, etc., *see* UNIVERSITIES AND COLLEGES.) (H. W. Do.)

**Principe:** *see* PORTUGUESE COLONIAL EMPIRE.

**Printing.** Announcement was made during 1947 of a process for making photoengraved and offset-lithographic printing plates without photographic film or chemical developers. A metal plate with a special photoconductive coating, sensitized by spraying with electrons, is placed in the camera in place of film or glass plate. The plate is exposed in the camera in the same general manner as is employed in exposing photographic film or glass plates; photographic speeds are comparable. It is then placed in a tray containing a micronized powder, and after dusting with this powder, the image becomes visible (this step is analogous to developing the film or glass plate). The metal plate is then heated until the powder fuses to form a solid resist image on the surface. At this point, it is ready for etching, or if the metal was originally grained, the plate can be used immediately as a lithographic plate. The principle is as follows: when a metal plate coated with a photoconductive layer is charged with static electricity, as by spraying with electrons, the surface of the coating becomes sensitive to light, so that if an image is projected onto the surface, electrostatic charges will leak away where the light strikes and remain in the shadow parts of the projected image. This image becomes visible after developing the plate by dusting with a special type of micronized powder. This electrophoto process produces a positive to positive reproduction.

An electronic automatic halftone engraving machine combining Howey-G. Washington patents, was put into practical everyday production. The machine makes 65-line halftone engravings on plastic material. A positive photographic print wrapped around a revolving cylinder is scanned by a photoelectric cell. On an accompanying revolving cylinder is wrapped a sheet of celluloid or other plastic. An engraving device containing a pyramid point stylus (heated to 1,200° F.) penetrates the plastic surface "as commanded" by the photoelectric cell which in turn is actuated by the revolving photographic print. In 65-line screen the halftone interstices are 0.007 in.–0.008 in. deep, and shadow areas are approximately 0.004 in. deep. The stylus engraves 380 holes per second, and a useful area of an 8-in. by 10-in. halftone may be completed in 20 min. The resultant halftone may be mounted and printed from direct or may be moulded from for stereotyping.

Development and successful operation of a pilot machine in actual production for setting type photographically was announced. The machine is designed along lines of the standard line-composing machine and produces composed matter in film or positive paper form in any measure up to 42 picas width, from 5 pt. up to and including 36 pt. face. The letter element is contained in a negative film form set within the body of a standard-shaped matrix. After the line has been assembled by the operator, it is justified automatically to the required length, and characters are photographed singly on film or paper. Matrices are distributed in the same manner as in standard slug-casting machines.

A research laboratory announced development of printing ink which dries almost immediately. A new synthetic resin is ground with pigment and dispersed in a solvent. The grinding of the pigment into the resin produces a spongy mass which holds the solvent just as a sponge holds water. When the ink is used in printing, the printing pressure squeezes the solvent out of the resin. Since the resin itself requires no oxidation, it is dry as soon as what little solvent remains evaporates. This takes place so rapidly that drying is almost immediate. Ink, however, does not dry on press rollers or in fountains because the resin behaves like a sponge and does not lose the solvent until it is squeezed under printing impression on the press.

Three companies announced development of other equipment and inks with properties for fast-drying of freshly printed webs to prevent offset and to increase printing speeds in newspaper colour printing. In one of these, the drying of moisture-setting s is based on the principle of precipitation. The ink consts of a pigment dispersed in a vehicle made of synthetic resin solved in a high boiling solvent. When the film of ink is jected to low-pressure steam impinged against the paper b the binder is thrown out of solution, thus "drying" the ink n. Another company announced development of heat-set ink d necessary high-temperature ovens through which newsprint per web passes immediately after being printed on the press set the ink immediately on newspaper colour comic and gazine sections. A third method of fast-drying newspaper our printing consisted of suitable ovens and drying ducts lizing a direct flame heater and heated air mounted in the ess in such a manner that as each colour is printed the web sses immediately through an oven. Heated air is withdrawn rough driers and is recirculated under motor-fan power. The nperature in the driers is 400°–600°. Paper is passed between illing rolls, the temperature of which is from 80° to 100° F. (M. Si.)

## rinting Office, U.S. Government.

The government printing office s created by congressional joint resolution 25, June 23, 1860. executes orders for printing and binding placed by congress d the departments, independent establishments and agencies of e federal government; furnishes, on order, blank paper, inks d similar supplies to all governmental activities; distributes vernment publications as required by law, and maintains necsary catalogues and a library of these publications; prints, for le to the public, such documents as are not of a confidential ture.

The total area occupied by the government printing office oper in 1947 was 1,396,973 sq.ft. or 32.1 ac. During the fiscal ear 1947 it was necessary to place orders with outside conactors for printing in the amount of $12,906,982.98, as the vernment printing office was unable to handle the volume of rinting ordered. The value of the office buildings in 1947 was 11,948,735.50; machinery and equipment $6,013,201.75; makg the total value of the plant $17,961,937.25. During the scal year 1947, there were 7,955 employees on the rolls with a ay roll of approximately $20,302,066.67. The office made harges for 340,808,858 copies of publications of all classes. his total included 6,313,605 copies of the *Congressional Record*, 4,867,982 copies of the *Federal Register*, 3,631,400 copies f specifications of patents, trademarks, designs, etc., and 350,-45 copies of the patent office *Official Gazette* and annual inexes. The number of postal cards printed amounted to 2,865,-85,000 and money orders, 291,091,150. The stores section and arehouses handled 3,393 carloads of paper weighing 173,814,-55 lb. The division of public documents mailed out 149,788,080 ublications and forms; its receipts from the sale of governent publications during the year amounted to $3,038,377. The tal charges made to congress and all other government gencies during the fiscal year were $53,009,753.69. (A. E. Gi.)

## riorities and Allocations.

The year 1947 marked the elimination of all but a estige of U.S. wartime priority and allocation controls.

As of March 31, 1947, congress revoked the general priority nd allocation powers except for a limited number of materials ecified in the First Decontrol act of 1947. At that time riorities assistance for the Veterans Emergency Housing proram was transferred to the Office of the Housing Expediter. ower to route materials and equipment, however, terminated n June 30, 1947, on passage of the Rent Control act of 1947.

Under the Second Decontrol act of 1947, controls other than ose relating to housing were transferred to the department of commerce, as successor to the Civilian Production administration. This act also empowered the department of commerce to issue priorities to obtain materials for export when required to expand or maintain foreign production of materials critically needed in the U.S.; and when the secretary of state certified that the action was essential in carrying out foreign policy. In both instances a finding of no undue adverse effect on the domestic economy was required.

By the end of 1947 controls over all but five commodities had been removed. Those still under control were rubber, tin, antimony, quinidine and cinchona bark and rubber.

Controls over rubber were used during a good part of 1947 to compel use of U.S.-made rubber in quantities deemed necessary for maintaining a synthetic industry in the United States, and to restrict the use of latex which was in short supply. The act was scheduled to expire March 31, 1948.

Complete control remained over tin metal. Import quotas were set by the Combined Tin committee, of which the United States was a member. Certain nonessential uses were prohibited, and all pig tin remained under allocation.

Authority for the control of antimony was also complete, although only the power of allocation was utilized. There were no end-use restrictions and imports were not controlled.

Quinidine, a vital drug in the treatment of certain forms of heart disease, was under complete allocation and its use was restricted to treatment of cardiac disorders. However, only quinidine originating in government stocks was so controlled. Controls over cinchona bark were used to permit the government to enter into toll agreements with processors of quinidine.

With the exception of rubber, controls on all the above materials were scheduled to expire on Feb. 29, 1948, unless extended by congress. A new form of control, the "Voluntary Agreement," appeared late in 1947 when congress authorized the president to make agreements for private allocation and inventory controls of scarce commodities. Any properly authorized participant was exempt from the provisions of the antitrust laws. The primary purpose of the act was to curb inflation. (*See* also Business Review; Price Administration, Office of.) (H. B. My.)

## Prisoners of War.

Although significant steps were taken during 1947 in the repatriation of prisoners of war, approximately 2,500,000 were still detained at the end of the year, approximately two-thirds by the Soviet Union.

Complete liberation of war prisoners was accomplished during 1947 by the United States, Belgium and Luxembourg—43,000 by the United States, 57,000 by Belgium and 4,000 by Luxembourg. Plans were announced for gradual repatriation of German prisoners by Great Britain and France; approximately 200,000 were released by each of those nations during 1947. No reports were available concerning repatriations by the Soviet Union. Yugoslavia released all of its 11,000 Italian prisoners during the year.

At the Conference of Foreign Ministers in Moscow, the Soviet Union reported 890,000 German prisoners held outside the soviet zone of occupation in Germany. The report made no mention of prisoners of other than German nationality, but it was estimated that the Soviet Union held more than 800,000 Japanese.

In an effort to reduce the number of prisoners but at the same time retain the benefits of their labour, the French government offered German prisoners in France the option of remaining in the country as free workers. No reports were available on the number accepting the offer, but approximately 400,000 were retained as prisoners of war at the end of 1947.

PRISONERS OF WAR leaving the guarded area of the former concentration camp at Dachau, Germany, in 1947. This group was the last held by the U.S. army's European command

Estimates and official figures of the number of prisoners still in captivity at the end of 1947 are tabulated below:

| *Country* | *Number and Nationality* |
|---|---|
| U.S.S.R. | 890,000 Germans |
| | 828,000 Japanese |
| France | 400,000 Germans |
| Great Britain | 255,000 Germans |
| Yugoslavia | 80,000 Germans |
| | 10,000 Austrians |
| Poland | 50,000 Germans |
| Czechoslovakia | 7,500 Germans |
| Total | 2,520,500 |

The International Committee of the Red Cross called upon detaining governments to repatriate war prisoners, citing humanitarian considerations and the provisions of the Geneva Prisoners of War convention of 1929. The committee also continued its efforts to revise the Prisoners of War convention. At a meeting called at Geneva, Switzerland, in March representatives of the principal Allied Powers devised tentative revisions for review at the International Red Cross conference scheduled to be held in Stockholm, Sweden, in Aug. 1948. (*See* also FEDERAL BUREAU OF INVESTIGATION; INTERNATIONAL LAW; RED CROSS; REFUGEES.) (P. E. R.)

## Prisons.

During 1947 the U.S. army's most modern disciplinary institution was opened at Camp Cooke, Lompoc, Calif. Patterned after the U.S. penitentiary at Terre Haute, Ind., its housing facilities include dormitories, honour rooms and inside and outside cells. It is unwalled, but is surrounded by guard towers and wire fences.

In California, work was commenced on a new jute mill at San Quentin, agricultural units were constructed at the institution for men at Chino, and pending the erection of three new institutions, portable metal buildings were used to relieve overcrowding at some of the prisons in the state. Florida announced that two new institutions were to be built, one for women, the other for male offenders under 25 years of age. Other states, including Massachusetts and Pennsylvania, also authorized construction programs, and in New Jersey it was announced that the antiquated state prison at Trenton would eventually be abandoned.

In many prisons educational facilities were expanded and provisions made for more expert instruction in both academic and vocational fields.

State operated convict camps for road work were ended by Georgia, but still remaining were about 89 county-operated camps which were subject to inspection by the state. Michigan, following the pattern set by other states and the federal system, inaugurated a course of instruction for new guards. And Missouri placed employees in correctional institutions on a civil service basis.

The American Prison association's *Manual of Suggested Standards for a State Correctional System* was distributed throughout the U.S. and many foreign countries. This manual, compiled by a special committee of the association, was a direct outgrowth of many requests by governors, penal officials and others for information concerning the rehabilitation of offenders and related problems. Among the subjects covered are: personnel, classification, medical services, employment, education, religious activities, recreation, discipline, probation and parole. Also filling a vital need was another publication prepared by the American Prison association: *A Handbook on Classification in Correctional Institutions.*

On May 31 a wartime order which permitted the federal government to buy goods produced in prisons was rescinded. (The law banning the use of convict labour on government contracts was suspended on July 9, 1942, in order to facilitate the manufacture of war materiel.) During World War II, when inmates produced millions of dollars worth of products for the armed forces, their morale improved. In 1947, many men behind the bars were idle—a condition hardly conducive to their rehabilitation. (S. A. L.)

**Great Britain.**—Legislation came before the house of commons in 1947 "to abolish penal servitude, hard labour, prison divisions and the sentence of whipping." The original bill of 1938 had been postponed because of World War II, but the intended reforms had been partly carried out; hard labour, *e.g.*, was finally ended as a condition of sentence when the rule that a prisoner should sleep the first fortnight of his sentence without a mattress was abolished. Prisons became badly overcrowded, because so many had passed out of use, while the number of persons serving prison sentences had grown to 18,200, the highest figure for 40 years. In August a second "minimum security camp" was opened on a farm near Ashford, Kent, where 50 good conduct prisoners from Maidstone jail worked on the land in almost complete freedom. A few escapes were made in 1947 from the first camp of this kind, at Tortworth, Gloucestershire.

The "open" system of detention was also extended in the Borstal organization for dealing with young delinquents. An Elizabethan mansion at East Sutton, Kent, was taken for an periment in rehabilitating 20 young women, who were given e freedom of 85 ac. of lawns and gardens and allowed to take rt in village social activities. Because of lack of suitable ac- mmodation and a long waiting list of young men sent to rstal by the courts, a number of them were placed in a sec- n of Chelmsford prison, but the Borstal institution at Dart- oor prison, an unpopular wartime measure, closed on April 16. here were further tentative efforts to adopt the use of psy- iatry to Borstal institutions, but the number of delinquents tually treated for abnormality was small.

Men and women undergoing preventive detention in British risons numbered 46, and steps were taken to ameliorate the nditions of the confinement of these habitual criminals. (*See* so CRIME.) (P. BN.)

**rivate Schools:** *see* EDUCATION.

**rizes of 1947:** *see* LITERARY PRIZES; NOBEL PRIZES; PUL- ZER PRIZES. *See* also ART EXHIBITIONS; CANADIAN LITERA- URE; MINERALOGY; MOTION PICTURES; SOCIETIES AND ASSO- ATIONS; THEATRE; etc.

**roduction, Industrial:** *see* BUSINESS REVIEW.

**rofits, Company:** *see* BUSINESS REVIEW; TAXATION.

**rogressive Education:** *see* EDUCATION.

**roportional Representation:** *see* MUNICIPAL GOVERN- ENT.

## rotestant Episcopal Church.

The year 1947, following upon the first ll year of peace, witnessed intensified activity by the Epis- opal Church in meeting its world-wide, as well as its domestic, esponsibilities. More than $7,300,000, contributed to its re- onstruction and advance fund, was appropriated for rebuilding he church in China, the Philippine Islands and Japan; and for dvance work in Latin America, Liberia and among the Negroes the United States. In addition, more than $1,000,000 was ised for world relief.

In response to a petition from the Philippine Independent hurch, popularly known as the Aglipayan Church, with about ,000,000 members, the house of bishops authorized and in- tructed the presiding bishop, Dr. Henry Knox Sherrill, to onsecrate 20 native bishops for that church—a significant step in church unity.

The statistics reported in 1947 showed the church to have attained an all-time high in several particulars: church members (all baptized persons) numbered 2,349,631; communicants 1,611,965. Baptisms increased 13.4% over 1946; confirmations 12.2% over 1946. Total contributions for the work of the church in the U.S. and abroad were $59,135,048—an increase of $6,123,655 or 11.5% over 1946.

Theological seminaries were again filled, and most of the new entrants were former veterans. The clergy numbered 6,443; parishes and missions 7,740. The upward trend in church school teachers and pupils, which began in 1944, was continuing: 51,158 teachers, an increase of 5.6% over 1946; 427,985 pupils, an increase of 5.8% over 1946. (*See* also CHURCH MEMBERSHIP.) (W. H. SE.)

NDUCTION CEREMONY at the Washington, D.C., cathedral as the Rt. Rev. enry Knox Sherrill (centre, facing camera) was installed as presiding bishop f the U.S. Protestant Episcopal Church on Jan. 14, 1947

**Protons:** *see* ATOMIC ENERGY; PHYSICS.

**Prunes:** *see* FRUIT.

## Psychiatry.

Psychiatry in 1947 looked forward to an expanding program in civilian life, with its field of interest embracing social problems. Long-time planning was suggested to inaugurate research, revamp medical education and change much of the current treatment of the mentally ill. A closer working relationship with the general field of medicine was visualized, since psychiatry was still handicapped by the necessity of maintaining specially organized hospitals which tended to keep out of contact with the general medical institutions.

During World War II at least 2,000,000 people, as the result of mental treatment of personality disorders in soldiers, had direct contact or relationship with psychiatry. One of the most important scientific results of the war was the spread of psychiatry into other fields. In general hospitals the neuropsychiatric service became of equal importance with the medical and surgical services. The war also brought out the importance of clinical psychologists and psychiatric social workers to the psychiatrist. In many instances, the psychologist and psychiatric social worker had never before had experience on a clinical team. The final result was the development of a congenial and efficient relationship in all three fields of psychiatric care.

**Education and Psychosomatic Medicine.**—The growing interest in psychosomatic medicine (*q.v.*) led to an evaluation of the teaching of psychology, both normal and abnormal, to medical students and doctors. It was proposed that psychiatry should have as much time allotted to it in the curriculum of a medical school as the departments of anatomy and physiology, although many problems had to be met before such a change could be made. The curriculum, already heavily overloaded, might require a fifth or even a sixth year to give the students an adequate course of psychiatry on these basic principles.

**Therapeutic Narcosis.**—Sodium amytal narcosis, extensively developed during World War II, was the subject of continued research in civilian practice. Sleep-producing drugs had been known from ancient times, although their value for specific purposes other than sleep had not been fully recognized until the 20th century. Bromide sleep was developed in 1900 by Neil Macleod in the treatment of acute mania. Great impetus was given to this form of treatment by Wiliam J. Bleckwenn in 1930, when the use of sodium amytal was suggested. During World War II, R. R. Grinker and J. P. Spiegel, using sodium amytal, introduced the term narcosynthesis. The development of this method was natural in view of the dramatic loosening of inhibitions and the unveiling of painful repression frequently observed in certain stages of etherization, alcoholic intoxication and delirium. Emphasis was placed in 1947 on the development of an artificial state of delirium by the use of sodium amytal administered intravenously. During this stage of toxic drug delirium the patients talked freely and often acted out some of their painful repressions. Most of the benefit followed the delirious abreaction, and less emphasis was placed upon narcoanalysis and narcosynthesis. Psychiatrists thought that the dissolution of the faulty personality behaviour and constructive recasting of the psychiatric problem probably occurred through improved physiological rest and a remobilization of thought processes during an irresponsible impersonal state of psychomotor activity which was temporarily out of volitional control, and was therefore always reintegrated at a more acceptable level.

**Lobotomy.**—Twelve years had elapsed since Egas Moniz carried out his history-making operation on the frontal association pathways of the human brain for the relief of certain intractable mental symptoms. He confined his efforts to operation on patients that were deemed irretrievable by conventional standards and developed the operation which was later called lobotomy. By 1947, thousands of lobotomies had been performed. Psychiatrists, however, were still unable to decide on the best method of operation or the most favourable type of patient. The criteria of selectivity were still only meagre and excessively weighted on the negative side. Operative techniques had not received sufficient critical evaluation in respect to operative topography, and the optimal value of the operation had not been reached in the absence of specific criteria of selection. The patients originally chosen by Moniz, of long-standing and hopeless outlook and refractory to every other method of treatment, were not now considered a most satisfactory type. The success of any procedure in psychiatry should be based on its application comparatively early in the course of the illness, and lobotomy was considered no exception. It was found that patients who were ill less than two years had a significantly more favourable outcome than did the older chronic cases. Mass lobotomy as a final refuge of a baffled psychiatrist was no longer recommended as a logical procedure. Positive criteria of selectivity and a more definite study of results on the basis of precisely what tracks had been severed in the brain, so that psychosurgery might become a valuable adjunct to psychiatric treatment, were the subject of research.

**Writer's Cramp.**—The nature of writer's cramp, often called scrivener's palsy or graphospasm, was studied in psychiatric patients. The importance of this subject lay in the fact that writer's cramp was included in England among the occupational disabilities under the Workmen's Compensation act. In the U.S. and France, where employers were not bound to pay compensation to workers suffering from this disability, its incidence was found to be negligible. Psychiatrists found after studying more than 1,800 patients that the condition occurred quite frequently in persons whose work did not involve much writing and came to the conclusion that instead of being an occupational disease, it was a symptom of a psychoneurosis. The cramp appeared in some patients even before they started to write, when they knew that their duties would involve a long period of such activity. It was found also that the condition was somewhat commoner in nonprofessional writers than in writers. The term writing disturbance rather than writer's cramp was preferred.

About 1 in 11 patients suffering from neuropsychiatric conditions showed some in-co-ordination of the muscles of the hand resulting in writing disturbances. These could be classified as tremulousness, spasticity or ataxia. All three forms occurred in psychoneurotic patients. Those showing the tremulous or wavy form of writing disturbance often suffered from an acute and severe anxiety neurosis based on severe stress, such as military action, unexpected or sudden awareness of marital infidelity, separation from the home and other causes of a similar nature. It was not uncommon to find a spattering of ink or perforation of paper as the nib of the pen caught in the paper.

The patients were treated successfully by continuous narcosis or by heavy sedation for a week or two. In some cases a modified insulin treatment was used. The spastic form (genuine writer's cramp) was characterized by tendency of the writing to become progressively smaller, but with the letters distinctly legible. All of the patients in whom the spastic form occurred were suffering from predominantly hysterical reaction, and they belonged to the shy, diffident type as opposed to the anxious, highstrung type of patient with tremulous disturbances. Most of the cramps were of long duration and treatment was not easy. Heavy sedation with or without insulin treatment sometimes was helpful.

The third group of patients in the psychiatric types showed ataxia or a jerky form of writing. There was irregularity in size and shape of letters as well as inequality of spacing between the lines. Persons in whom this form was seen were also suffering from predominantly hysterical reaction. They derived benefit from active exercise of the flexor muscles, since the condition was apparently caused by excessive contraction of the extensor muscles, the fingers being lifted too high. Organized physical training and games were helpful, but massage and exercises were not carried out in the physical therapy department, because such a procedure tended to fix the patient's attention on his disability. The physiogenic writing disturbances were those associated with structural disease such as chorea, disseminated sclerosis, paralysis agitans, parkinsonism, progressive muscular atrophy and various types of encephalitis.

**Marshall Islanders.**—A study of the way of life of the Marshall Islanders disclosed the absence of functional psychoses among them. Over a period of five years, when the Japanese had a careful system of medical recording, no affective psychoses were found, among the 10,000 natives. During the U.S. occupation, the islanders were neither aggressive nor competitive. They enjoyed the sensual side of life and despite average intelligence had little interest in intellectual pursuits. They took their simple pleasures one at a time and would eat their last handfuls of food without apprehension. This way of life gave rise to no conflicts, and the native found no need to run away from reality. Nudity had almost vanished and the natives had been given a sense of shame by the white man, but in the realm of instinctive behaviour the white man had been less successful. The natives did not recognize private property and land. Inheritance was matrilineal; under this system there was no illegitimacy and chastity was considered unimportant. The child was always welcome and never rejected and he approached adolescence in perfect freedom. Sexual matters were discussed freely and openly. This way of life led to an absence of functional psychoses, and observers were impressed by the lack of conflict and the need of escape from reality as causative factors in this state. (*See* also PHYSIOLOGY; PSYCHOLOGY; PSYCHOSOMATIC MEDICINE; PUBLIC HEALTH SERVICES.)

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## Psychology.

Perhaps the greatest single contribution of the reorganized American Psychological association during 1947 was its development of official standards for professional competence in psychology. Authorized by action of

A.P.A. in Sept. 1946, the American Board of Examiners in fessional Psychology under the chairmanship of Carlyle obsen was fully constituted and began to process about 1,200 lications from psychologists seeking certification in clinical, ustrial or personnel psychology. Certification by the Ameri- board in still other specialties was under consideration. The .A. division of clinical and abnormal psychology took inde- dent steps toward setting standards for certification in clini- psychology, as did certain states and state psychological or- izations. Uniformity and integration of certification proce- es were needed.

nother accomplishment of the reconstituted A.P.A. was its lishing activity. *The American Psychologist* had become the official "professional journal" of the organization. About other psychological journals and monographs continued to be lished by the A.P.A., of which a total of 25,000 vol. went to mbers and other subscribers in 1946; in 1947, 37,000 vol. re distributed.

eference should also be made to the way in which the new P.A., through its central office in Washington, D.C., aided h the public and the profession as an official bureau of in- mation and as a professional placement service. Because of growing leadership of the A.P.A. in the first of these func- ns, congress, governmental agencies, industries and private izens turned increasingly to the Washington office for advice ncerning a host of matters in the field of psychology. Started ring World War II as the Office of Psychological Personnel, placement service of the A.P.A. was instrumental in provid- assistance to many universities, governmental and military ganizations, industries and private agencies of various kinds in nnection with their personnel needs. Typical of the new positions of authority for psychologists was the chairmanship of the Committee of Human Resources, established by the Research and Development board in its program of co-ordinating research for the U.S. army, navy and air forces.

Many psychologists had emerged from their war work with an acute desire to learn what their colleagues had been thinking and doing for the past four years. Regular meetings of both regional and national societies had been curtailed for the duration of the emergency, with the result that the first postwar meetings were heavily and enthusiastically attended. In addition, symposia of various kinds were organized and conducted under a variety of auspices. Those sponsored by the department of psychology at Indiana university, Bloomington, Ind., and by the department of psychology at the University of Pittsburgh were typical. The latter resulted in a book, *Current Trends in Psychology,* which gave an excellent over-all picture of the directions in which various fields of psychology were moving. Symptomatic of the extent to which psychology had passed into new hands was the fact that all of the contributors to the University of Pittsburgh symposium were much less than 50 years of age.

Considerable professional interest and research in 1947 was centred on clinical psychology and its problems. The need for improved techniques of evaluating and validating the results of psychotherapy was stressed, as was the need for a theory of personality and a rational of therapy founded solidly upon the psychology of learning.

Precise measurement and statistical interpretation of the results of psychotherapy might, ultimately, do much to take the guesswork out of clinical psychology. In 1947, however, few inspirations seemed forthcoming. It was conjectured, tentatively, that at least one source of advance would come from the new tendency to speak of statistical error "of the first order" and "of

E-WAY OBSERVATION DOME in the Child Development clinic headed by . Arnold Gesell (centre) at Yale university. Cameraman outside the dome ft) is shown recording a child's behaviour, in 1947, for later study the second order"; *i.e.*, of the error, or danger, not only of accepting as valid a hypothesis which is factually wrong, but also of rejecting as invalid a hypothesis which is factually right. Psychologists might, in any event, expect to hear more about this distinction in the future.

A number of learning theorists were concentrating upon the two important areas of "secondary reinforcement" and language.

For a long time psychologists interested in problem-solving, or trial-and-error, learning used primary drives, such as thirst, hunger, heat, cold, etc., to the exclusion of other types of problems. And those psychologists interested in associative learning, or conditioning, mistakenly conceived of conditioned responses as including, not only emotional, or physiological, reactions, but any type of overt behaviour which occurred following the presentation of a signal or so-called conditioned stimulus. It now appeared that conditioned responses, strictly speaking, are exclusively emotions—appetites, fears, etc.—and that the overt behaviour instigated by these secondary drives follows the familiar principles of problem-solving.

Thus, it emerged that there are three levels of learning: trial-and-error learning whereby the solutions to primary drives, or problems, are acquired; emotional conditioning, whereby the secondary, or acquired, drives come into existence and trial-and-error learning whereby the organism acquires solutions to these acquired, or emotional, problems. But fundamentally there appeared to be only two basic learning processes: trial-and-error learning (involving both primary and secondary drives) and conditioning.

In 1947 a remarkably large number of studies concerned the selective acquisition of behaviour on the basis of the lessening or elimination of emotional tensions which it affords. This work on the reinforcement, or learning, of specific overt responses through the resulting reduction of secondary drives (hence, the expression "secondary reinforcement") did much to bring scientific learning theory into contact with clinical psychology. It is in the latter area that one is predominantly concerned with the habits which human beings have acquired because they resolve emotional problems, however unrealistically.

No adequate understanding of the functioning and acquisition of language is possible, in terms of learning theory, until secondary reinforcement has been carefully investigated. The number of books and technical articles which had begun to appear on the topic of language suggested that psychologists had mastered at least the rudimentary principles of the problem.

As psychologists' interest in learning advanced and broadened and as psychotherapy became a growing part of their concern, attention was focused with renewed emphasis upon what may be rather loosely referred to as man's moral problems. As long as a psychologist restricted himself to laboratory studies of the sensory processes or of reflexes, he might, with some justice, insist that he was not interested in values, ethics, "shoulds" and "should-nots." But as soon as he begins to listen clinically to psychoneurotics, he is confronted by an imposing array of moral issues which he cannot, without an admission of grave professional incompetence, possibly sidestep. The upshot of this situation was that psychologists began to examine such concepts as responsibility, choice, guilt, blame, freedom and will in a way they had not done since psychology began to split off from philosophy more than half a century before—to be more precise, in a way they had never done, for they were now returning to old problems with many new insights and scientific facts which neither they nor the philosophers formerly possessed.

A notable investigation of 1947 was the work of Alfred S. Kinsey on human male sexual behaviour. Although representing a culmination of the labours of many specialists extending over a number of years, it was in 1947 that this research had its first powerful impact upon the public. Kinsey's *Sexual Behavior* *the Human Male,* based upon data obtained from more th 12,000 personal interviews, was published, with the comment the *New York Times* that "after decades of hush-hush, this bo is sure to cause an explosion." (*The New York Times,* Jan. 1948.) (*See* also PHYSIOLOGY; PSYCHOSOMATIC MEDICINE.)

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## Psychosomatic Medicine.

Psychosomatic (*psych* spirit and *soma:* body) w a new term in 1947, but it described an approach to medici as old as the art of healing itself. It is not a specialty b rather a method of diagnosis and treatment which applies to a aspects of medicine and surgery. It does not mean to study t *soma* less; it only means to study the *psyche* more. Its subje matter—which aims to discover more precisely the nature emotional-bodily relationships—is founded on the importa advances in physical medicine as well as on the discoveries psychoanalysis. The latter science bears the same relationsh to mental functioning that the microscope does to the physic structure of the body.

Psychosomatic concepts received a great deal of attention a result of the medical experiences of World War II. The larg number of psychoneurotic individuals discovered in the selectiv service process and the disabilities caused by emotional facto in military training and combat impressed every physicia Indeed, it might well be said that World War I establishe psychiatry on a firm scientific basis and World War II saw i more complete integration into general medicine.

William C. Menninger, director of the neuropsychiatry co sultants division in the surgeon general's office during Wor War II, reported in 1947 on the high incidence of emotion factors among the heart and gastrointestinal cases in milita hospitals. Approaching the problem from another angle—th incidence of physical complaints in psychoneurotic disorders— he quoted Dr. N. Q. Brill, who found 29% psychogenic gastr intestinal reactions; 14% cardiovascular reactions; and 9 rheumatic reactions among 585 unselected cases of psych neurosis seen in army general hospitals. Civilian medicine als found that the gastrointestinal tract shows the highest inciden of bodily reactions to emotional tension. Why this is so b comes apparent when we consider that the infant's first conta with the world is through the mouth, so that the processes feeding and feeling must relate themselves to one anothe Therefore, upon the love and security or anxiety and insecurit which become associated with the nursing process will depen many of the psychosomatic relationships of adult life, calle forth by events which awaken old associations.

Menninger paid special attention to four groups of disorder representing different bodily systems, which reflect the em tional maladjustment of the individual—cardiovascular; gastr intestinal; individuals with various aches and pains, frequent referred to as rheumatic; and the allergies.

Another problem frequently encountered in military medici was low-back pain. It is also a common cause for disability civil practice. B. B. Stimson, working with a group of specialis interested in this problem, showed that in addition to a variet of physical factors that may be responsible, emotional proble are also concerned in this form of disability. A considerab number of patients present no evidence of organic findings the general physical examination and in addition the X-rays a essentially negative. These are the patients who present a ve at problem but with the help of the physician, the psychi- ist and the physical medicine expert, most people can be ped. A large number of the patients with psychoneurosis o had low-back complaints were ex-servicemen.

E. Weiss studied 40 patients with so-called psychogenic rheu- tism encountered in a larger study of 200 patients with ronic fatigue. He observed that this group of patients com- in of aches and pains in the muscles and joints, in addition chronic fatigue, and often have slight elevation of tempera- e. If too much attention is focused on this slight fever, ich is insignificant, and the patient undergoes a great deal of dical investigation, invalidism is exaggerated. Psychosomatic udy showed that these patients had significant emotional con- ts and that marital maladjustment was a frequent underlying oblem. Chronic resentment, of which the patient was usually ally unaware, produced a state of tension which reflected elf in the musculo-skeletal system, causing so-called mus- lar rheumatism.

Impressed by psychologic factors in allergic disorders, J. H. itchell and his associates studied 600 consecutive cases of the mmon allergic disorders seen in private practice and com- ented that those who failed to give skin reactions in being sted allergically are also the ones who present multiple com- aints (in addition to the allergic symptoms), whereas the tients with positive skin reactions to allergic substances or- narily do not have such a variety of complaints and respond ore readily to treatment. Upon analysis the negative skin action and multiple complaint group show definite evidence psychologic maladjustment. (*See* also PUBLIC HEALTH SERV- ES.)

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**ublic Assistance:** *see* CHILD WELFARE; RELIEF; SOCIAL ECURITY.

**ublic Buildings Administration:** *see* FEDERAL WORKS GENCY.

## ublic Health Engineering.

**Water Supply.**—Developments in public health ngineering during 1947 were characterized by a number of ndertakings of unprecedented size. The water filtration plant Chicago completed one year of operation. The plant, with a apacity of 320,000,000 gal. per day, remained the largest plant the world; it served 1,350,000 people.

Philadelphia authorized the construction of an ozonation lant for the purification of 36,000,000 gal. a day. In terms f daily ozone generating capacity (1,250 lb.) this plant would e the largest in the world.

In Egypt about 23,000 cases and 11,000 deaths from the holera epidemic of 1947 were dramatic reminders of the results f failure to provide for masses of population the elements of a afe water supply and of a sound disposal of human excreta. It as one of the heaviest onslaughts of a disease caused by de- ective sanitation that the modern world had seen.

The United States public health service released a compila- on of disease outbreaks caused by impure water in the eight ears from 1938 to 1946, inclusive. More than 114,000 cases nd at least 84 deaths were attributed to water-borne causes. urface pollution of shallow wells retained its primacy as the ause of the greatest number of these outbreaks. On the basis f the total number of cases, however, surface pollution of wells as eclipsed by cross connections and other defects in the distribution system, failures in water purification processes and the use of untreated polluted water.

The application of fluorine to public water supplies was extended during 1947. The addition of this chemical for the prevention of dental caries, particularly in children, was practised in Brantford, Ont.; Evanston, Ill.; Grand Rapids, Mich.; Midland, Mich.; Newburgh, N.Y.; Sheboygan, Wis.; Marshall, Tex., and Ottawa, Kan. All of these operations were in the nature of controlled experimentation. The findings on procedures and their effects upon the exposed populations would not be completely assayed by observers for at least five years.

At Miami, Fla., one of the largest lime-recovery plants was being developed for the salvaging of lime used in the softening of its water supply.

Interest in the corrosion of pipe and other facilities used in the water works industry was renewed because of an investment of more than $5,000,000,000 in this industry. More than $500,000,000 were being collected annually for this service. Since more than 24,000,000 tons of cast iron pipe, valves, hydrants and fittings had been installed by 1940 in the United States alone, this mass of cast iron was being given detailed review. It was estimated that more than $40,000,000 per year might be charged against corrosion of water mains in the United States.

On Nov. 7, the Metropolitan Water board's new reservoir at Staines, Middlesex, England, was inaugurated. This would contain 4,466,000,000 gal., its length being 2,037 yd. and its maximum width 962 yd., the total area being approximately equal to that of Hyde park. Begun in 1937, work had been interrupted by World War II.

New British water supply schemes included that of the Metropolitan Water board for construction of works and purification plant at Ashford common, Middlesex, at a cost of £4,290,000. Cumberland county council planned new water supplies from Calderhead to serve Maryport, Penrith, Wigton and Cockermouth (£1,700,000). Negotiations were instituted by the Orkney county council for the purchase of water installations built by the admiralty, as part of its £1,000,000 scheme to provide water in the islands.

**Sewage.**—The outbreak of poliomyelitis in England focused attention again on the significance of human sewage in relation to this disease. Since this was one of the most intense outbreaks of the disease in England in 25 years, it afforded an opportunity to test a number of virus considerations. The virus was demonstrable and persisted in the stools of half the patients for two to four weeks after the onset.

In the United States, the severe epidemic of poliomyelitis in Wilmington, Del., apparently was not materially curtailed by widespread DDT dusting for the control of flies. The relationship of the epidemic to sewerage and sewage disposal remained indefinite and inconclusive. (*See* INFANTILE PARALYSIS.)

In this period of high demand for fertilizer materials, interest in both garbage and sewage sludge as sources of fertilizer was intensified. Experimental work proceeded with unusual speed in England, in the United States, in Africa and in China. The significance of trace elements in such materials was still to be evaluated on detailed country-wide sampling.

In Scotland, Glasgow corporation put forward a sewerage scheme costing £1,736,000. Other important British projects included: the Birmingham Tame and Rea District Drainage board undertaking to improve the river Tame before it reached Birmingham. It was proposed to concentrate sewage disposal from the "Black" country to a new works at West Bromwich at a cost of £4,000,000. Among others, Nottingham corporation had a sewage disposal scheme at Stoke farm, the estimated cost being £1,170,000.

Modern sewerage installations were gradually making their way into remote areas of the world. The installation in Chungking, China, of a sewerage system was accomplished on the argument that the savings in coffins would pay for this sanitation improvement in 19 years. The lack of sewers was estimated to be responsible for about one-fifth of the deaths in that city, where an annual death rate of 30 per thousand prevailed.

**Food.**—Milk and dairy products continued to receive detailed study. The effects on the nutritive values of such dairy products by engineering techniques were evaluated. No generalization on the all-round stability of the nutrients was possible. Riboflavin, for example, is remarkably stable, except when it is acted on by light and this effect is accelerated by heat. Ordinary processing and handling of the products, however, have virtually no effects on certain of the other nutrients

The control of shellfish and shellfish waters was reviewed in the search for more efficient indicators of pollution and biological purification.

**Air.**—Radioactive substances created challenges in industrial hygiene and atmospheric pollution. The nuclear fission pile had become a radiating source for large amounts of potentially dangerous radiant energy. The preparation, transportation and use of many isotopes, formed as by-products of the pile, gave rise to a new set of control problems in the engineering field. Neither the nature of these effects nor the details of their control were satisfactory.

Studies of the use of glycols in air disinfection demonstrated that this method had far more complexities than was originally supposed. Size of droplets and the humidity of the air in which these were dispersed had important effects.

Unusual problems of atmospheric pollution were exemplified by the finding in Baltimore, Md., of lead poisoning in attendants working in shooting galleries. The spattering of bullets increased the lead content of the air sufficiently to cause lead poisoning in those exposed during working hours. Customers operating for only short intervals of time were not affected.

**Insects and Rodents.**—Field operations continued on the use of Antu and 1080 for rodent destruction. The experience was already sufficient to demonstrate that chemical destruction alone would not solve the problem. Structural building out of rodents and more careful protection of food in storage remained essential prerequisites to lower rodent populations.

A rare skin disease reported in Baltimore was diagnosed as "grain itch." Of 27 broommakers in a 60-year-old factory, 12 had the disease, caused by a mite infesting the straw from which the brooms were manufactured. (*See* also EPIDEMICS; PUBLIC HEALTH SERVICES.) (AB. W.; X.)

## Public Health Services.

**Cancer.**—Great assistance was given to the U.S. cancer control program by increased funds made available by the federal government through the Public Health Service act of July 1944. The act authorized the surgeon general of the U.S. public health service, through the National Cancer institute and in co-operation with the National Advisory Cancer council, to conduct and assist research and investigations relating to the cause, prevention and methods of diagnosis and treatment of cancer, to provide training and instruction in technical matters relating to diagnosis and treatment of the disease, award fellowships in the institute, co-operate with state health agencies and procure, use and lend radium. As the result of this act, cancer research and cancer control were greatly stimulated.

More cancer detection centres and tumour clinics were established in 1947, and undergraduate and postgraduate professional education was strengthened. Provisions were made for increased facilities in hospital diagnosis and treatment of patients. (*See* also CANCER.)

**Tuberculosis.**—Several notable advances were made in the knowledge and techniques necessary for effective control of tuberculosis. Increased case findings by means of the newly developed photofluorograph machine, wherein chests of as many as 1,000 persons a day could be examined through one machine, gave a tremendous impetus to mass radiography.

Mass X-ray examination of large population groups repeated periodically had proved to be a sound public health method of discovering tuberculosis. Under this method, new and hidden cases of tuberculosis were discovered constantly, and the necessary public health control measures were applied.

Drugs in the prevention and treatment of tuberculosis, BCG (Bacillus-Calmette Guérin) vaccine and streptomycin, were studied further during 1947. M. I. Levine stated that in spite of the fact that results with the use of BCG vaccine had been scientifically inconclusive, the consistency of favourable reports seemed to indicate that the vaccine has a certain degree of efficacy and that its use is safe. The continuance of BCG vaccine research, however, was essential before it could be fully accepted as a public health measure.

Streptomycin, an antibiotic isolated from certain species of soil, had become the drug of promise in laboratory and animal trials. Although no extensive control experiments had been performed, preliminary results with streptomycin gave hope of suppressive action even in tuberculosis meningitis and miliary tuberculosis. (*See* also TUBERCULOSIS.)

**Mental Hygiene.**—The concept of mental illness as a public health problem, while not new, had been rather slow in gaining general acceptance, since people had been inclined to think of mental disorders as phenomena peculiar to isolated individuals. However, the prevalence of mental illness and its costliness qualified it as a public health problem, necessitating public responsibility for its prevention and reduction.

Under the National Mental Health act, the U.S. public health service was authorized to make grants-in-aid for research directly to universities, hospitals, laboratories and other public and private institutions and to qualified individuals. The act also authorized establishment of a National Institute of Mental Health in the Washington area, where co-ordinated studies would be conducted in the many sciences which bear upon the problem of mental health.

In 1947, congress appropriated $3,000,000 to be allocated through the states for the appraisal and study of the states' mental health needs and as resources for the establishment and expansion of community clinics and for training programs for physicians, nurses, social workers and educators. (*See* also PSYCHIATRY; PSYCHOSOMATIC MEDICINE.)

**Infectious Diarrhoea of the Newborn.**—The control of infectious diarrhoea among the newborn, as established in the Chicago health department, was accepted as a standard public health measure and used as a pattern by hospitals and health organizations throughout the world. Cases among infants continued to be controlled by the more efficient and wider application of the following public health measures: prevention of overcrowding in nurseries; adequate nursing personnel; proper technique in the care and feeding of babies; individual clothing, linen and utensils for each infant; immediate isolation of infants suspected of having any infectious disease; separate nursing personnel and facilities for such isolated infants.

**Care of Premature Infants.**—New techniques and standards in the care of premature infants had done much to reduce the death rate. Among these techniques were the following: reporting of all premature infants within an hour after birth; provision of especially trained personnel; assignment of specially trained graduate, registered nurses to the cases in every hospital nursery; equipment of every nursery for temporary care; estabhment of breast milk stations; establishment of stations to lminister scientific care; provision of ambulances with spe- ally trained nurses and equipped with incubators and oxygen, ailable 24 hours per day for the immediate transportation of emature babies born either at home or in hospitals.

**Venereal Disease.**—Case-finding techniques were intensified reach the undiscovered thousands who had become infected it were not receiving treatment—an estimated 155,000 persons ith infectious syphilis and 825,000 with gonorrhoea. (*See* also ENEREAL DISEASES.)

**Other Health Programs.**—There were reports during 1947 at the use of influenza A and B vaccine had been of some ophylactic value in studies among controlled population oups.

Reports also indicated a slight increase in the incidence of phtheria, and increased fatality rates in the over-30 age groups. hether this was due to loss of immunity or to introduction of e more virulent strain of diphtheria bacillus, or whether new btypes of the diphtheria bacilli were not covered by the avail- le antitoxin, was difficult to determine. However, renewed and gourous efforts to inoculate children against diphtheria had ecome of extreme importance.

Epidemiological studies were made during 1947 to discover e manner of spread of poliomyelitis. A study by F. B. Gordon, . M. Schabel, Jr., A. E. Casey, W. I. Fishbein, H. N. Bundesen nd Margaret Abendroth showed that poliomyelitis is spread in ontact infection, by means of the poliomyelitis virus present the throat and mouth. (*See* also EPIDEMICS; FEDERAL SE- URITY AGENCY.)

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**Great Britain.**—The latest vital statistics published for Eng- and and Wales in 1947 concerned the previous year. The num- er of births was 820,000 (680,000 in 1945), and the number of eaths, 492,090 (488,108 in 1945). The infant mortality rate as 43.0 per 1,000 related live births, a rate well below that of ny preceding year. The fall in the maternal mortality rate con- inued and reached the low level of 1.43 per 1,000 total births 1.80 in 1945). Deaths from all forms of tuberculosis were 2,847 (23,955 in 1945); the decline in mortality from this dis- ase continued. The number of notified cases of diphtheria was 1,896 and of deaths 472 (18,596 cases with 722 deaths in 945); the death rate under 15 years of age was 4.0 per 100,000 6.7 in 1945 and 28 in 1941): these favourable results were ttributed to mass immunization of children. Scotland, with an stimated population of nearly 5,000,000 (Dec. 1945), also howed signs of improving health. Rates for still births, ma- ernal mortality and infant mortality in 1946 were the lowest ver recorded, and deaths from tuberculosis were fewer than hose of 1945.

The chief epidemic of 1947 was that of acute poliomyelitis. It was widespread throughout Great Britain, and the prevalence eached the highest figure ever recorded there. Bulbar and espiratory paralysis and meningeal reactions preceding paral- ysis were more common than usual. The ministry of health ssued a special memorandum on the subject, arranged for spe- ial pathological investigations and sponsored a short film on arly diagnosis to be shown to doctors; London teaching hos- itals set up special treatment units for patients in the acute tage.

There was little public health legislation in Great Britain dur- ng the year; the Penicillin act and regulations of the ministry of health concerning streptomycin were framed for the proper control and use of these therapeutic agents. Substantial progress was made toward providing the nation for the first time with a comprehensive health service. After the passing of the National Health Service act in Nov. 1946, the ministry of health began to set up the necessary advisory and administrative machinery and make plans for the services required. The service was to begin on July 5, 1948.

**Europe.**—Diphtheria was prevalent on the continent of Europe, but the freedom from severe epidemics generally was remarkable. A discussion at the Royal Society of Medicine in May 1947 gave accurate information concerning the successful methods taken to control epidemic disease, especially typhus, and to provide a medical service in the British zone in Germany. In Greece aircraft were used to spray Athens with DDT as a precaution against the spread of the autumn cholera epidemic from Egypt.

**Egypt.**—An outbreak of cholera in the provinces in autumn became a serious epidemic. The Egyptian government requested the U.S. and British governments for supplies of anticholera serum; the country was declared an infested area, and neighbouring countries took strong measures to prevent spread of the disease. By the end of October the daily death rate was about 400, but by November, in the seventh week of the epidemic, it was waning. (A. S. My.; X.)

**Public Housing Administration:** *see* HOUSING.
**Public Housing Authority, Federal:** *see* HOUSING.
**Public Libraries:** *see* AMERICAN LIBRARY ASSOCIATION; LIBRARIES.

## Public Opinion Surveys.

The year 1947 was one in which public opinion survey work broadened to the point at which more than half of the earth's population was brought within the range of some well-established survey organization, and in which surveying was given depth and variety through the efforts of a far larger number of social scientists than had ever before attended to it seriously.

**National Polls.**—In Japan public opinion surveying received acknowledgment as a tool of government. A section on public opinion research was attached to the cabinet and approximately 60 surveying organizations were reported to be active. These groups ranged from one-man enterprises making their first survey to large organizations that had completed more than 25 national samples in a little more than a year of existence. All kinds of political, economic and social questions were covered, providing an unusual picture of a people in transition and under great stresses.

Many of the other national polls were also being used to reveal the structure of habitual social thinking as well as to define opinions on current news events. In Switzerland, where the wide variations in language from valley to valley present a special polling problem that had been laboriously met, opinion surveyors clearly established the political status of women. About 90% of the people thought women should vote for town officials, about 60% thought they should vote for cantonal officials, but only 20% wanted women to vote for federal officials. Twice as many Swiss wanted women to vote as wanted women to hold political office.

Most of the newer national polling agencies throughout the world engaged in market research as well as in opinion surveying and also made special economic and statistical reports from government and private data. While these activities are often forced by the need to offer a sufficient range of service to support a full-time staff, they tend to give a broader vision to the agencies so operating.

**Professional Groups.**—The year was marked by high activity in professional organization. In January representatives of European polling agencies met for three days in Paris and formed an International Commission on Public Opinion. In May, chiefs of the ten national institutes affiliated with the American Institute of Public Opinion (Gallup polls) met for a week at Loxwood Hall, Sussex, England, formed their own international association, and agreed to conduct a number of simultaneous polls on the same international topics. In September at a general international conference on public opinion held at Williamstown, Mass., a World Congress on Public Opinion Research was set up under a provisional constitution. At the same time an American Association for Public Opinion Research was formed to develop standards and to extend the methods and scope of the field.

**Sponsorship.**—The National Opinion Research Center moved from Denver, Colo., to Chicago, Ill., leaving behind it an affiliated centre devoted principally to regional study. The National Center became affiliated with the University of Chicago.

The reliance of public opinion research on journalistic and business corporation sponsorship remained a characteristic of the field. Henry Ford II announced the completion of an employee attitude study conducted by Elmo Roper and reaching results often unflattering to the management. Policy changes were made accordingly. There was, however, a notable increase in the sponsorship offered by governments and universities. Prominent among governmental sponsors were officials in Japan, Czechoslovakia, Hungary, Switzerland and the U.S. military government in Germany. Work at established university centres of public opinion research, such as Harvard, Princeton, Michigan, Chicago and Minnesota was expanded, and co-operative programs were launched in collaboration with the Social Science Research council.

Williams college, Williamstown, Mass., offered an interesting example of the building of public opinion study into the general education program of a small college. There a faculty member versed in the subject was appointed to bring his knowledge and library resources to bear on appropriate problems offered in the teaching of political science, history, economics, anthropology and other divisions of the social sciences. He was not held responsible for a separate public opinion teaching and research program, but rather was called upon to integrate the new methods into the older disciplines.

**Publications.**—Opinion survey organizations became so numerous and so widely scattered around the world that during the course of the year several lists and directories of them were issued or in process of compilation. One list was compiled by the American Marketing association. Another was contained in the mimeographed invitation and attendance lists of the Williamstown conference.

The Institute for Studies in Public Opinion and Attitudes of Mexico City announced a directory containing data on 400 specialists in the field, including accounts of surveys recently completed.

*Opinion News,* published by the National Opinion Research Center, was put on a regular twice monthly schedule and expanded to include current news of the opinion research field and to publish findings of the major surveying agencies. *International Journal of Opinion and Attitude Research* began quarterly publication at Mexico City under the auspices of the Institute for Studies in Public Opinion and Attitudes. It carried articles on surveying problems by authorities drawn from many parts of the world, but written in English. References to survey work and extended discussions of it became during the year an accepted commonplace in magazine articles and books on public affairs. (R. Wd.)

**Public Roads Administration:** *see* Federal Works Agency; Roads and Highways.

## Public Utilities.

During the early months of 1947 public utilities continued to be subject to pressure from commissions and consumers for rate reductions. As increases in wages and materials cut down the margins of net income available for rate reductions, however, the trend of commission activity was toward approval of rate increases, particularly in the telephone and local transport industries.

These readjustments in rates renewed interest in the basis used by state and federal commissions to determine increases or decreases in rates. It should be recalled that the judicial formula dating from the *Smyth* v. *Ames* case of 1898, requiring commissions to make findings of a fair return upon a fair value, was substantially relaxed by the U.S. supreme court in 1942 in the Natural Gas Pipeline Co. case. The complete rejection of the fair value rule in the Hope case of 1944 and in the Panhandle case of 1945 was accompanied by a sanctioning of the use of the net investment rate base by the Federal Power commission. As the law stood during 1947, it was no longer a concern of the courts whether rates were based upon investment or reproduction cost. Administrative agencies had acquired a new freedom to use their discretion, so long as they acted upon "substantial evidence" and the "end result" of their rate-making was not confiscatory.

**Legislation.**—The year was not especially productive of legislation concerning public utilities except in their labour relations. The Gwynne act imposed a federal statute of limitations of two years on back claims for damages against employers arising out of violations of the Fair Labor Standards act, and also outlawed all claims to portal-to-portal pay except under circumstances where such payments were customary or where employers could not show good faith. The Grant act merely extended excise levies on telephone, telegraph and electric-lighting service and on passenger fares, leaving the question of their ultimate disposal to a future congress.

The most controversial legislation, passed over a presidential veto, was the Taft-Hartley act. This act together with state legislation of similar import came in large part as a legislative response to prolonged strikes of the employees of public utilities, notably the telephone strikes and the prolonged walkout of electrical workers at Pittsburgh, Pa.

Although there were variations from state to state, the laws generally were designed to prevent strikes against public utilities. Their rigour varied from a mild statute to prevent violence and sabotage by pickets as in Texas to full-fledged compulsory arbitration as in Missouri. Ten states (Florida, Indiana, Michigan, Missouri, Nebraska, New Jersey, Pennsylvania, Texas, Virginia and Wisconsin) restricted strikes against public utilities. The severest restraints, after a preliminary trial and failure of mediation, provided for seizure and operation of properties by the governor, with prohibition of strikes during state control under penalty of loss of seniority and other employment rights by strikers, and fines assessed against labour unions and their officials. Disputes were to be settled by arbitration findings made by a special board. Lockouts by management were similarly prohibited.

At least 12 states (Arkansas, Arizona, Delaware, Florida, Georgia, Iowa, Nebraska, North Carolina, South Dakota, Tennessee, Texas and Virginia) took the further step of prohibiting both the closed shop and union shop. The Taft-Hartley law, while outlawing closed shops, authorized union shops if voted by a majority of employees. It categorically forbade boycotts, jurisdictional strikes and strikes against the government. Besides forbidding a number of labour practices and other union jectives relating to the employment relation generally, the ft-Hartley act was particularly important to public utility lustries in its prohibition of strikes affecting national health d safety. Strikes on railroads did not come under Taft-Hart-y provisions, but practically all other public utility strikes ght be thus controlled if the president deemed that national erests were imperilled.

**Federal Projects.**—The changed political complexion of con-ress had an effect upon appropriations for the further develop-ent of federal-power projects. In the interests of economy, e requests of the bureau of reclamation, the Bonneville Power ministration, the Southwestern Power administration, the ower division and the Oil and Gas division in the department the interior were cut from $170,729,000 to $98,574,438. A arked objective of the congressional economy was transmis-on lines. The Tennessee Valley authority was cut from $47,-0,000 requested to $18,700,000 appropriated. Rural Electrifi-tion administration funds for lending operations were cut om $250,000,000 to $225,000,000. The army engineers were ven $231,800,825 for flood-control projects which included ower. TVA was required to repay about $350,000,000 of its ower investment within 40 yr.

**General Operations.**—Despite evidences of a slowing up in deral promotion of the publicly owned segment of the electric-ower industry, electricity production and sale was carried to e highest performance records in its history. Generating ca-acity was in excess of 51,600,000 kw. with the relative propor-ons of water-power and fuel-using plants remaining about the me. Energy output increased to more than 255,000,000,000 w.hr. with sales and number of customers showing correspond-g increases.

A significant increase was shown in the expansion of the U.S. lephone plant. Slowed up by the war emergency the growth in lephones in service was from 21,600,000 in Dec. 1944 to 27,-30,000 by Oct. 1947 for the Bell system alone. This repre-nted about 80% of the total for the whole country. Unfilled rders for telephones, however, continued large in number 1,900,000 in Sept. 1947) because of the unavailability of witchboard capacity and outside plant in certain localities. lsewhere, in local transit service and in the expansion of natu-al-gas service, although some of the arrearages caused by World Var II were being made up, much work remained to be done at he close of 1947. Natural-gas transmission lines to the Pacific oast and into the middle western markets were the most im-ediate needs. (*See* also TENNESSEE VALLEY AUTHORITY.)

(M. G. G.)

**Canada.**—For a time during 1947 there was a threatened ationing of consumer gas in southern Ontario. At the end of uly the Prince Edward Island government placed all petroleum sed for heating and fuel in the public utility category because cute shortages were anticipated.

In New Brunswick the provincial government passed special egislation to control striking coal mines which supplied fuel for ower generation. The N.B. Electric Power commission expro-riated the generating and distributing facilities of the N.B. ower Co., including water-power rights on company-controlled ivers. In Quebec, controversy continued over the expropriation f three private companies by the Quebec Hydro commission. A nancial settlement was still uncompleted by the end of the ear.

Construction of additional commission power plants went orward in several parts of the province. In Ontario 7 large ydroelectric commission developments were under construction, nd 900,000 h.p. of new electric energy was in prospect. The lant at Decew Falls in southern Ontario came into operation, roducing 70,000 h.p.

On June 1, 1947, the Saskatchewan government set up a new crown corporation, the Saskatchewan Government Telephones. The former department of telephones retained only its regulatory functions.

The Canadian National railways remained the biggest public utility in Canada. During 1947 its gross revenue was $436,883,000, largest in its history, but increased operating costs left the railways with less net revenue than in 1946. (C. Cy.)

**Great Britain.**—Shortage of coal and the severe winter of 1946–47 affected gas and electricity supplies. Beginning Feb. 10, electricity supplies to industrial consumers in most parts of Great Britain were cut off, and domestic supplies were cut from 9-12 A.M. and from 2-4 P.M.; consumption of electricity was made an offense under Defense regulation 55. Most of these restrictions ended by the first week in March. During the same period coal stocks for the gas industry had fallen to less than two weeks' supply in hand and gas pressure to consumers was sometimes reduced, although supplies were not cut off. On April 24 the minister of fuel and power announced that as from May 5 no heating would be allowed in industrial and commercial premises until the end of October, and no gas or electric heating in homes until the end of September.

Active steps were taken to increase the supply of electricity, and to provide for the construction of 18 new power stations by the winter of 1950. Important projects included the new Bankside power station, London, and the £3,150,000 Glen Shira scheme in Argyllshire, Scot.

Domestic water supplies in many parts of Great Britain were affected by dry weather continuing into the autumn. Towns relying on catchment areas were the most acutely threatened, and engineers stated that at least 20 in. of rain were needed before normal supplies would be available in several parts of the north, reserves at Manchester being particularly low. The possibility of water rationing was seriously considered by the authorities.

**Europe.**—Other countries with new electricity schemes included the River Erne project in Eire, estimated to increase the output of the Electricity Supply board by 50%; Portugal and Switzerland, where important developments of hydroelectric power were made. There, however, as in Norway, shortages were caused by the exceptionally dry summer. In the U.S.S.R., a network of power stations was expected to supply Moscow with twice as much electricity as in 1940. This would be augmented by hydroelectric stations being constructed on the Moscow-Volga canal and elsewhere. At the end of five years the output of the Urals' power station would be five times that of all electrical stations in prerevolutionary Russia. (*See* also DAMS; ELECTRICAL INDUSTRIES; LAW; RAILROADS; RURAL ELECTRIFICATION; TELEGRAPHY; TELEPHONE.) (J. LN.)

**Publishing (Book):** *see* BOOK PUBLISHING.

## Puerto Rico.

A U.S. insular dependency in the West Indies; area 3,435 sq.mi.; pop., 1947 est. 2,113,058 (1940 census: 1,869,255). According to 1947 population estimates, whites comprised 77.1% of the total population, Negroes 22.9%; rural population was 64.1% of the total, urban population, 35.9%. Chief cities (with 1947 urban population estimates): San Juan, the capital (222,839); Ponce (72,402); Mayagüez (59,527); Arecibo (35,187); Caguas (27,352); Río Piedras (25,092). Languages: Spanish and English; religion: predominantly Roman Catholic.

**History.**—The most important development in the history of Puerto Rico during 1947 was brought about by public law 362 of the 80th congress of the U.S. (H.R. 3309), signed by President Truman on Aug. 5, 1947. This law amended the Organic act of Puerto Rico to provide: (1) that the governor of Puerto

Rico shall be elected by qualified voters of Puerto Rico every four years, beginning in Nov. 1948; (2) that the governor shall appoint the heads of the executive departments, with the advice and consent of the senate of Puerto Rico; (3) that there shall be a co-ordinator of federal agencies in Puerto Rico, appointed by the president, by and with the advice and consent of the senate of the U.S. Formerly, the governor, the commissioner of education, the attorney-general, the auditor and the justices of the supreme court had been appointed by the president. Under the above amendments only the auditor and the justices of the supreme court were to be appointed by the president.

**Education.**—A total of 406,588 pupils were enrolled during the 1947 school year in the public and private schools. Private schools had a total enrolment of 19,201 pupils. In the public schools the enrolment, a total of 387,387 pupils, was distributed as follows: 283,570 in public elementary day schools, 83,361 in public secondary day schools, 1,780 in vocational part-time and full-time schools, 14,498 in evening schools, and 4,178 in special groups for veterans. In the public schools the number of teachers, principals, assistant principals and assistant superintendents was 9,217. Private schools employed a total of 813 teachers. A total of $22,832,277 was spent for educational purposes at the elementary and secondary level. Of this total, $13,499,072 was spent from government funds and $1,136,743 by private schools from private sources.

**Communications.**—During the fiscal year 1946–47 a total of 42,367 motor vehicles were registered of which 23,847 were automobiles, excluding government-owned automobiles, 9,395 were heavy trucks, 6,233 were light trucks and 2,892 were other vehicles. The insular department of the interior kept under maintenance 3,227 km. of roads.

During the fiscal year 1946–47 a total of 2,587 vessels with a total gross tonnage of 7,212,277 tons arrived at the several ports of the island.

At the close of the fiscal year 1946–47 there were 27,067 telephones in service and 13 radio broadcasting stations operating in the island.

**Trade.**—The total value of imports into Puerto Rico during the calendar year 1946 was $287,617,592. Of this total, $263,404,605 (91.6%) was imported from the U.S. The total value of exports for the same period was $168,182,150, of which $163,941,239 (97.5%) was exported to the U.S.

**Banking and Finance.**—Bank deposits on June 30, 1947, were $283,865,412; debits were $245,142,395 and bank loans $100,479,449.

Insular government revenues for the fiscal year 1946–47 totalled $184,126,849 of which $88,019,554 was received in the general fund and $96,107,295 in all other funds. The total disbursements for the fiscal year 1946–47 amounted to $194,194,900. Of this total, disbursements from the general fund amounted to $97,271,834 and from all other funds $96,923,066.

**Agriculture.**—During the 1947 crop year an estimate of 298,158 ac. of sugar cane were harvested for a total production of 9,286,282 tons of cane.

The insular tobacco production quota for 1946–47 was set at 250,000 cwt. It was estimated that 30,432 ac. of tobacco would be harvested during the 1947 harvest season. The coffee crop for 1947 was estimated at 295,815 cwt.

**Manufacturing.**—Total sugar production for the 1947 crop year amounted to 1,087,151 short tons of raw sugar 96 degree basis. Sugar refining operations in the island yielded a total of 228,909 short tons of refined sugar, 96 degree basis.

Total production during fiscal year 1946–47 of some other manufactured products was as follows:

| Product | Unit | Production |
|---|---|---|
| Rum . . . . . . . . . . . . | Wine gallon | 3,648,020 |
| Paperboard. . . . . . . . . | Ton | 5,364 |
| Cement. . . . . . . . . . . | Barrel of 376 lb. | 2,201,005 |
| Cigars . . . . . . . . . . . | Thousands | 94,476 |

(J. L-Ee.)

**Pugilism:** *see* Boxing.

## Pulitzer Prizes.

The Pulitzer prizes in journalism and letters, established in Columbia university by the will of Joseph Pulitzer, were given their 31st annual award in 1947. The prizes in letters, five in number, amounting to $500 each, were awarded as follows: fiction award to Robert Penn Warren, professor at the University of Minnesota, for *All The King's Men* (Harcourt); history award to James Phinney Baxter, 3rd, president of Williams college, for *Scientists Against Time* (Atlantic Monthly Press); biography award, posthumous, to *The Autobiography of William Allen White* (Macmillan); poetry award to Robert Lowell for *Lord Weary's Castle* (Harcourt). No drama award was made.

Prizes in journalism, $500 each, eight in number, were distributed as follows: American newspaper prize for meritorious public service to the *Baltimore Sun* for a series of articles by Howard M. Norton on the administration of unemployment compensation; for local reporting to Frederick Woltman of the *New York World-Telegram* on Communist infiltration in the U.S.; for telegraphic reporting (national) to Edward T. Folliard of the *Washington Post* for articles on "Columbians, Inc."; for telegraphic reporting (international) to Eddy Gilmore, chief of the Moscow bureau of the Associated Press; for distinguished editorial writing to William E. Grimes, editor of the *Wall Street Journal;* for a distinguished example of a cartoonist's work to Vaughn Shoemaker for "Still Racing His Shadow" in the *Chicago Daily News;* for news photography to Arnold Hardy for his dramatic picture of the Winecoff hotel fire in Atlanta, Ga., distributed by the Associated Press; special citation in 1947, the Pulitzer centennial year, to Columbia university and the graduate school of journalism for their efforts to maintain and advance the high standards governing the Pulitzer prize awards, and to the *St. Louis Post-Dispatch* for its unswerving adherence to the public and professional ideals of its founder.

The Pulitzer prize in music was given to Charles Ives for *Symphony No. 3.* (B. Gm.)

**Pulp Industry:** *see* Paper and Pulp Industry.
**Pulpstones:** *see* Abrasives.
**Pumice:** *see* Abrasives.

## Purdue University.

A coeducational state institution at Lafayette, Ind., established in 1869 and so named from John Purdue, principal donor of money and land with which to start the university. It embraces schools of civil engineering and engineering mechanics, electrical engineering, chemical and metallurgical engineering, aeronautical engineering, mechanical engineering, agriculture, including a degree in forestry, agricultural engineering, home economics, science and pharmacy. Degrees also are given in trade and industrial education, engineering law and naval science and tactics.

Some significant developments at Purdue during 1947 included: the start of construction of a new synchrotron, to supplement the work done by the cyclotron; the development of a new hay drying and also a new corn drying machine, of potential widespread use in a "soft" corn year such as was experienced in 1947; the discovery of the considerable importance of the use of salt in the rations for hogs, greatly reducing cost of production; the rapid expansion of the work in technical extension, providing training in industrial centres of the state and also offering freshman work to more than 1,200 students in off-campus centres; the discovery of important phenomena by which such materials as germanium, silicon and tellurium, etc., classed as semiconductors, can be made to transmit electricity by either positive or negative carriers, obeying the so-called classical laws as well as the ultramodern concepts of quantum mechanics (this discovery promised to be highly important in radio and radar development); the discovery that corn yields could be increased as much as 10 bu. per ac. by the use of 2,4-D in spraying fields to control weeds and avoid the injury done by cultivation to the roots when the crop is well advanced. (For statistics of endowment, faculty, library volumes, etc., *see* Universities and Colleges.)

## Pyrite.

World production of pyrite increased from about 6,000,000 short tons in 1945 to 7,700,000 tons in 1946, as compared with a prewar high of 11,000,000 tons.

**United States.**—Pyrite output increased from 809,308 short tons in 1945 to 910,977 tons in 1946, while at the same time the sulphur content rose from 41.0% to 41.5%. Imports declined from 208,888 tons to 204,840 tons. (*See* also Sulphur.)

(G. A. Ro.)

**Q Fever:** *see* Pneumonia.
**Quakers:** *see* Friends, Religious Society of.

**uebec.** The province of Quebec, Canada, occupies the lower basin of the St. Lawrence, north of New York and ew England, to Hudson bay and strait. Area, 594,534 sq.mi.; p. (1945 off. est.), 3,580,000. The cities (1941 census) are: ontreal (903,007), the largest city in Canada; Quebec (150,-7), the provincial capital; Trois Rivières (42,007); Sherooke (35,956); Hull (32,947). War growth was estimated have given Verdun a population of 75,000 and Sorel almost ,000. The French language predominates, 80.9% of the peoe being of French origin. The government is affiliated with e Catholic faith, as are 86.9% of the people. Quebec is the ly Canadian province having its own legislative council (sene). The lieutenant governor in 1947 was Sir Eugene Fiset; e premier, Maurice Duplessis.

**History.**—The provincial government continued to be in the nds of the Union Nationale, conservative and favourable to ovincial autonomy, hence non-Liberal in dominion issues and ssatisfied with the English privy council's decision in January 47 that Canada can abolish appeals to the council. It easily on the only provincial by-election in 1947 in Huntingdon. The loc Populaire, founded in 1942 to oppose conscription, fell art in the summer of 1947, and one of its two deputies ined the government party. Adrien Arcand's National Unity rty was reorganized in November, with fascist and separatist ndencies but with little strength. In dominion governmental fairs the province remained staunchly Liberal, the Liberal rty winning by-elections in January at Sorel (Gerard Couroyer) and late in March at Montreal-Cartier (Morris Hartt), beit not without some effort. Support was given against the ommunists and separatists, in the Cartier election; and the urch-advised labour unions and youth groups were active gainst the reputedly communist-inspired dock labourers' and eamen's strikes in August. Premier Duplessis announced offially in the assembly that his government had uncovered a ommunist plot, involving 12,000 men, to seize key points and ominate the province. The assembly asked the dominion to an the Labour-Progressive party in Canada. A Jehovah's Vitness was convicted in court on charges of seditious libel gainst the government.

**Education.**—Laval university, Quebec, undertook the construction of ew premises on a new campus on the outskirts of the city, with a 4,000,000 grant from the province. The number of schools in the rovince in 1946 was 10,078, with 32,580 teachers and 724,397 pupils.

**Commerce, Communications.**—Montreal, Canada's largest seaport, in 946 handled nearly 1,000,000,000 tons of cargo, in 1,600 ocean-going hips and 4,400 river and lake ships. In 1945 the imports of the provnce were $470,362,664 and the exports $1,073,036,228. In 1945 the rovince had 39,649 mi. of highways, of which 22,864 were surfaced. n 1944 the province had 5,186 mi. of railroads, and 397,245 telephones.

**Agriculture.**—The leading farm crop of Quebec is hay, with an annual roduction of $85,488,000 (1944). The total field crops in 1944 were alued at $153,765,000, the yield of oats being valued at $24,241,000, vith potatoes $21,367,000. Dairy production in the same year included utter $28,217,000, and cheese, $12,739,000. Buckwheat (sarrasin), naple syrup and tobacco (wrapper type) are characteristic Quebec farm roducts. The value of all agricultural output in 1944 was $371,275,000. n 1945 livestock was valued at $204,407,000.

**Forests, Newsprint, Fisheries, Furs.**—The production of newsprint, Queec's leading industry, was estimated in 1947 to have increased to about ,200,000 tons (*i.e.*, by about 900,000 tons, as compared with the revious high point attained in 1946). The 1947 price average rose to 88.50 per ton, as compared with $72.25 in 1946; and at the end of he year the price was $90, with an increase to $96 announced by many ompanies for Jan. 1, 1948. The production of other paper products n the province was estimated to have risen to approximately 500,000 ons in 1947. The production of lumber in 1944 was 653,989,310 cu.ft., alued at $114,918,046. Fishery products, cod, herring, mackerel and obster. had a 1945 value of $5,361,872; while furs in 1945 were orth $5,059,995.

**Manufacturing and Other Industries.**—An outstanding development of 947 was the acquisition of the wartime aeroplane plant at Montreal by he Electric Boat Co. of New York and Groton. This large plant was ontinuing in operation to turn out planes for the Trans-Canada Air ines and for the royal Canadian air force. The textile mills of the rovince were notably active in 1947, and at one time the recruiting of emale labour in France was resorted to by a St. Georges factory. The ross value of all Quebec manufactures in 1944 was $2,929,685,183; he number of employees, 424,115; and the wages, $668,156,053; and hese figures were later substantially exceeded. An important new aspect of the tourist industry was the winter tourist trade from the eastern United States for snow sports in the Laurentian mountains north of Montreal, centring at Mt. Tremblant, which was understood to have brought several millions of dollars of revenue in 1947. The summer touring by automobiles in 1947 was more than 30% greater than in the previous record year of 1946.

**Minerals, Hydroelectric Plants.**—In the autumn of 1947 the province announced that tremendous iron ore deposits had been discovered in the Ungava region west of Labrador, where it had in 1946 leased 300,000 sq.mi. to the Hollinger Northshore Exploration Co. The ore body was reported to rival that of the Mesabi range in Minnesota, but its remoteness necessitated a project involving a $75,000,000 railway. In November, also, the Quebec Manganese Mines, Ltd., struck high-grade manganese ore on Grindstone Island in the Magdalen group and claimed reserves of from 40,000 to 140,000 tons. It planned extraction of 160 tons per day. Copper prices, controlled, rose to $16.62 per 100 lb. (carload lots) on Jan. 21, and to $21.50 on June 10. The price of the heavy aluminum production at Arvida is not controlled but was maintained at $14 per 100 lb. ingots throughout 1947. The important gold and asbestos productions were well-maintained during the year. Hydroelectric plants had an installed capacity of some 6,000,000 h.p., and a large share of them were operated by the Quebec Hydro-Electric commission of the provincial government. (W. Ft.)

**Quicksilver:** *see* Mercury.

**Quo Tai-chi** (1888– ), Chinese government official and diplomatist, was born in Kwang-tsi, Hupeh province. He won a scholarship offered by the Chinese imperial government to study in the United States and attended the University of Pennsylvania, Philadelphia, Pa., (1908–11), graduating with a B.S. degree. Returning to China in 1912, he joined Sun Yat-sen's movement, becoming secretary to Dr. Sun. In May 1932, he went to London as Chinese minister to Great Britain. He represented his country at the Disarmament conference and the World Economic and Monetary conference in 1933 and at the assembly of the League of Nations (1932–33). In 1934, he became Chinese representative on the League council and the following year, his status in London was raised to that of ambassador. He left London in 1941 to return to Chungking as foreign minister in Chiang Kai-shek's government. In Feb. 1946, Quo was named China's permanent delegate on the U.N. Security council. During the Iranian dispute, he voted with the majority on the Security council who rejected the soviet request to remove the controversy from the agenda. His appointment to the Atomic Energy commission was disclosed May 3.

In 1947, Quo was appointed to the Security council's Commission for Conventional Armaments and to the general assembly's General committee.

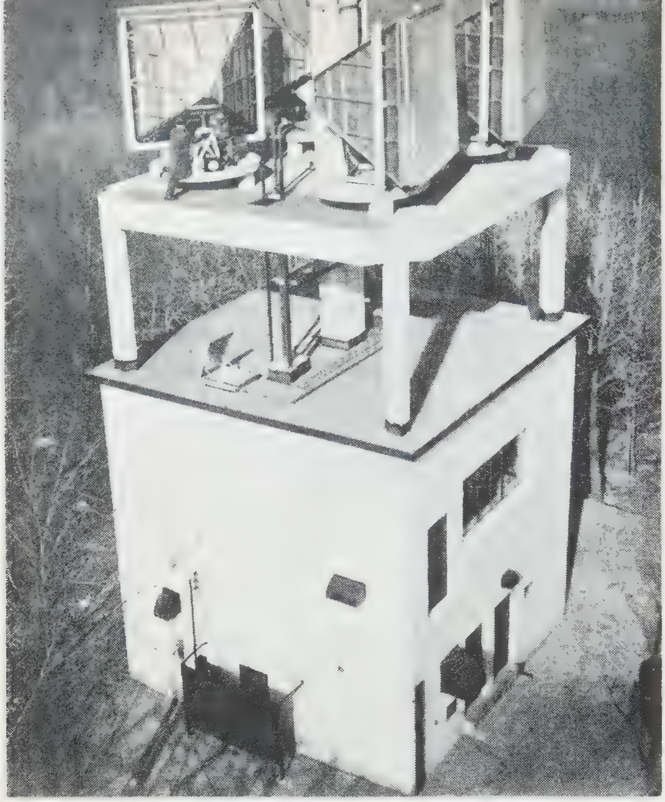
**Racing and Races:** *see* Air Races and Records; Automobile Racing; Dog Racing; Horse Racing; Motor-Boat Racing; Track and Field Sports; Yachting.

**Radar:** *see* Electronics; Munitions of War.

**Radio.** **Growth and Developments.**—It was estimated unofficially that about 5,500 long-, medium- and shortwave broadcasting stations (including relays or boosters) were operating more or less regularly, or were under construction throughout the world, in 1947. This estimate compared with about 4,865 the previous year. Frequency modulation (FM) and television stations were not included in these figures.

*U.S. Stations.*—The boom in station construction in the U.S. continued with only a slight slowing of pace. The number of amplitude modulation (AM) stations on the air or under construction grew from about 1,500 in Dec. 1946 to almost 2,000 a year later. These totals compared with fewer than 1,000 stations when the war ended in 1945. Despite the 100% gain, however, it did not appear that the end of the expansion was in sight. When the year ended, about 650 applications were awaiting action by the Federal Communications commission (FCC), which meanwhile predicted that there would be at least 2,250 AM stations by the end of 1948.

*Listening.*—At least 132,000,000 radio receiving sets were in



RADIO RELAY STATION, forming a link in the first broad-band system connecting New York city and Boston, Mass., which was completed in 1947 for the transmission of television and of many simultaneous telephone conversations

use throughout the world in 1947, compared with about 125,000,000 sets the year before. Approximately 66,000,000 of these, or one-half, were in the U.S., which had 60,000,000 in 1946. A summary prepared by Caldwell-Clements, Inc. and *Tele-Tech* magazine showed 37,000,000 U.S. homes with radios in 1947 compared with 35,000,000 in 1946. The number of automobile radios included in the 66,000,000 total was estimated at 9,000,000: a gain of 3,000,000 over 1946 figures.

The 1947 distribution of radio receivers among continents was shown by Caldwell-Clements, Inc. as follows:

| | |
|---|---|
| North America | 70,500,000 |
| Europe | 46,000,000 |
| Asia | 6,500,000 |
| South America | 5,500,000 |
| Australia | 2,500,000 |
| Africa | 1,000,000 |
| Total | 132,000,000 |

*Frequency Modulation.*—The year brought FM the greatest advances it had yet experienced in listenership and general acceptance as a broadcasting medium. By the end of 1947 more than 350 FM stations were on the air and approximately 700 others were under construction or had been authorized, compared with 100 stations on the air and 600 in the process of construction at the start of the year. After granting about 350 new-station applications during 1947 (compared with a record 500 granted in 1946), the FCC still faced about 125 applications and others continued to come in.

Largely because of delays in securing transmitting equipment, fewer than 100 stations were operating with their fully authorized powers. About 250 others were on the air with regular program schedules, operating on an "interim basis" with reduced power under special FCC authorization designed to build up FM listenership. There were 500,000 to 750,000 FM receivers in use in late 1946; the number grew to about 2,000,000 during the ensuing 12 months.

As more and more FM stations went on the air, it became apparent that the existing channel-allocation plan would result in destructive interference between stations operating in the same general areas. To eliminate this problem, the FCC in July ordered into effect a new allocations scheme based on a minimum separation of four channels (8 mc.) between stations in the same area, instead of the previous 4-mc. separation plan. As a result, the dial assignments of hundreds of stations were changed and many stations already on the air had to move to new frequencies, but the change-over was accomplished with a minimum of disturbance.

*Facsimile.*—A number of technical advances were made in the field of facsimile transmission in 1947, although it remained an "experimental" (noncommercial) operation.

The FCC announced in July 1947 that "cooperative activity by manufacturers, broadcasters, newspaper publishers and others indicates that transmission of printed matter and pictures may soon become a regular broadcast service." The Radio Technical Planning board (R.T.P.B.) had submitted proposed technical standards a few weeks earlier. Because differences of opinion existed as to whether both 8.2-in. and 4.1-in. scanning lines should be provided at the same line rate of 105 lines per inch, however, the FCC decided that further tests and comparisons should precede adoption of standards.

Other facsimile activity, the commission pointed out, included: a news service for aeroplane passengers, in which radioed press dispatches were printed aboard an air liner in four columns at the rate of 500 words a minute; use of facsimile by a New York bank for rapid transmission of reproductions of checks and other records between its downtown and uptown offices and army air force plans for installation of a facsimile system to transmit weather maps over the U.S. for the information of pilots.

*Stratovision.*—The first phase of careful testing of this new system of air-borne relays demonstrated that the plan is feasible, according to the Westinghouse Electric and Manufacturing corporation, which developed it. At the year's end Westinghouse was planning one of the most extensive research projects in electronics history to serve as the second phase of the experiments. Hundreds of thousands of television and FM set owners were slated to serve as volunteer monitors in the exhaustive tests which were being arranged. Stratovision's backers predicted that some 14 transmitter-equipped planes, flying fixed courses, might well be able to relay eight or nine different program services—AM, FM and television—to almost four-fifths of the U.S. population.

**Commercial Broadcasting.**—Radio stations in approximately 40 countries sold time for advertising in 1947, about the same as in other late years.

*U.S. Radio Bill.*—With the growth of FM and television, radio became a $2,000,000,000 business in 1947. Caldwell-Clements, Inc. and their *Tele-Tech* magazine estimated the radio bill of the U.S. in 1947 at $2,115,000,000; as compared with $1,732,000,000 in 1946. The 1947 total was broken down as follows:

| | |
|---|---|
| Sales of time by broadcasters, 1947 | $350,000,000 |
| Talent costs | 60,000,000 |
| Electricity, batteries, etc., to operate 66,000,000 receivers | 220,000,000 |
| 17,000,000 aural receivers, at retail value | 800,000,000 |
| 170,000 television receivers, at retail value | 120,000,000 |
| 66,000,000 replacement tubes | 90,000,000 |
| Radio parts, supplies, etc. | 100,000,000 |
| Phonograph records, 325,000,000 | 300,000,000 |
| Radio set repairs, servicing | 75,000,000 |
| Total | $2,115,000,000 |

*evenues and Expenses.*—An FCC report released in Nov. 7 covering the broadcasting industry's 1946 financial affairs wed that total broadcast revenues (receipts after payment of nmissions to agencies, representatives, brokers, etc.) had tinued to climb, reaching $322,552,771 as compared with previous record of $299,338,133 reached in 1945. But this 5% gain was more than offset by a 14.06% rise in expenses, ch went from $215,753,845 in 1945 to $246,086,525 in 1946. result was that total broadcast income (revenues less exses, before payment of federal income taxes) dropped from ,584,288 to $76,466,246, an 8.52% loss. It was the second secutive slump in broadcast income, which had climbed conently during the years of World War II. In dollar volume decline was comparable with that noted in 1945.

The 1946 report was based on data provided by 8 networks l 1,025 stations, as against 10 networks and 901 stations reting in 1945. The figures relate to AM operations only, not FM and television.

The 8 networks and their 29 owned-and-operated stations in 46 reported broadcast revenues totalling $101,968,989 (a 6% gain over the $100,998,519 reported by 10 networks and owned-and-operated stations in 1945); broadcast expenses gregating $82,624,866 (6.04% above the 1945 figure of $77,-9,904) and broadcast income of $19,344,123 before federal ome taxes (16.18% less than the $23,078,615 income of 45).

*Receipts from the Sale of Time.*—Always the backbone of oadcasting's economy, time sales reached a record $334,078,-4 in 1946, a gain of 7.6% over the 1945 total of $310,484,046. th figures include commissions paid to agencies, etc., which oadcasters regard as an expense of sale, and which in 1946 talled $45,469,650 (compared with $43,923,466 in 1945).

The 1946 time-sale total was composed of $134,781,108 for ne on national and regional networks, $82,917,505 for nontwork time sold to national and regional (spot) advertisers d $116,380,301 for nonnetwork time sold to local advertisers.

The increase in industry revenues was almost exclusively in e field of nonnetwork time sales, which gained 13% while ceipts from network time sales rose less than 1%. Of the two pes of nonnetwork time sales, those to local advertisers ined 17% and those to "spot" advertisers went up 8%.

*Industry Balance Sheet.*—Table I, compiled from FCC recrds, summarizes 1946 revenues, expenses and income of 8 etworks and 1,025 AM stations.

**Table I.**—*Revenues and Expenses of the U.S. Radio Industry, 1946*

| | | |
|---|---|---|
| ne Sales: | | |
| Network | $134,781,108 | |
| Nonnetwork | 199,297,806 | |
| Total | | $334,078,914 |
| duct: Commissions to agencies, etc. | | 45,469,650 |
| et time sales | | $288,609,264 |
| idental Revenues: | | |
| Sale of talent; fees | $ 16,763,049 | |
| Other | 17,180,458 | |
| Total | | $ 33,943,507 |
| tal broadcast revenues | | $322,552,771 |
| tal broadcast expenses | | 246,086,525 |
| oadcast income (before federal income taxes) | | $ 76,466,246 |

*Average Station's Finances.*—Income of the average station ropped from $77,633 in 1945 to $73,404 in 1946, or by 5.5%, cording to FCC figures based on reports from 831 identical ations (*i.e.*, stations operating in both 1945 and 1946 and ithout change in status with respect to class; operating time d network affiliation or nonaffiliation). A comparison of average revenues, expenses and incomes for these 831 AM stations was provided by the FCC in Table II.

**Table II.**—*Average Station's Finances, 1946 and 1945*

| | 1946 | 1945 | % Increase (decrease in parenthesis) |
|---|---|---|---|
| al broadcast revenues | $268,583 | $249,114 | 7.82 |
| al broadcast expenses | 195,179 | 171,481 | 13.82 |
| oadcast income (before federal income taxes) | 73,404 | 77,633 | (5.45) |

A breakdown of this table, to show the averages for national network affiliates and for nonaffiliates, was provided as follows:

**Table III.**—*Per-Station Averages, According to Affiliation or Nonaffiliation with National Networks, 1946 and 1945*

| | 704 Affiliates | | | 127 Nonaffiliates | | |
|---|---|---|---|---|---|---|
| Year | Revenue | Expenses | Income* | Revenue | Expenses | Income* |
| 1946 | $279,002 | $197,971 | $81,031 | $210,829 | $179,704 | $31,125 |
| 1945 | 260,963 | 174,825 | 86,138 | 183,430 | 152,947 | 30,483 |

*Revenue less expenses, before federal income taxes.

*Broadcast Expenses.*—Segregation of specific expenses of broadcast stations in 1946 had not been completed by the FCC at the end of 1947, although early tabulations showed total expenditures of $246,086,525 for 8 networks and 1,025 AM stations, compared with $215,753,845 spent by 10 networks and 901 stations the year before. It appeared likely that the major expense items would rank in their usual order, which, among reporting stations having as much as $25,000 in time sales (and not counting network expenses), was approximately as follows in 1945: Programming, 36%; general and administrative, 33%; technical department, 16% and sales department, 15%.

*Losses.*—Although 1945 was the last year for which detailed information was available with respect to stations suffering financial losses, an indication of recent years' trends was given in the FCC's *An Economic Study of Standard Broadcasting* (see *Economic Analysis*, below). The number of losing stations was expected to be substantially greater in 1946 and 1947 than in the few previous years, because of the large number of new outlets just getting into operation. An FCC survey conducted in April 1947, limited to AM stations authorized after Sept. 1945, showed 154 stations were unprofitable at the time of the survey, while 156 were profitable. Table IV, taken from the commission's economic study, summarizes the extent of unprofitability among all AM stations in seven prior years.

**Table IV.**—*AM Stations Showing Losses, 1939–45*

| Year | Stations reporting loss* | Total number of commercial AM stations | Ratio of losers to total stations | Total losses (in thousands of dollars) |
|---|---|---|---|---|
| 1939 | 227 | 696 | 32.6% | $2,220.5 |
| 1940 | 187 | 756 | 24.7 | 1,551.8 |
| 1941 | 177 | 808 | 21.9 | 1,209.8 |
| 1942 | 194 | 842 | 23.0 | 1,339.4 |
| 1943 | 94 | 841 | 11.2 | 502.7 |
| 1944 | 41 | 875 | 4.7 | 154.3 |
| 1945 | 50 | 901 | 5.5 | 643.0 |

*Reporting broadcast expenses in excess of broadcast revenues.

*Tangible Broadcast Property.*—The FCC failed to compile and release its customary report on the original and depreciated costs of stations and associated broadcasting equipment. The latest available report, for 1945, gave the following totals for 891 AM stations, 4 nation-wide networks and their 10 key stations and 6 regional networks: cost to licensee, $88,101,940; depreciation under present licensee, $46,506,921; depreciated cost, $41,595,019. The increase in the number of stations after 1945 was expected to boost these figures substantially.

*Economic Analysis.*—*An Economic Study of Standard Broadcasting*, issued by the FCC on Oct. 31, 1947, "assumed" there would be 2,250 AM stations in the U.S. in 1948 and predicted that 1,063—almost 50%—would be in economic "problem areas" from the standpoint of competition with other stations and other media. The standard used in defining "problem areas" was the maximum number of stations operating on V-J day in any city of comparable size. Thus, since no community with 25,000 to 50,000 population had more than two stations on V-J day, it was assumed that any city in that population group was or would become a "problem area" whenever it had three or more stations. A total of 287 communities—167 of them having less than 25,000 population—were characterized as problem areas under this definition.

The local part-time stations—usually 250-watt outlets operating only in daytime—were found to be "the most commonly profitable new stations," with full-time locals next. The least commonly profitable class, among the postwar stations, was the full-time regional (500 to 5,000 watts).

Among all the new stations surveyed by the commission, expenses averaged $5,693 per month while revenues averaged $50 less. For profitable stations, average revenues were $6,167 and expenses $4,995, while unprofitable stations averaged $4,961 in revenues and $6,610 in expenses.

The 112-page economic survey, first of its kind, also analyzed radio's revenue potential at length, considering in detail the possible effects of general business activity and competition both from other media and from other stations.

**Programming.**—*Network Commercial Programs.*—The 15 most popular network programs as of Nov. 30, 1947, are shown below as reported by C. E. Hooper, Inc., creator of the Hooperatings-Radio Audience Measurement, along with their rank in corresponding reports for 1945 and 1940:

| *Nov. 30, 1947* | *Hooperating* | *Nov. 30, 1945 position* | *Nov. 30, 1940 position* |
|---|---|---|---|
| 1. Bob Hope | 25.9 | 1 | 4 |
| 2. Jack Benny* | 25.3 | 6 | 1 |
| 3. Fibber McGee & Molly | 25.0 | 2 | 3 |
| 4. Charlie McCarthy | 24.4 | 5 | 2 |
| 5. Amos 'n' Andy | 22.6 | 16 | 31 |
| 6. Fred Allen | 22.2 | 8 | not on |
| 7. Red Skelton† | 21.8 | not on | not on |
| 8. Radio Theatre | 21.8 | 3 | 5 |
| 9. Mr. District Attorney | 21.0 | 7 | 19 |
| 10. Truth or Consequences | 20.3 | 21 | 24 |
| 11. Walter Winchell* | 20.3 | 4 | 6 |
| 12. My Friend Irma | 18.2 | not on | not on |
| 13. Music Hall | 18.1 | 12 | 30 |
| 14. Bandwagon | 17.7 | 35 | 12 |
| 15. Arthur Godfrey's Talent Scouts | 17.4 | not on | not on |

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*Includes first and second broadcasts.
†Computed Hooperating.

The top ten daytime leaders reported by Hooper as of Nov. 15, 1947, with their respective positions in 1945 and 1940, were:

| *Nov. 15, 1947* | *Hooperating* | *Nov. 15, 1945 position* | *Nov. 15, 1940 position* |
|---|---|---|---|
| 1. Our Gal Sunday | 6.9 | 13 | 6 |
| 2. Aunt Jenny | 6.7 | 20 | 32 |
| 3. Young Widder Brown | 6.5 | 5 | 22 |
| 4. Romance of Helen Trent | 6.5 | 10 | 19 |
| 5. Stella Dallas | 6.4 | 12 | 4 |
| 6. Ma Perkins (CBS) | 6.2 | 14 | not on |
| 7. Backstage Wife | 6.0 | 7 | 13 |
| 8. Pepper Young's Family | 6.0 | 3 | 3 |
| 9. Right to Happiness | 6.0 | 11 | 9 |
| 10. Portia Faces Life | 5.9 | 4 | 60 |

*Programming Trends.*—One of the principal developments in the field of national network programming was the ascendancy of the so-called "disc jockey" program in which prominent entertainers, such as Martin Block, Paul Whiteman and Ted Husing, took over the role of master of ceremonies on musical records shows. There also was a definite trend toward transcribed programs, following Bing Crosby's introduction of the transcribed series (as distinguished from "live" broadcasts) in 1946. The fate of the wholly transcribed musical broadcast, of course, would depend upon whether or not the musicians' union would ultimately relent in its decision to play no more for records and transcriptions (see *Labour Unions* below).

Like the preceding year, 1947 was filled with program shifts, discontinued shows and new programs, so far as national network programming was concerned. Program types, on the other hand, remained relatively stable. Among evening shows, dramatic programs continued to lead all other classifications and gained 3.1% in network sponsored time. Variety programs, in second place, dropped 7%. News and commentaries, popular music, quiz shows and concert music all showed gains. Among daytime sponsored shows on the networks, the serial drama remained well ahead of all other types in point of air time, although it dropped 6% below its 1946 level.

*Special Events.*—Radio took its listeners into virtually all quarters of the world in its presentation of both spot news and features, and, as in preceding years, was used extensively by political leaders to reach constituents and subjects. Probably its most lavish coverage was given to the wedding of Princess Elizabeth of Great Britain and the duke of Edinburgh, in London in November. In the political field, stations and networks used wire recorders more extensively than ever before to cover congressional hearings.

*FM.*—FM programming made advances, although still hampered by the American Federation of Musicians' (A.F.M.) ban on the duplication of AM live musical programs on FM stations. With more and more stations on the air, many of them unaffiliated with AM stations—and thus unable to duplicate AM nonmusical or recorded-music programs—a more diversified program fare was available.

For the most part, independent FM stations offered much the same type of programming as the AM stations, but emphasized musical programs in order to display better the high-fidelity traits of FM. At the year's end, it appeared likely that the A.F.M. ban on AM-FM duplication might soon be lifted, so that FM stations associated with AM network affiliates would be permitted to offer AM network programs to FM set owners.

*Network Programs by Types.*—Table V, prepared by C. E. Hooper, Inc., shows the general composition of commercial evening programs broadcast on the major AM networks during October, November, December of 1946 and 1947.

**Manufacturing.**—*Receiver Production.*—Industry authorities estimated that the 1947 production of radio receiving sets approached 18,500,000 units, a gain of about 23% over the previous record of 15,000,000 turned out in 1946. The estimates were based on a report issued by the Radio Manufacturers' association (R.M.A.), representing more than 90% of the industry, which showed that 1947 receiver output by R.M.A. members totalled 17,695,677 units.

Of the year's output, 1,175,104 units were combination AM-FM receivers, compared with 181,485 in 1946, while 178,571 were television sets as against 6,476 the previous year. Production of automobile and portable receivers doubled the 1946 totals, with 3,029,637 auto sets against 1,153,458 in 1946, and 2,153,095 portables against 1,022,689. Of the home receivers built, 72% were table models, 13% consoles and 15% portables.

*Receiver Tube Production.*—The output of radio receiver tubes dropped slightly in 1947. R.M.A. reported its members turned out 199,533,827 tubes, compared with approximately 205,000,000 tubes produced in 1946.

**Networks: AM, FM.**—Unlike 1946, which saw two networks cease operations, 1947 brought an increase in this field. There were no casualties. The number of major AM networks remained at four—National Broadcasting Co., Columbia Broadcasting system, Mutual Broadcasting system and American Broadcast-able V.—*General Composition of Network Commercial Evening Programs*

October through December, 1947 and 1946

| e of program | 1947 % of time on air | 1946 % of time on air |
|---|---|---|
| natic | 40.9 | 37.8 |
| ety | 17.1 | 24.1 |
| 's and commentators | 14.1 | 11.4 |
| ular music | 11.5 | 10.8 |
|  | 9.3 | 6.4 |
| cert music | 3.7 | 3.2 |
| ellaneous | 3.4 | 6.3 |

Co.—but for the first time FM broadcasting achieved net- rk status.

Continental FM network was organized among FM stations ng the North Atlantic seaboard by Everett L. Dillard, owner WASH (FM) in Washington, D.C., and of KOZY (FM) in nsas City, and president of the FM association. Continental nmenced operation in March and had 32 affiliates by the end the year. Elsewhere, regional FM networks were getting der way on smaller scales. Instead of using the conventional re-line relays, many FM network affiliates were linked by ect broadcast and rebroadcast from one station to another.

FM association officials claimed that the growth of FM net- rks generally was being impeded by a lack of high-fidelity re-line relay facilities, and filed a protest with the FCC in ecember charging the American Telephone and Telegraph mpany with discriminating against FM in this respect. In sponse to the petition's request for a hearing, the commission dered a conference with FM association and A. T. & T. offi- ls to be held in January in hopes of reaching a solution.

**Trade Associations.**—The National Association of Broad- sters (N.A.B.), dominant trade organization of the broad- sting industry, undertook a number of major projects under e leadership of Pres. Justin Miller.

One of its principal and most provocative campaigns was for loption of a code of self-regulation for broadcasters. Setting standards for stations to follow in handling various types of rograms, and imposing limits on the extent of commercial essages, the proposed code was the subject of heated debate N.A.B.'s annual convention, held in September in Atlantic ity, N.J. Later it was substantially rewritten to incorporate hanges suggested by the membership. Feb. 1, 1948, had been t tentatively as the effective date of the standards, but the A.B. board postponed the date indefinitely to permit revision.

The Broadcast Measurement bureau, formed by broadcasters, dvertising agencies and advertisers to serve as radio's own udience surveyor, continued to function under the presidency f Hugh M. Feltis, and in midyear a 15-point plan for its per- nanent continuous operation was approved with support of the ational Association of Broadcasters, the Association of Na- onal Advertisers and the American Association of Advertising gencies.

Broadcast Music, Inc. (B.M.I.), operating as an independent nit alongside N.A.B., received its first paid president with the lection of Carl Haverlin, who had been the Mutual Broad- asting system vice-president in charge of station relations. In ne past, the B.M.I. presidency had been one of the duties of ne president of N.A.B. Later in the year, B.M.I. acquired the apital stock of the Associated Music Publishers (A.M.P.), in- olving the publishing and performing rights to the entire .M.P. catalogue as well as the catalogues of 15 foreign music ublishing firms.

The National Association of Radio Station Representatives N.A.R.S.R.) was organized in September and straightway filed complaint with the U.S. attorney-general and the FCC charg- g that the Columbia Broadcasting system (CBS) had illegally ncroached on their business by taking over nonnetwork time les of several CBS affiliates formerly represented by N.A.- S.R. members. Neither the justice department nor the FCC had acted at the year's end.

FRED ALLEN (right) "visiting" Jack Benny's show at the Roxy theatre in N.Y. during May 1947. Both entertainers were among the ten leading favourites in radio according to 1947 ratings by C. E. Hooper, Inc.

**Employment.**—Seven networks and 924 AM stations employed 34,831 persons in the first week of Feb. 1947 and paid them $2,408,246, an average of $69.14 per person, according to the FCC's annual report on employment and compensation in the broadcasting industry.

Substantial revision in the form of the questionnaires used by the commission precluded comparisons with the last previous employment report, which showed a total annual pay roll of $116,267,274 in 1945. But it was generally conceded that the 1947 pay roll would be considerably greater, probably reaching at least $125,000,000 to $130,000,000, even though the February employment figures were about 3,000 below the number of employees reported for Dec. 1945, the peak month of that year.

Aside from executive, supervisory and nonstaff personnel, the FCC reported, the 24,513 broadcast employees in Feb. 1947 were scheduled to receive an average of about $61 a week, as against average compensation (in some cases including overtime payments) of about $58 with the comparable 26,151 employees reported in 1945.

**Labour Unions.**—James C. Petrillo and the A.F.M., which he headed, remained organized labour's dominant influence on the broadcasting industry.

At midnight on Dec. 31, 1947, A.F.M. invoked its ban on further performances for recordings and transcriptions. The 195,000 U.S. musician-members of the union were forbidden, by Petrillo's order, to play for any recording or transcription, including recorded or transcribed radio shows (except those used for repeat broadcasts to overcome time differences in various zones).

Forewarned, the 770 recording and transcription companies affected by the ban had spent the last two months of 1947 furiously cutting new master records. They estimated the backlog thus accumulated would provide enough new music to last from one to two years.

The ban, attributed to A.F.M.'s loss of royalties on records as a result of the new Taft-Hartley labour law, did not affect nonmusical recordings. Petrillo insisted A.F.M. was quitting recording and transcription work for good, but industry observers felt he eventually would relent. Meanwhile an Industry Music committee, representing all segments of the trade, was mapping an extensive strategy program for future dealings with the union.

Elsewhere on the labour front, A.F.M. early in 1947 negotiated one-year contracts calling for 20% wage increases for musicians employed in New York key stations of the four major networks. But at the year's end negotiations toward renewals of the network contracts had been wholly unproductive. The contracts were to expire Feb. 1, 1948.

The American Federation of Radio Artists and the four networks signed a two-year contract in January providing for 20 to 30% salary increases for actors, singers, announcers and sound-effects men. The Radio Writers guild in late October ratified a six and one-half year contract with the major networks covering author's rights, air credits, establishment of a joint adjustment board, minimum fees, etc.

The U.S. supreme court ruled in June that the Lea act's prohibition against featherbedding was constitutional. The decision came in a case in which Petrillo was charged with violation of the act, passed in 1946 to make certain A.F.M. practices unlawful. The supreme court sent the case back to Judge Walter La Buy of the U.S. district court in Chicago, who had declared the law unconstitutional, for trial, which was expected to start in Jan. 1948.

**Legislation.**—Sen. Wallace H. White Jr. (Rep., Me.), author of most of the radio legislation enacted during the last 20 years, introduced a bill offering extensive amendments of the Communications Act of 1934. The bill would greatly expand FCC's authority over broadcasting stations, and was met with almost solid industry opposition when hearings were conducted in June before the radio subcommittee of the Senate Interstate and Foreign Commerce committee.

Sen. White subsequently rewrote the measure and appeared to have won industry support for most of its provisions, except one giving the FCC authority to take a station's programs into consideration when acting upon its application for renewal of licence. Broadcasters claimed such a provision violated constitutional guarantees of free speech. Sen. White, chairman of the committee considering the bill, hoped to have it reported to the senate floor for action early in the session which convened in Jan. 1948.

**World Conferences.**—After sessions which extended from mid-May until the end of September, representatives of 78 nations on Oct. 2, 1947, signed two major, basic agreements in the field of international communications. One was the Treaty of the International Telecommunications convention; the other was an agreement covering technical and operating aspects of international radio communications, called the International Radio Regulations.

The conferences, held at Atlantic City, N.J., created an International Frequency Registration board (I.F.R.B.), to be set up at Geneva, Switz., which would keep a list of frequency assignments throughout the world in accordance with the standards adopted at the international sessions. The groundwork for I.F.R.B. was to be laid by a Provisional Frequency board (P.F.B.) which was scheduled to convene at Geneva in Jan. 1948. This preliminary work, with I.F.R.B. members assisting, was expected to require 18 to 24 months. Capt. Paul D. Miles, then head of FCC's Frequency Service-Allocations division, was designated chairman of the U.S. delegation to I.F.R.B. Ray C. Wakefield, former member of the FCC, was appointed head of the delegation to P.F.B.

On a regional scale, but highly important to broadcasting in the northern hemisphere, preliminary work toward revision of the North American Regional Broadcasting Agreement (N.A.R.B.A.) was undertaken at a conference of engineering representatives of the signatory nations, held at Havana, Cuba, i November. Action at Havana was restricted to nonpolicy eng neering phases of the treaty. Such basic policy subjects as pa ticular nations' bids for priority rights to certain frequenci were left for the treaty conference itself, to be held at Montrea Can., in Nov. 1948. Heated debates were forecast, however, a result of demands of several countries, notably those of Me ico, which would require a reallocation of virtually all of th broadcast band.

The U.S., with its own clear-channel and maximum-powe questions still hanging fire in FCC's two-year-old clear-channe hearing, was unable to offer recommendations with respect t channel and power uses. But the clear-channel case was slate for decision in early 1948 and the U.S. planned then to submi appropriate N.A.R.B.A. proposals to the other nations in lat winter or early spring. N.A.R.B.A. signatories, in addition to th U.S., were Canada, Cuba, Mexico, the Bahamas, the Dominica Republic and Newfoundland.

**U.S. Foreign Broadcasts.**—The state department's muc bruited "Voice of America" program of international short-wave broadcasting faced seemingly brighter prospects as 194 ended, with congressional authorities predicting passage early i 1948 of legislation specifically authorizing continuation of th broadcasts. Earlier, congress had reduced funds for the progra from $31,400,000 to $12,400,000, but it was thought that substantially more would be sought upon the expected passage o pending legislation—the so-called Mundt bill—continuing th "Voice."

To show how its international short-wave activities had declined in the year, the state department pointed out that its output to the world had totalled 1,701 hr. 30 min. in Dec. 1946; 1,796 hr. 45 min. in March 1947 and 969 hr. 30 min. in Dec. 1947. The total weekly output of the U.S. to given areas, compared with broadcasts beamed by other governments to the same areas, is shown in Table VI, compiled by the state department.

Table VI.—*International Broadcasting to Different Regions (Dec. 1947)**
(U.S. Totals Compared With Others)

| | To Europe | To Latin America | To Far East | To N. Africa, Near & Mid-East | To U.S. |
|---|---|---|---|---|---|
| By U.S.. . . . . . . . . | 120¾ hr. | 63 hr. | 45½ hr. | None | ........ |
| By Great Britain . . . . . | 280 hr. | 80½ hr. | 50¾ hr. | 75¼ hr. | 131¼ hr. |
| By U.S.S.R. . . . . . . . . | 207 hr. | 17½ hr. | 59 hr. | 59½ hr. | 17½ hr. |
| By satellites of U.S.S.R. . . | 175 hr. | None | None | 7 hr. | 14 hr. |
| By France. . . . . . . . . | 51⅚ hr. | 10½ hr. | Unavailable | 28 hr. | 17½ hr. |

*Figures comprise only totals of short-wave broadcasts that are beamed from these countries to their respective target areas. They do not account for such programs as are beamed from one country to other countries over long and medium wave transmitters. This is particularly true in the case of Europe and in broadcasts from the U.S.S.R. to regions bordering the Soviet Union.

(R. W. Cr.; S. Tf.)

**Radio Scientific Developments.**—*Military Radio Equipment.*—Government support of radio research and development during 1947 continued at a substantial rate. Funds were allocated for radar, guided missile control, air navigation television, communications and many other projects.

The need for a comprehensive system of air navigation and traffic control was emphasized by several air tragedies which occurred during the year. The development of systems such as Navar, Lanac and Teleran was expedited to meet this need. Teleran was developed to the point where flight tests were started.

The Teleran system employs a ground search radar which surveys the air space in the vicinity of the airport and displays the information thus obtained on a cathode-ray tube. A television camera converts the radar presentation into a television image on which is superimposed a map of the area. This combination picture is broadcast by a television transmitter. A television receiver in the aeroplane reproduces the picture and the t sees his plane as a spot of light moving across the map. er planes in the area appear as different spots of light, each ing according to its actual course.

he Teleran system includes a method of separating the ir echoes according to altitude and transmitting a separate ure for each altitude level. This is accomplished by providing each aircraft with a transponder which consists of a receiver transmitter connected together so that the transmitter emits or more pulses when the receiver picks up a pulse from the und radar. If the transponder emits two pulses separated a time interval which depends on the aeroplane's altitude a riminator circuit at the ground station can be made to sort the responses according to altitude.

horan, the most precise method of air navigation so far available, was further improved in accuracy. Figures published by U.S. army air force indicated consistent accuracies of about ft. at 300 mi. The air force employs Shoran for long-distance ngulation surveying, aerial photography and other purposes.

A further advance in air navigation was indicated by the mpletely automatic 2,400 mi. trans-Atlantic flight of a U.S. force C-54 from Stephensville, Newfoundland, to Brise Nor-, 40 mi. west of London, Eng. The automatic flight was omplished by self-controlled, preset mechanisms. The plane ried an emergency crew of nine, but no human hand touched controls on the entire flight.

*'Printed" Electronic Circuits.*—The development of a miniae radio transmitter and receiver by the national bureau of ndards aroused considerable interest. The extremely small of the units resulted from the use of so-called "printed" cirts. In this technique the circuit wiring and inductors are nted or stencilled with silver paint on a base material such a ceramic plate. The resistors in the form of a carbon and in mixture are sprayed on the plate through masks. Small pacitors are applied directly to the wiring on the plate. The embly is completed by soldering the sub-miniature tubes to proper circuit terminals.

*Facsimile.*—A colour facsimile system called Colorfax was veloped. An experimental equipment reproduced colour prints the rate of one-half inch per minute. The colour pictures are tained by means of cyan, magenta, yellow and black pencil ads applied to any ordinary type of paper. Each line of the iginal picture is scanned four times to produce signals which e suitable to actuate the pencil leads used in the colour printer. ny or all of the pencil leads may be caused to operate in quence to reproduce by overprinting the desired colour comnations for each line in the picture. The speed of reception r a colour picture is one-quarter that of an equivalent black d white image.

Another facsimile development called Ultrafax was announced David Sarnoff, president of the Radio Corporation of Amera. Ultrafax is a facsimile system employing television techques and through the use of a wide band communication annel is capable of handling approximately 1,000,000 words minute. (*See* also ADVERTISING; FEDERAL COMMUNICATIONS OMMISSION.) (G. L. Bs.)

**Great Britain.**—The year 1947 began with the British Broadsting corporation (BBC) in the grip of a fuel crisis, and it ded on a note of jubilation. In the intervening months the BC played its part in events of high national importance and ade certain innovations in policy and programs.

In the middle of February the acute shortage of fuel brought wn the axe on broadcasting. Until well into March an abeviated service was broadcast. Television, the "third proam" and broadcasts to schools stopped altogether. For long riods during the day, home and light programs were merged one wave length, and there were substantial cuts in overseas services. The BBC closed its year in a different atmosphere, with the celebration of its silver jubilee, which was marked by a visit to Broadcasting house by the king and queen and Princess Margaret, and the world-wide broadcasts in honour of the wedding of Princess Elizabeth and the duke of Edinburgh.

Early in the year an important decision on political broadcasts was reached with the government. It was agreed to broadcast a limited number of party political talks of a controversial character, allocated to the various parties in accordance with their polls at the last election. Provision was made for 12 such broadcasts in 1947—Labour 6, Conservative 5, Liberal 1. Subjects and speakers were chosen by the parties and each side was free to use one of its quota for the purpose of replying to a previous broadcast. The BBC reserved its right, after consultation with the party leaders, to invite to the microphone in connection with these broadcasts a member of either the house of lords or the commons, of outstanding national eminence, who might have become detached from any party. The first two talks, on the economic situation, were given by the prime minister, Clement Attlee, and Anthony Eden (for the Conservative party).

Another major development affected broadcasts to schools, when the Central Council for School Broadcasting dissolved itself to make way for a new body, the School Broadcasting Council for the United Kingdom. Similarly, the Scottish council made a new start as the School Broadcasting Council for Scotland, and there was established the School Broadcasting Council for Wales. The formation of these councils was in accordance with the view of the corporation that so influential an organization should have representative bodies to guide it.

During the year the BBC was called upon to describe to listeners events of world-wide importance. The royal tour to South Africa was covered in all its aspects by a team of observers and engineers who accompanied the royal family throughout their journey. Another party of observers and engineers visited India during the period of the handing over of power to the dominions of India and Pakistan. The 80th birthday of Queen Mary inspired a number of commemorative programs, and a peak was reached in the broadcasts of the royal wedding in November, which were heard under excellent conditions throughout the world.

Important productions by the drama department during the year included the whole of Shakespeare's chronicles and a George Bernard Shaw festival. Among individual productions may be mentioned *The Frogs* of Aristophanes, in Gilbert Murray's translation, and Henrik Ibsen's *A Doll's House.* The Music department sponsored the 53rd season of the Henry Wood promenade concerts at the Albert hall, and also presented a series of concerts under distinguished guest conductors in honour of the centenary of Johannes Brahms and Franz Schubert. It was a record year in the broadcasting of opera, both from the studio and from theatres. A number of broadcasts were also made from the Edinburgh Festival of Music and Drama. One of the most important contributions by a single artist was made by Dame Myra Hess, who played all Mozart's piano concertos in a series in the third program.

Apart from the important developments in the broadcasting of political talks noted above, a new series of talks on atomic energy aroused world-wide interest. Not only were they repeated in the corporation's overseas services, but were also distributed on records by the BBC Transcription service. There were also a number of talks and discussions on Britain's economic position which attracted big audiences. Two features stand out prominently in the variety program—the success of Gracie Fields in a series of public broadcasts, and the remarkable popularity of programs of the quiz or parlour-game variety.

Examples of the former were in the long-established "Puzzle Corner" in "Monday Night at Eight," "Have a Go" with Wilfred Pickles, the quiz in "Merry-Go-Round" and "Radio Forfeits" conducted by Michael Miles. "Twenty Questions" was highly popular as a parlour-game program.

The output for Europe and in the overseas services was maintained both by direct transmissions and in the form of transcriptions. The teaching of English by radio was a feature greatly appreciated by listeners in many lands.

The most ambitious single undertaking in the foreign language services was a serial version in Spanish of *Don Quixote* in honour of the fourth centenary of the birth of Cervantes.

Domestically the most important event was the coming into force on Jan. 1 of the new charter, which was to have a life of five years, during which time the government undertook to hold an inquiry into the broadcasting service. Under the terms of the charter, agreement was reached between the corporation and the staff association on arbitration machinery in case of a difference of opinion on terms and conditions of service.

Lord Inman resigned the chairmanship of the board of governors in June and was succeeded by Lord Simon of Wythenshawe. (*See* also TELEVISION.)

**Radio Detection:** *see* ELECTRONICS; RADIO.
**Radiology:** *see* X-RAY AND RADIOLOGY.

## Radium.

No recovery of the radium associated with the uranium and vanadium ores of the western United States was reported after 1942. Imports of radium salts into the U.S. vary widely from year to year, and the drop from the wartime peak was precipitous, as is shown in the following table:

| | Grams | Value | | Grams | Value |
|---|---|---|---|---|---|
| 1937 | 15.29 | $ 377,659 | 1942 | 23.043 | $ 377,326 |
| 1938 | 38.75 | 787,025 | 1943 | 90.755 | 1,366,538 |
| 1939 | 78.631 | 1,953,820 | 1944 | 101.290 | 1,374,933 |
| 1940 | 30.311 | 748,097 | 1945 | 67.342 | 991,979 |
| 1941 | 4.412 | 110,202 | 1946 | 17.229 | 326,450 |

It was possible that the attention being given to radioactive isotopes from atomic fission had detracted some from the normal use of radium. (G. A. Ro.)

**Railroad Accidents:** *see* DISASTERS.
**Railroad Retirement Act:** *see* SOCIAL SECURITY.

## Railroads.

The volume of freight traffic and the gross operating revenues of railroads in the United States in 1947 were higher than in any previous peacetime year and little lower than in the war period, but the net income and the return on investment, while better than in 1946, were lower than in prewar years. The shrinkage in the volume of rail passenger traffic, which began when World War II ended, was continued. The net railway operating income—the amount left to pay rentals, interest on debt, other fixed charges and dividends—in 1947 was approximately $748,000,000. The figure for 1946 was $620,000,000. The return on investment (minus depreciation) in 1947 was 3.32%; in 1946 it was 2.75%.

During the first nine months of 1947 there were 33 railroads of Class I (those having operating revenues of $1,000,000 or more per year) which failed to earn all of their rentals and charges. Those 33 railroads made up 17% of the total mileage of Class I railroads and included such important systems as the Pennsylvania and New York Central. Fortunately the other 95 Class I railroads were able to earn more than their charges, and for the railroads as a whole the net income after charges was $450,000,000, nearly double the amount earned in 1946. The substantial gain over 1946, however, was not enough to put the railroads in healthy financial condition.

| Item | 1947 | 1946 | 1944 | 19 |
|---|---|---|---|---|
| | | (Millions) | | |
| Freight revenue | $6,992 | $5,787 | $6,999 | $4,82 |
| Passenger revenue | 945 | 1,259 | 1,790 | 87 |
| Total operating revenues | 8,582 | 7,628 | 9,437 | 6,28 |
| Operating expenses | 6,755 | 6,357 | 6,282 | 4,50 |
| Taxes | 907 | 498 | 1,846 | 39 |
| Net railway operating income | 748 | 620 | 1,106 | 1,25 |
| Rate of return on investment less depreciation | 3.32% | 2.75% | 4.71% | 5.2 |
| | | (Millions) | | |
| Net income after charges | $450 | $287 | $667 | $89 |
| Revenue ton-miles | 647,359 | 591,982 | 737,246 | 447,32 |
| Revenue passenger-miles | 44,790 | 64,673 | 95,549 | 31,07 |

The income account of Class I railroads in 1947, estimated part by the Bureau of Railway Economics and published *Railway Age,* Jan. 3, 1948, in comparison with 1946, 1944 war year) and 1929 (a prosperous predepression year) is giv above in condensed form. The table shows also the volume ton-miles and passenger-miles.

The figures show that the freight revenue of 1947 was 21 greater than in 1946 and almost exactly the same as in 1944, t wartime year of greatest freight traffic. In passenger servi however, the 1947 revenue was 25% less than in 1946 and on about one-half of that of 1944, when military traffic was at i highest level. In total operating revenues 1947 was 12% mo than in the preceding year but 9% less than in 1944. The da reflecting the volume of traffic show similar comparative r sults, but because of advances in freight and passenger rates 1947 the per cent of increase in freight revenue was greater tha the per cent of increase in ton-miles and the per cent of decrea in passenger revenue was less than the per cent of decrease passenger-miles. In the two most important items—net railwa operating income and per cent return on investment—1947 w better than 1946 but much below 1944. The effect of high operating costs in recent years is seen in the fact that the 19 operating revenues of $6,280,000,000 yielded net income nearly $900,000,000 while the 1947 operating revenues of $8 582,000,000 produced but $450,000,000 in net income. Th rate of return on investment less depreciation was 5.24% 1929 and 3.32% in 1947. The position of railroad spokesmen that anything less than 6% is inadequate.

**Rate Increases.**—The impact of wage advances and th higher costs of fuel and other materials on operating expens resulted in such dangerously low net earnings in 1946 that th railroads appealed to the Interstate Commerce commission fo authority to increase freight rates about 20%. An interim in crease of about 6.5% was permitted on July 1, 1946, and effe tive Jan. 1, 1947, a further advance was authorized, bringing th aggregate increase to about 17.6%. Further wage boosts an other additions to expenses in 1947 led the railroads, early in th year, to go to the commission again and request higher passenge fares as well as an additional increase of about 30% in freigh rates. In Oct. 1947 the commission approved an interim ad vance of nearly 10% in freight rates and in December grante an additional interim increase of nearly 10%. As a result o these advances the average freight rate in Jan. 1948, was abou 40% higher than in Dec. 1946. In addition, the commission al lowed the railroads throughout the year 1947 to boost thei passenger fares. The rates of increase were not uniform through out the country, but typically the coach fare per passenger-mil was advanced from 2.2 cents to 2.5 cents, and the fare in Pul man cars went up from 3.3 cents to 3.5 cents. The rates fo commutation passengers were also advanced on some railroad

The rates paid to the railroads by the post office departmen for the carriage of U.S. mail on trains are set by the Interstat Commerce commission. Inasmuch as there had been no chang in those rates in the preceding 20 years the railroads petitione the commission for an advance of 45% in recognition of th higher costs of operation. In Dec. 1947 the commission autho ized an interim increase of 25% pending final determination total increase to be allowed. The commission also per- tted the Railway Express agency, a railroad-owned subsidiary, advance its rates for the transportation of express matter on ssenger trains.

Advances in rates were not confined to railroads. The higher st of wages and the increase in other elements of total op- ating costs bore as heavily on the operators of trucks, buses d air lines as upon the railroads, and those transportation encies applied for and were given authority to increase their es in degree similar to the advances in railroad rates. The mpetitive situation between the several forms of transporta- on, therefore, was not materially changed in the matter of lative rates.

In its decision of Oct. 7, 1947, approving an interim increase 10% in railroad freight rates, the commission, noting that e railroads like many other industries were vulnerable to in- tionary forces and that sharp increases in operating costs had curred, said that while an increase in rates might stimulate ready existing inflationary forces, that factor, in their judg- ent, was "outweighed by the necessity of keeping the carriers, the face of higher costs of operation, in a reasonably healthy ndition in order that they may maintain their credit, procure dditional equipment which is now urgently needed, and re- bilitate and improve their properties generally to take care of e demand of the public for adequate transportation service."

**Railroad Financial Organization.**—Further progress was ade in 1947 in improving railroad financial organization. The tent to which the railroads had become insolvent was indi- ated by the fact that during the depth of the depression in the arly 1930s more than 77,000 mi., nearly one-third of total rail- oad mileage, were in receivership or trusteeship. The bank- upt mileage had been reduced to 31,149 by the end of 1946, and uring 1947 the consummation of the reorganization of the New aven, Rio Grande, Frisco and Cotton Belt systems and five maller roads brought the total mileage in the hands of the ourts down to 24,200. On Jan. 1, 1948, the Rock Island system f 7,650 mi. emerged from trusteeship, further reducing the ankrupt railroad mileage to 16,650 or about 7% of the total. he only large railroad system in reorganization as of Jan. 1, 948, was the Missouri Pacific.

**Wage Increases.**—Outside of a very few instances of no ore than local importance and of short duration, there were o railroad strikes or serious labour disturbances on railroads n 1947 although at the end of the year there was threat of trike by the enginemen and firemen and a small minority of ard crews. The round of wage increases, additional to those ranted in 1946, was begun in March when the so-called non- perating group, consisting of shopmen, trackmen, station em- loyees, office clerks and others (about three-quarters of total mployees) demanded an increase of 20 cents per hour. Follow- ng direct negotiation and mediation the dispute was settled eacefully by arbitration. The award of the arbitration board, ccepted by both sides, gave the men an increase of 15½ cents er hour from Sept. 1.

The operating brotherhoods, comprising about 350,000 engine- en, firemen, conductors, trainmen and over 90% of the yard- en, on Sept. 30, 1947, presented demands for a wage advance f 30% and the adoption of many rule changes which would ffect wages. The result of subsequent negotiations between a ommittee of railroad executives and union leaders, without tervention of governmental mediation, was an offer by the ailroads to give the operating brotherhoods the increase of 15½ ents per hour granted in September to the nonoperating group nd to change a few of the rules to the advantage of the em- loyees. The offer was accepted by the conductors, trainmen nd yardmen who belonged to the trainmen's union but was rejected by the enginemen, firemen and the small minority of yardmen who belong to the switchmen's union. The dissidents held out for better terms and threatened to strike. At the close of the year the dispute was in process of mediation.

The number of employees in 1947 averaged about 1,356,000, practically the same as in 1946 but approximately one-third more than in 1940. Estimates of the Bureau of Railway Economics placed the annual compensation per employee in 1947 at $3,200. The comparable figure in 1946 was $3,069. In 1940 it was $1,913. The average would have been higher in 1947 if the wage increases effective on Sept. 1 and Nov. 1 had been in effect throughout the year.

**Freight Car Shortage.**—The quality of rail freight service in 1947 was marred by a shortage in freight cars. During World War II it had not been possible to obtain the needed additional cars because the critical materials required in car construction were needed for military purposes. The cars available were used intensively and emerged from the war period in deteriorated and overage condition. Orders for a large number of cars had been placed in 1946, but the car builders could not get sufficient steel. The number of new cars delivered was less than the number of worn out and obsolete cars that had to be retired. The number of cars in service on Oct. 31, 1947 (1,725,357, exclusive of those privately owned), was 47,385 less than the number in service on that date in 1946. The cars on order on Dec. 1, 1947, were 125,395, including those ordered by the private car lines. At the close of the year the situation was more promising, and there was likelihood of attaining the goal of 10,000 new cars per month.

The car shortage brought many complaints about poor service, especially from shippers of grain, and was made the subject of inquiry by a congressional committee. By extraordinary efforts on the part of the railroads, and with shipper co-operation, the turn-around time of cars was reduced, so that with the smaller number of cars the railroads were able, without unreasonable delay, to handle the record-breaking volume of 1947 wheat. The total number of carloads of all commodities moved by the railroads in 1947 was 44,500,000. The comparable figure in 1946 was 41,300,000.

**Locomotives.**—In contrast to the freight car situation there was no shortage of locomotives in 1947 even though there was a reduction in the total number. The capacity of the new locomotives was very much greater per unit than that of the old locomotives which were retired. The shift from steam to diesel continued at an accelerated pace. Of the 2,155 locomotives ordered in 1947, the diesels numbered 2,075. Of the 79 steam locomotives ordered, 68 were for two coal-carrying roads—the Chesapeake and Ohio and the Norfolk and Western.

**Passenger Train Service.**—In passenger service the volume of rail traffic was smaller than in 1946 but higher than in any of the years between the two world wars. The overcrowding of trains, so common during World War II and in 1946, was corrected, and the "On Time" performance was much improved. Partly because of the competition of the bus and the air lines, there was a continuing improvement in rail service, especially in the type of recently acquired passenger train equipment and in higher train speed. The number of named streamline trains was increased to 108, with 223 complete sets of equipment. More trains were equipped with lounge and recreation cars, and in the case of coaches the new equipment had more comfortable seats, better lighting, and practically all cars in important through trains were air-conditioned.

**Operating Efficiency.**—In freight train service and the utilization of equipment, the performance statistics of the first ten months of 1947 showed substantial improvements over 1946 in operating efficiency. The average freight train load in tons of

EXCAVATING a snowbound British passenger train stalled between Manchester and Buxton, England, during the severe blizzard in Feb. 1947 which kept rail lines blocked in that area for 24 hours

freight and the average net ton-miles per train-hour were higher than ever before. In the average car load and the average car-miles and net ton-miles per car-day, the 1947 results were better than in 1946, although somewhat lower than in some of the war years.

**Capital Expenditures.**—The expansion in the railroads' investment account by capital expenditures for additions and betterments was greater in 1947 than in any year after 1923 when the railroads undertook an extensive program to make up the deficiencies from World War I. The 1947 gross capital expenditures were about $900,000,000. During the immediately preceding nine years the annual average was $459,000,000. Nearly three-quarters of these expenditures were for modern equipment, and a little more than one-quarter were for roadway and structures.

**Legislation.**—During the first session of the 80th congress in 1947 no important legislation affecting railroads was enacted, but when adjournment was taken in July, several bills were left pending. None was considered during the special session in the last two months of the year. Those bills, therefore, were on the calendar for the second session which began in Jan. 1948.

One of them, commonly known as the Bulwinkle bill, would give legislative sanction to rate-making conferences and other railroad joint actions when such actions were approved by the Interstate Commerce commission. The bill had the backing of the commission and the shippers' organizations but was opposed by the department of justice which regarded such actions as violations of the antitrust laws.

Another, commonly designated as the Reed bill, would amend section 77 of the National Bankruptcy act to afford greater protection to stockholders in railroad reorganizations. The bill was favourably reported by the respective committees of the senate and the house, but no action was taken by either branch of congress.

The so-called Lea committee, authorized by the house in 1945 to make a comprehensive study of all forms of transportation and recommend new legislation, had not completed its task within the allotted time. Its life was extended, and it was expected to report in 1948.

An attempt was made in the Howell-Hawkes bill to amend the Crosser act of 1946 by changing its provisions for sickness and maternity benefits. The house committee reported the bill favourably, but the senate committee voted to postpone action to 1948.

The St. Lawrence Seaway project was revived in 1947 by the introduction of an amended senate resolution which would approve the 1941 agreement with Canada and make the navigation feature self-liquidating by the imposition of tolls. The resolution was put over for consideration at the 1948 session.

The antitrust suit, initiated by the department of justice against an association of western railroads, the American Railroad association and certain individuals, made little progress in 1947. The second half of the year was taken up in the preparation of briefs. The defendants' reply brief was filed on Dec. 31. The suit was aimed particularly at the conference method of railroad rate making.

The long drawn out litigation over the affairs of Pullman, Inc., ended in 1947 when the stock of Pullman company and all of its cars and other equipment were purchased by a group of railroads and a new company formed to carry on the operation and servicing of Pullman cars under contracts with the individual railroads. Earlier the car building activities of Pullman-Standard had been divorced from the Pullman company which operated the Pullman cars for the railroads. The new Pullman company's board of directors had no railroad officer or other representative of railroads. In so far as the public was concerned, the conduct of Pullman service was the same as it was before the suit was brought, but there was no connection between it and the manufacture and sale of cars. The former connection was held by the courts to be a violation of antitrust laws. (*See* also DISASTERS; INTERSTATE COMMERCE COMMISSION; NATIONAL MEDIATION BOARD; UNITED STATES.)

(W. J. C.)

**Other Countries.**—In strong contrast to the outstanding events of preceding years, the most notable railway changes in 1947 were in the legislative sphere, as opposed to those of construction, reconstruction and technical progress. This postwar nationalization wave eliminated many of the company-owned-and-managed railways and converted them to government-owned-and-managed concerns, although not necessarily operated directly by a government department. Thus by 1948 the United States railways and the Canadian Pacific railway were almost the only outstanding examples of company ownership and operation.

While the nationalization of the four large British railways was the most revolutionary example of the change-over, the cases of company-owned lines in Argentina, together with some in Brazil and the proposed government ownership of the Rho-an railways, provided instances of importance to illustrate world-wide trend.

*reat Britain.*—The bill to nationalize the British railways ame the Transport act, 1947, and carried the date Aug. 6, 7. It provided for the setting up of a British transport com- sion whose duty would be to secure "an efficient, adequate, nomical and properly integrated system of public inland nsport and port facilities within Great Britain for passengers goods with due regard to safety of operation." The com- sion's powers, coinciding with the nationalization by govern- nt acquisition of the railways, operated from Jan. 1, 1948; y were to be exercised through a series of executives to cover pectively railways, London transport, docks and inland water- ys, road transport and, probably, at a later date, hotels. The irman of the commission, Sir Cyril Hurcomb, announced on v. 26 that the railway system (to be known as British rail- ys) would be organized in six regions (the London midland, western, the southern, the eastern, the northeastern and the ottish) replacing the four main-line railway company systems the London Midland and Scottish, the Great Western, the ndon and North Eastern and the Southern. The regions were visional. The rate of interest on the stock to be issued, in ce of railway stock, by the British government was not known 1947. It would undoubtedly result in a reduction of interest rges on capital.

*Europe.*—For the electrification plans that formed the greater t of European railway reconstruction, *see* ELECTRIC TRANS- RTATION.

In France and Belgium reconstruction of war-damaged rail- y facilities was forwarded with unexampled energy; passenger in services approached the pre-1939 level in terms of speed, not yet in frequency, in spite of the necessary use of many nporary bridges, speed restrictions over damaged sections and lower standard of maintenance of locomotives and equip- nt. Excellent work was done in the Netherlands where the lways had suffered disastrously from German destruction and ny large bridges had to be rebuilt; shortage of signalling uipment and rolling stock delayed the return to prewar stand- ds. Italy made rapid progress with the rebuilding of its main- e rail arteries and re-electrification of sections demolished in e war. The Swiss Federal railways celebrated their centenary 1947 and the International Railway Congress association met Lucerne in June in honour of the occasion. Progress contin- d with the doubling of the last remaining single-track sections the Gotthard international route. The Danish state railways so celebrated their centenary in 1947. In Sweden the impor- nt group of company-owned railways, known as the Göteborg- alarne-Gefle traffic group, and including the efficient Bergslagen ilway, were being taken over by the government and consoli- ted with the state railway system, thus leaving only a few es of local importance outside the government-owned-and- erated system. Further sections of line were electrified and periments were being made with oil-burning locomotives and esel traction, but France provided the leading western Euro- an example of the use of oil burners, because, as in other coun- es, of the shortage of coal.

The German railway was still operated in four sections, coin- ding with the four zones of occupation. It was understood that the lines in the Russian zone except three main arteries had en reduced from double to single track. International services ssing through Germany increased: the Paris to Stockholm ute and some of the train-ferry routes across the Baltic from rmany were reopened. Poland provided some coal for the edish, French and other railways. In Yugoslavia some rail- y construction continued, largely by voluntary workers, link- up Sarajevo with the Danube valley. Information of technical interest from Russia or its satellite countries was meagre. A through sleeping car ran between Paris and Istanbul, and, when conditions in Palestine permitted, this through-service could be extended to Cairo, with a transfer by boat across the Bosporus.

*Asia.*—The partitioning of India led to the division of the large northwestern system into two parts, one in Pakistan and the other in India; the exchange of refugees between the two territories was given temporary priority over all other traffic moves. The railway system was almost entirely run by Indians. The Palestine railways suffered grievously from racial difficulties, and the cost of reconstruction and repairs placed a heavy load on the administration. In Burma and Malaya facilities were largely reconstructed and most main-line services were reinaugurated, but little was known concerning the railways in Indo-China, in Japan or in the Netherlands Indies and China, where hostilities continued to disrupt communications almost as fast as they were repaired.

*Africa.*—The South African Railways and Harbours administration was able to record peak traffics and the arrival of much-needed new locomotives and rolling stock, while projects involving large scale capital expenditure were being carried out at Johannesburg and other centres. In Rhodesia the government determined to acquire the Rhodesian railways, which also serve the Portuguese port of Beira and Mashonaland as well as providing a through link with the South African system via Mafeking.

*Australasia.*—The New Zealand government railways continued their policy of linking up branch lines long isolated from the main lines in the North and South Islands. Shortage of coal restricted the services, and labour troubles adversely affected traffic. New Zealand was one of the first railways to introduce the principle of the 40-hour week, and the problems to surmount were not light. The proposal to standardize the gauges in the various states of Australia in accordance with the Clapp report made slow yet steady progress, but the capital cost was very heavy, and the states would require commonwealth assistance. Deficiency and the high cost of coal limited the potential mileage operated in certain of the states, and labour troubles reduced the volume of traffic. Victoria determined to make trials with powdered-fuel locomotives, and, in general, some arrears of maintenance incurred during the war period were overcome. In certain states the financial deficits on the railways assumed alarming proportions.

*South America.*—Terms for the acquisition of the foreign-

"TRAIN OF TOMORROW," an experimental passenger train manufactured by the General Motors Corp., featuring multilevel astra-dome cars, which made a six-month exhibition tour of principal U.S. cities in 1947

owned railways in Argentina were announced in 1947, although the date of transfer was made retroactive to July 1946. The price agreed for the railways and their subsidiaries was £150,000,000, but the sale had not yet been actually consummated; the question was linked with problems of currency and trade balances. The main railways involved were the Buenos Aires Great Southern, the Buenos Aires Western, the Buenos Aires and Pacific, the Central Argentine, the Argentine North Eastern and the Entre Rios railways. A similar policy was being adopted in Brazil, one railway affected being the São Paulo. Progress was made in Bolivia with the Corumbá Santa Cruz de la Sierra railway, and also in Brazil with the link between Baia and the state of Minas Gerais, the line to Monte Azul being completed early in 1947.

*Canada.*—Both the large Canadian railway systems were able to achieve virtually prewar standard of service by 1947, and important progress was made in overcoming the arrears of wartime undermaintenance. The Canadian National railway introduced diesel services on Prince Edward Island and placed a new train-ferry of notable design there; the Canadian Pacific proposed to use diesel-engine services in its operations on Vancouver Island. The financial situation was not healthy in view of steadily rising costs for labour and materials: Canada was virtually the only country with the prewar level of rates, and the railways asked for a 30% rise, but no decision was announced by the dominion government. (C. E. R. S.)

**Rainfall:** *see* METEOROLOGY.
**Raisins:** *see* FRUIT.

**Ramadier, Paul** (1888– ), French statesman, was born in May 1888 at La Rochelle. He read law at the Universities of Toulouse and Paris and, having taken his degree at the latter, in 1907 opened a lawyer's practice in Paris, specializing in the legal position of the co-operative movement. Elected deputy of the Aveyron *département* in 1928 on a Socialist ticket, he represented his constituency in the chamber of deputies until 1940. He was minister of labour in 1937–38 and minister of food in 1945–46. On Jan. 22, 1947, he was elected prime minister by the national assembly. He twice reconstructed his cabinet: on May 9 and on Oct. 22; he resigned on Nov. 19.

**Ramjets:** *see* JET PROPULSION.
**Rapid Transit:** *see* ELECTRIC TRANSPORTATION.
**Rates of Exchange:** *see* EXCHANGE CONTROL AND EXCHANGE RATES.

**Rationing.** The removal of food supplies from the wartime rationing system in the United States became complete in 1947 with the termination of sugar rationing.

Elimination of the rationing controls began in the United States on V-J day—Aug. 15, 1945. Rationing of canned fruits, fruit juices and canned vegetables ended on that date. Next to be removed from the controls were condensed and evaporated milk; these items were dropped from the point system on Sept. 12, 1945. Meats, dairy products, canned fish and fats and oils were released on Nov. 24, 1945.

Sugar for civilian consumption was in short supply in 1946, but 1947 brought a change. Higher world production, the result primarily of a great increase in Cuba's output, lifted the available supply to an approximate balance between world production and world consumption. Accordingly, the United States government ended the rationing of sugar to household consumers on

RATIONING DIRECTORY at the headquarters of a British food and registration office in London during 1947 e 12 and to industrial users on July 28, 1947. (*See* Price ministration, Office of.) (C. P. A.)

**Other Countries.**—Differential rationing scales for various groups and different types of workers were general in ope, but in Great Britain this principle was only applied to ectant mothers, children under five and merchant seamen. exception to this was to be found in the British bread ra- ing scheme, under which there were different scales for dren and young people of various groups up to 18, for mal adults, expectant mothers and for manual workers. ority milk was granted to infants, children at school, old ple and the sick; while through the system of works can- ns certain additional allowances of various foods were granted workers.

*Great Britain.*—On Feb. 2, the portion of the meat ration sisting of tinned corned meat was raised from 2*d.* to 4*d.*, total ration remaining at 1*s.* 4*d.* per week; but with effect n June 13, this portion was reduced to 2*d.*, and as from t. 7, the total ration was reduced to 1*s.*, all carcass meat. a result of the fuel crisis the sweet ration was temporarily uced during March and April, these cuts being made good r. Further alterations in the autumn were a cut in the points m 32 to 28 per four weeks from Aug. 17, a reduction of from % to 18% in foods allocated to restaurants, except where ceiling price per meal was 2*s.* 3*d.*, and the reduction from ober of the bacon ration to 1 oz. per week; banquets for re than 100 people were prohibited. On Nov. 8 potato ra- ning came into force for the first time, with a weekly allow- e of 3 lb. per person. Fewer clothes coupons were allowed the period Sept. 1–March 1. The abolition of the basic rol ration in October put an end to all private motoring by v. 30.

*Australia.*—Rationing of meat, butter, sugar, cotton and some er clothing materials continued during 1947 in accordance h a statement by the director of rationing that to discon- ue this system would show an utter disregard for the needs the British people. Sugar rationing was discontinued on y 2.

*Canada.*—Meat rationing was abolished from March 27, but o meatless days remained in restaurants. Butter, honey and n rationing was removed on June 9, and the sugar ration in- eased by 1 lb. per quarter from April 1.

*France.*—The basic bread ration was reduced on April 24 om 300 grams (10½ oz.) to 250 grams (8½ oz.) per day for all cept heavy workers; it was further reduced on Sept. 1 to 200 ams, a lower figure than at any time during World War II. Aug. 29 a decree closed butcher's shops for five days a week d restricted meat dishes in restaurants to two days.

*Netherlands.*—The meat ration was reduced from 200 grams r week to 150 on June 6, children and heavy workers being cepted.

*Italy.*—On April 3, the government announced the termina- n of political bread price and similar subsidies and an im- ediate price increase of 50%, employers being obliged to give v-paid workers an allowance to offset this. There was to be a ferential rationing system for bread, pastries, fat and other ods, with preference for people of small means. Meat was stricted to three days a week, and fresh pastries might only sold in retail shops on Saturdays and Sundays.

*Germany.*—In the Anglo-American zone the bread ration was creased on July 24 from 6,000 to 8,000 grams per month. It s announced that all Ruhr miners whose pits reached a pro- ction peak equalling the best four weeks from the end of the r would receive a U.S. food parcel equal to 40,000 calories d that a proportion of all foreign exchange earned by Ruhr al would be set aside to buy food for the miners. The normal ration scale was 1,550 calories per day. In Austria the scale was the same.

*Eire.*—Bread rationing was introduced on Jan. 18. (*See* also Food Supply of the World.) (J. Ln.)

## Rayon and Other Synthetic Fibres.

Rayon yarn production in the U.S. was about 14% higher in 1947 than in the previous year. Of the total production of 975,000,000 lb., 228,000,000 lb. were viscose and acetate staple. Of the 747,000,000 lb. of filament yarn, 501,500,000 lb. were used in the textile industry, including woven fabrics, and the knitting industry. Tire manufacturers, the new large-scale consumers of synthetic yarn, used 227,500,000 lb. of filament yarn. Exports totalled 16,000,000 lb.

Table I.—*United States Rayon Production in Millions of Pounds*

| | 1942 | 1943 | 1944 | 1945 | 1946 | 1947 |
|---|---|---|---|---|---|---|
| Rayon filament yarn . . . . . . | 479 | 502 | 555 | 624 | 677 | 747 |
| Rayon staple fibre . . . . . . . | 154 | 162 | 168 | 168 | 177 | 228 |

In the production of woven fabrics, the U.S. exceeded its previous high record of 1946 by approximately 10%. Almost 2,000,000,000 yd. of fabric in rayon were provided to textile consumers by U.S. mills in 1947. Two major types were represented, the all-filament fabrics, closest relatives of the old silk fabrics, and the spun rayons, simulating linen, wool and cotton fabrics. The fabric industry consumed about 450,000,000 lb. of filament and spun rayon, 25,000,000 lb. of cotton, 3,000,000 lb. of nylon and 56,000,000 lb. of all other yarn, other than rayon, cotton and nylon.

Table II.—*Production of Rayon Broad Woven Fabrics (Except Tire Fabrics)*

(In millions of linear yards)

| | All-filament | All-spun rayon | Comb. filament and spun rayon | All other rayon mixtures |
|---|---|---|---|---|
| 1945 . . . . . . . . | 1,018.2 | 162.1 | 159.8 | 178.2 |
| 1946 . . . . . . . . | 1,158.4 | 195.8 | 178.2 | 250.8 |
| 1947 . . . . . . . . | 1,210 | 294 | 182 | 170 |

Production of rayon knit fabric (fabric sold to the garment manufacturing industry, not knit underwear or glove fabric) reached about 113,000,000 lb., compared with 147,000,000 lb. in 1946. The decrease was primarily in the circular knit fabric, especially in the dress field, where production dropped sharply. In the warp knit division (fabric knitted flat, most closely resembling woven fabric) the year's production was about 31,300,000 lb., compared with 32,800,000 lb. in 1946. Production of circular knit goods dropped to 77,500,000 lb., compared with 98,800,000 lb. in 1946. Rayon hosiery continued at a low rate of production, resulting from the re-introduction of nylon after 1945. There was sufficient use, however, to consume about 19,000,000 lb. of filament yarn, 2,000,000 by the full-fashioned manufacturers and 17,000,000 by the seamless hosiery mills.

Prices for rayon yarn and fabric advanced in 1947, after remaining comparatively static from 1941. This stability contrasted with the general price movement on all commodities of the U.S., as well as textile products. Wholesale price index numbers (1935–39 = 100) were as follows:

| Monthly Average | All Commodities | All Textile Products | Rayon Yarn and Staple |
|---|---|---|---|
| 1941 . . . . . . . . . . . . . . | 108.4 | 119.3 | 96.5 |
| 1942 . . . . . . . . . . . . . . | 122.6 | 136.2 | 98.4 |
| 1943 . . . . . . . . . . . . . . | 145.9 | 137.1 | 98.4 |
| 1944 . . . . . . . . . . . . . . | 129.1 | 138.5 | 98.4 |
| 1945 . . . . . . . . . . . . . . | 131.4 | 140.8 | 98.1 |
| 1946 . . . . . . . . . . . . . . | 150.0 | 163.9 | 99.1 |
| 1947* . . . . . . . . . . . . . . | 186.0 | 196.6 | 119.0 |

*Based on 10 months.

World production was given impetus during 1947 by the partial recovery of Germany and Japan, which prior to World War II were the two largest producers of rayon. In the first half of 1947, Germany's plants produced almost double the amount of the last half of 1946. In staple fibre, however, the increase was only 10%. In Japan, the American military government announced a goal of 165,000,000 lb. of filament annually, and 135,000,000 lb. of staple. In 1938, Japanese production of filament yarn totalled 640,000,000 lb., and 980,000,000 lb. of staple. Figures published in 1947 stated that annual production was at the rate of 120,000,000 lb. of filament and 240,000,000 lb. of staple. One-third of the capacity was operable.

In the United Kingdom, the average monthly production of rayon yarn in the first half of 1947 was 15,800,000 lb., of which 6,600,000 was staple and 9,200,000 filament. This did not differ much from the 1946 rate of 15,000,000 lb. monthly—5,900,000 of staple and 9,100,000 of filament. Exports took 6,600,000 of the total, of which Australia received 2,300,000 and Canada, 1,700,000.

Total world production figures for 1946 were issued in June 1947, and showed an 18% increase over 1945, but still 41% below 1941, the peak year. The chief gain was in filament yarn, 22%; the staple output rose 10½%. World conditions again gave the U.S. the leading position as rayon producer. Consumption per capita also led in the U.S.—5.9 lb. per person.

The increased world production of rayon filament, 22%, was largely due to expanded facilities in the U.S. and South American countries, but European production, despite declines in Austria, Germany, Rumania and Switzerland, showed a 64% increase over 1945. The new impetus in production came from Belgium, Finland and Sweden. South America, the newest producing area, reached a production of 38,000,000 lb., 3% of the world output.

Canadian rayon production continued at about the same rate in 1947 as in 1946. In the first eight months, filament rayon output was 3,900,000 lb., compared with 3,200,000 in the same period of 1946.

**Nylon and Other Synthetics.**—Nylon, the second most important synthetic fibre, in 1947 entered the first year of its second decade, with demands for ever-increasing supply and an ever-expanding market. While principally known as a hosiery yarn, nylon was listed as being used in 62 different civilian and industrial articles, at a hearing before the U.S. congress on July 7, 1947. Production figures on nylon were not published, but 1946 production was estimated to be about 25,000,000 lb. for domestic use. The E. I. du Pont de Nemours company continued to be the sole producer. Prices of U.S. nylon early in 1947 ranged from $5.50 per pound for 15 denier, to $1.55 per pound for 210 denier.

Nylon industrial fabrics, particularly in laundry bags, pressing cloths and boat sails, were becoming staple articles. Nylon tire cords went into heavy-duty types for transport aeroplanes, bulldozers and other mechanized vehicular equipment; passenger cars did not need the margin of higher strength.

The manufacture of nylon yarn outside the U.S. was licensed by the du Pont company; in 1947, Great Britain and France were the principal licencees. Canada had a partial installation ready. To all other countries, du Pont exported 146,593 lb. in 1946.

Development of other synthetic fibres in 1947 was given new impetus by lifting of wartime controls on the use of resins. Of the synthetic yarns known as thermoplastic fibres, the two best known were Vinylite and Saran. In the fibres made from copolymers of vinyl chloride and vinyl acetate, the best known was Vinyon, mostly produced as a staple fibre. It was used principally in the manufacture of tea bags. Other uses mentioned in 1947 were for shoe materials, screening, industrial filters, bolting cloth and goods of the sheerest types.

Protein fibres (*azlon* was the new generic name proposed for the group) included Aralac in the U.S. and Lanital in Italy. Both were used in combination with stronger fibres, particularly wool, although a new use was for upholstery goods, combined with cotton.

Glass fibre was marketed as continuous filament yarn, staple fibres, mineral-wool and flock fibres. The mineral-wool type used for insulation averaged between 125,000,000 and 150,000,000 lb. in 1944–45. Fiberglas, the textile-type of fibre, including the filament and staple, reached 10,000,000 lb. in 1945, but production was reduced considerably thereafter.

(I. L. Bl.)

**Receipts, Government:** *see* Budget, National.

**Reciprocal Trade Agreements:** *see* International Trade.

**Reclamation:** *see* Canals and Inland Waterways; Floods and Flood Control; Forests; Irrigation; Soil Erosion and Soil Conservation.

## Reconstruction Finance Corporation.

The Reconstruction Finance corporation was organized and began operations Feb. 2, 1932, following its creation by the U.S. congress Jan. 22, 1932. The succession of the corporation was originally fixed at 10 years, later extended to 15 years and, pursuant to public law 132, 80th congress, approved June 30, 1947, it was extended to June 30, 1948.

The management of the corporation is vested in a bipartisan board of five directors, appointed for a term of two years by the president with the advice and consent of the senate. The board consisted in 1947 of John D. Goodloe, chairman, Henry A. Mulligan, Harvey J. Gunderson, Henry T. Bodman and Harley Hise.

The capital stock of the Reconstruction Finance corporation originally was $500,000,000, all of which was subscribed by the secretary of the treasury, and in 1941 the corporation retired $175,000,000 of the stock at par.

**Lending Activities.**—In the early part of 1947, RFC inaugurated a small loan participation program, the objective of which was to make longer-term credit more readily available to small business concerns through regular banking channels. Under the plan the corporation would consider taking a participation of not more than 75% in business loans up to a maximum of $100,000 when so requested by a bank. From the beginning of the program to June 30, 1947, the corporation had agreed to participate in 1,639 small loans amounting to $40,300,000. Including the small loan participation commitments, loan authorizations for national defense purposes and loans authorized in connection with the veterans' emergency housing program, 10,589 business loans in the approximate aggregate amount of $550,000,000 were authorized by the corporation during the fiscal year 1947. In such loans banks agreed to participate with the corporation to the extent of approximately $114,473,000.

In the more than 13 years that the corporation had been authorized to make loans directly to business enterprises, it had made commitments for 43,400 such loans totalling in excess of $3,819,000,000, including participation by banks aggregating approximately $393,136,000. More than 90% of the number of all business loans authorized by RFC had been to small business.

During the 1947 fiscal year authorizations for loans and purchases of obligations in connection with projects authorized under federal, state or municipal law were made in the amount of $1,115,000. Public law 256, 80th congress, approved July 29, 1947, limits the amount of public agency loans outstanding

125,000,000.

he corporation authorized 83 catastrophe loans amounting 383,000 during the fiscal year 1947.

FC was authorized to furnish a market for veterans' home s made pursuant to the provisions of the Servicemen's Re- stment act of 1944, as amended. The corporation's au- ity to carry on this activity expired June 30, 1947, and as of date it had purchased 11,800 such mortgages amounting 67,680,000 and had commitments outstanding to purchase oo additional mortgages in the aggregate amount of $81,- ooo.

ther authorizations in the 1947 fiscal year comprised loans ailroads aggregating $82,850,000; $347,500 to drainage and ation districts; preferred stock loans to insurance companies unting to $5,000,000; and loans to the government of the ippines in the amount of $70,000,000.

**urchase of Surplus Property for Resale to Small Business.** ecause of a ruling of the comptroller general, the acceptance pplications by RFC for the purchase of surplus property resale to small business was temporarily discontinued in ch 1947, but authority to carry on this activity was rein- ed by public law 132, 80th congress. During the 1947 fiscal approximately 13,200 sales covering surplus property, hav- a value in excess of $40,000,000, were consummated and e than 19,000 small business priority applications were can- ed because of the inavailability of the material desired.

**lonlending Activities.**—RFC was authorized to continue to rate by lease or otherwise the government-owned tin smelter Texas City, Tex., until June 30, 1949, or until such earlier e as congress should otherwise provide. During the period 1, 1946–June 30, 1947, RFC purchased $54,988,000 of tin ores and concentrates; and its sales of tin for the same od amounted to $89,716,000.

s a national defense measure a synthetic rubber program undertaken by the government in 1940 when for all prac- l purposes there was no commercial production of the prod- in the United States. RFC constructed more than 51 plants related facilities for synthetic rubber production, represent- an investment in excess of $666,000,000. These facilities e operated for the account of RFC and by the close of 1945 plants were producing at a rate of more than 1,000,000 tons synthetic rubber annually. In the fiscal year 1947, 1,531,- ,000 lb. of synthetic rubber were produced in 44 of the nts at a cost of approximately $214,000,000, and in the same iod the corporation sold 1,504,000,000 lb. of synthetic rubber a consideration of $279,800,000. RFC was authorized (pub- law 24, 80th congress) to continue the manufacture and sale synthetic rubber until March 31, 1948, and to carry on essen- research in connection with the development of the syn- tic rubber industry.

During 1946 and 1947 the RFC, through its subsidiary U.S. mmercial company, was engaged in selling merchandise made ilable to it in Germany, Japan and Korea by the United tes military authorities. The primary purpose of the pro- m was to provide dollar exchange for use by the United tes military authorities in facilitating administration in those as.

During the fiscal year 1947, sales amounted to approximately 9,400,000.

**Liquidation Activities.**—A substantial number of industrial nts and other war facilities owned by RFC and representing investment of more than $6,000,000,000 had been sold, de- red surplus to War Assets administration or disposed of erwise. During the fiscal year 1947 RFC declared surplus nts and other such facilities in which its aggregate invest- nt amounted to more than $2,000,000,000. The corporation held such plants and other facilities, with a book value of $1,245,000,000 as of the close of the fiscal year, exclusive of the synthetic rubber plants, the Texas City tin smelter, and the fibre plantations in Central America, Panamá and Haiti. The corporation's investment in the fibre plantations amounted to $13,280,000.

Certain assets of the Smaller War Plants corporation, including plants, equipment and outstanding loans receivable, were transferred to RFC pursuant to executive order of Dec. 27, 1945. In the fiscal year 1947, RFC declared surplus to War Assets administration equipment formerly owned by Smaller War Plants corporation, representing an investment of approximately $1,700,000. The investment at the close of the fiscal year in the remaining lands, structures and equipment amounted to $4,349,000.

The purchase and sale of certain strategic materials and supplies which the RFC had bought and sold during World War II were continued during the fiscal year 1947. Purchases amounting to approximately $535,000,000 of such commodities were consummated in the fiscal year, comprising principally natural rubber, alcohol, molasses and copper. Sales for the same period were in the aggregate amount of $884,300,000. From 1940 when RFC began the acquisition of strategic minerals, metals and other critical and strategic supplies to June 30, 1947, it had expended approximately $9,681,000,000 for this purpose. During the same period its sales of such commodities and materials amounted to $9,505,000,000.

The activities in connection with the liquidation of the affairs of RFC's subsidiary War Damage corporation during the fiscal year 1947 comprised primarily the settlement of claims requiring the expenditure of approximately $893,000 and the continuation of the audit of the insurance companies which acted as its fiduciary agents. Through the facilities of 546 fire and 88 casualty and surety insurance companies, acting as fiduciary agents of the corporation, more than 8,700,000 policies or renewal certificates were issued representing a potential liability of approximately $140,000,000,000. The fire insurance companies had a participating interest in the operating profits or losses of the program up to a maximum of $20,000,000, and the casualty and surety insurance companies had a like interest limited to $5,000,000. Gross premiums collected amounted to approximately $250,000,000 and the net profits realized from the operations of the program in the amount of $209,827,810 were paid into the United States treasury.

During the period from Feb. 2, 1932, date of organization of the corporation, through June 30, 1947, loans and other authorizations made by the RFC with respect to its lending activities and loans to its war subsidiaries aggregated $42,390,-301,523, including $4,914,603,216 for allocations and loans to other governmental agencies and for relief by direction of congress. Of the total amount authorized, $5,275,892,607 was withdrawn or cancelled and disbursements totalled $36,023,-428,933. The amount outstanding at June 30, 1947, was $2,-057,454,140 after repayments and other credits amounting to $33,965,974,792. (J. D. G.)

**Reconversion:** *see* BUSINESS REVIEW; LAW; RATIONING.

## Red Cross.

**United States.**—Two events stood out in the history of the American Red Cross during 1947. First was a reorganization under which chapters were given greater voice in determining Red Cross policies. The Central committee was abolished and replaced by a board of 50 governors—30 elected by chapters, 8 appointed by the president of the United States (one designated president of the Red Cross) and 12 members at large elected by the other 38. The reorganization was voted by congress and signed in May, 1946. President Harry S. Truman appointed Basil O'Connor, who had been serving as chairman of the Red Cross since July 1944, president of the organization for a three-year term.

The second event was inauguration of a new national blood program to furnish whole blood, plasma and eventually other derivatives, without charge for the products, to the entire nation. The program would require three to five years to reach full operation, and approximately 3,700,000 pints of whole blood annually would be needed. Preliminary organization was completed by the end of 1947, and the first blood centres were scheduled to open in 1948. Donors in small towns and rural districts were to be reached by "bloodmobiles"; the donations thus collected would be returned to originating communities after processing.

Disaster relief operations, financed by allocations of $11,000,000, were greater in 1947 than in any of the preceding 10 years. Aid was provided to more than 300,000 victims. Principal disasters calling for Red Cross assistance included the tornado at Woodward, Okla., and the nearby towns of Glazier and Higgins, Tex.; the Texas City explosions and fires; the June floods in seven midwestern and eastern states; the Florida-Gulf states hurricane in September and the New England forest fires in October.

Claims Service representatives handled 1,095,832 claims of veterans or their beneficiaries for government benefits. Paid field directors were serving in 116 veterans' administration hospitals at year-end, assisted by 11,000 Red Cross chapter volunteers working on regular schedule to provide programs of recreation and entertainment for the hospitalized. Chapter Home Service workers aided veterans or their families with personal problems in 2,029,000 instances, and similarly helped families of servicemen upon 1,658,000 occasions.

Camp Service field directors aided servicemen upon 1,236,300 occasions in the U.S. and overseas in coping with problems affecting the welfare or morale of the individual or his family. Medical social workers performed similar services for the hospitalized, and recreation workers conducted well-rounded programs for occupation forces. Emergency financial assistance to men and women in uniform totalled $3,778,100. An agreement was reached with the army and navy under which Red Cross overseas club operations would be gradually turned over to the armed services, the change-over to be complete by March 31, 1948. Traditional camp and hospital programs overseas were to be continued.

In addition to the blood program, health activities included instruction in safety, home nursing and nutrition. At the end of 1947, Red Cross instructors in water safety numbered 21,000; in first aid, 29,000; and in accident prevention, 7,000. Persons completing water safety courses numbered 470,390, of whom 91,239 qualified as Red Cross life savers. First aid trainees numbered 346,871, while 31,723 persons received training in accident prevention. The Nutrition Service issued 37,754 certificates to persons completing classes, and home nursing 118,340. Red Cross public health nurses made 351,600 visits to persons needing their assistance.

More than 275,000 trained volunteers served a total of 25,000,000 hours. Production workers made 2,565,200 garments and other articles for use in relief and other activities. Canteen workers served 3,145,000 persons; the Motor Service made 668,600 trips.

Expansion of Red Cross College units continued during 1947, with groups active on the campuses of 239 institutions of higher learning. They served veterans and their families attending college, promoted Red Cross classes in water safety, first aid and other subjects, and worked with Red Cross chapters in their service programs on behalf of hospitalized veterans, servicemen and civilians.

The Junior Red Cross continued its program of educationa rehabilitation by sending school and other supplies valued a $1,832,200 to children in war-devastated countries. With a enrolment of 19,270,800 members, it also furnished Navaj Indian children with cod liver oil, eye glasses, first aid kits, woo cloth, blankets, sports and educational equipment.

(H. BM.)

**World.**—The League of Red Cross societies sponsored tw regional conferences during the year. The first, held at Caracas Venezuela, in February brought together most of the representatives of the 22 societies of the western hemisphere. The delegates worked out plans for greater co-operation among the societies in the relief of disaster victims, discussed new health programs, and called particular attention to the need for continued aid to war victims abroad. The second, in September a Belgrade, Yugoslavia, was concerned principally with problem of postwar relief and health programs.

Two meetings of the board of governors of the league wer held, one in Paris in May, the second in Geneva, Switzerland in September. At the latter meeting the newly organized Red Cross societies of the Philippines and Syria were admitted to league membership, raising the number of member societies to 64 with a combined world-wide membership of more than 100,000,000.

The International committee of the Red Cross—an independent body of Swiss citizens—brought together in Geneva in March representatives of the principal Allied governments to discuss revisions of the Red Cross treaties and the development of a new convention to protect civilian populations in war time The committee continued its efforts to aid war prisoners still held by Allied governments and called for their earliest possible repatriation.

A number of the national societies initiated new blood donor programs or expanded this service during the year, including the United States (*see* above) and Canada. The Netherlands Red Cross further developed its nation-wide blood service, and many other European societies showed increased interest in blood programs. The Danish Red Cross conducted antituberculosis vaccination programs in a number of European countries.

Disaster relief continued to demand Red Cross attention throughout the world. The American Red Cross aided flood sufferers in England and famine victims in Rumania. Floods in Bulgaria, explosions in France and Spain, fires and earthquakes in South America found the various national Red Cross societies taking significant part in relief work.

The division of India was reflected in Red Cross organization there with plans developed for a Pakistan Red Crescent to succeed the Indian Red Cross in the new Moslem country.

The Japanese Red Cross concentrated on a new peacetime program and held its first postwar fund campaign. A new Red Cross in U.S.-occupied Korea was formed. German Red Cross units in the western zones of Germany gave special services to returning war prisoners and developed nursing and other civilian services.

(*See* also PRISONERS OF WAR.) (P. E. R.)

**Re-employment of War Veterans:** *see* SELECTIVE SERVICE.
**Reforestation:** *see* FORESTS.
**Reformed Church:** *see* PRESBYTERIAN CHURCH.

**Refugees.** The departure from Germany of 2,000 Ukrainian Mennonite refugees for Paraguay in Jan. 1947 initiated the movement of refugees in resettlement which gained increasing momentum during the year. In 1945 the substantial

ow: MARIONETTES being fashioned by a young inmate of a displaced persons' camp in Europe
ing 1947

Above: NEWSREEL captioned "children looking for their parents," a 1947 device used in German theatres for reuniting families separated during the chaotic last months of World War II

bove: JEWISH CHILDREN among the 4,300 refugees aboard the
Exodus 1947" bound for Palestine, who were transferred under protest
British vessels at Gibraltar and returned to Hamburg, Germany, in
ug. 1947

Below: DISPLACED PERSONS being transported from Lecce, Italy, to a new camp established for them by U.N.R.R.A. near Bari in 1947

movement from central Europe had been in repatriation to the home countries of eastern and western Europe from which over 8,500,000 slave labourers and concentration camp victims had been drawn during the war. By the end of 1946 this movement, which comprised more than 7,000,000 victims of German labour recruitment policies, had come to an end, leaving behind as the hard core of nonrepatriable displaced persons approximately 1,000,000 Poles, Ukrainians, Balts, Yugoslavs and Jewish refugees who were unwilling to return to their former countries. They preferred the meagre existence of camps and assembly centres and the uncertainties of resettlement in other countries to return to their countries of origin in which such profound political changes had taken place as to make life unattractive.

The Intergovernmental Committee on Refugees, whose efforts to resettle refugees had been handicapped in 1945 and 1946 by the limitations of shipping and the rigid controls of the occupying authorities on the exit of persons from Germany and Austria, concluded agreements with Brazil, Venezuela, Peru, Chile, and other Latin American countries for resettlement of refugees on the land and in industry.

Four ships were chartered from the U.S. army to shuttle refugees across the Atlantic to South America and Canada. During 1947 British and Norwegian ships joined the fleet to expand the movement in resettlement to Australia and the Argentine. Under President Harry S. Truman's directive of Dec. 22, 1945, some 28,000 displaced persons had been given visas of admission to the U.S. by Dec. 1947. Twenty thousand had been recruited for work in Belgium, and 30,000 had been received in England under the movement known as Westward Ho. Canada announced its willingness to receive refugees nominated by relatives already resident in the dominion and to accept for employment an additional 20,000 workers in lumber, textiles, domestic service and industry. Australia initiated its program of selecting 20,000 immigrants from among the refugees in Europe in the fall of the year. The Netherlands announced recruitment plans involving the selection of 8,000 workers. Conservative estimates were that more than 110,000 displaced persons had started life anew in countries of immigration at the end of the year as the forerunners of many more thousands to come in the following two years.

Governments were slow in responding to the appeal of the United Nations to join the International Refugee organization, which was proposed as the international agency to deal with the problem of refugees and displaced persons. The constitution of the I.R.O., adopted by the general assembly of the United Nations at its meeting in New York in Dec. 1946, provided that the organization would come into being when 15 nations had ratified the constitution. Allocated contributions of member nations totalled 75% of the provisional budget of $155,000,000 for the first year's operations. By Dec. 31, 1947, only 11 governments, Australia, Canada, China, Guatemala, Dominican Republic, Iceland, the Netherlands, Norway, New Zealand, Great Britain and the United States had ratified the constitution. Their contributions to the budget totalled 70.14%.

Pending activation of the International Refugee organization, the preparatory commission for the I.R.O., consisting of 20 governments which had either ratified the constitution or signified their intention to do so, assumed operating responsibility for the problem by accepting the functions of U.N.R.R.A. and the Intergovernmental Committee on Refugees, which terminated their activities on behalf of refugees on July 1, 1947. The preparatory commission was handicapped by inadequate funds, a substantial portion of which had to be expended on the care and maintenance of refugees in the camps in Germany, Austria and Italy. The possibility of exploiting all available opportunities for resettlement, particularly in overseas countries, was thus precluded.

The urgency of resettling refugees at the earliest possible time was highlighted by withdrawal of the Allied military forces from Italy in Dec. 1947 and by the difficulties experienced in drafting the Austrian peace treaty. The eastern European governments made persistent demands for repatriation of their dissident nationals and repeated charges that those resisting repatriation were mostly war criminals, quislings or traitors or that they were being misled by political enemies of their home countries. Upon the withdrawal of British and U.S. troops from Italy it was feared that demands for repatriation of the estimated 150,000 refugees in Italy, mostly Yugoslavs, could not be resisted by the Italian government. The latter, however, gave public assurances that it would protect the right of the refugees to choose between repatriation and resettlement in other countries. In Austria negotiations on the peace treaty were delayed in part by the demand of the Soviet government that all refugees and displaced nationals of United Nations countries and *Volksdeutsche* from the Balkan countries alike be removed from Austria. These two groups totalled approximately 450,000, of which 250,000 were *Volksdeutsche* who had fled into Austria after the war, chiefly from Yugoslavia. They constituted a real burden on the Austrian economy and threatened constantly to create serious political tensions among the occupying authorities and within the government.

Jewish refugees in central Europe numbered more than 200,000, the majority of whom had fled from Poland during 1946 and early 1947. Their destination was Palestine by any available route. During the summer of 1947, 20,000 Jewish refugees from Rumania infiltrated into Austria, Germany and Italy in flight from political and economic pressures which severely restricted their opportunities for a livelihood. This movement slowed down in the fall of 1947 as tighter controls were imposed on the Rumanian-Hungarian border. The hopes of Jewish refugees were raised by the action of the United Nations general assembly in voting for the partition of Palestine.

Integration in the German economy of the 6,000,000 members of the German minorities of Poland, Czechoslovakia and Hungary whose transfer to Germany had taken place under the Potsdam agreement proceeded very slowly during 1947. Their presence was resented by the Germans, who were forced to share their limited rations and housing facilities. Because of the overcrowding in Germany, the movement of *Sudetendeutsche* from Czechoslovakia was halted before its completion, leaving approximately 160,000 persons arrested in the process of expulsion. Denmark was forced to maintain within its borders more than 100,000 Germans whose repatriation could not be arranged. Smaller numbers of *Reichsdeutsche* and *Sudetendeutsche* whose ultimate destination was Germany were also held in Austria pending arrangements for their reception.

Immigration legislation to admit 400,000 refugees and displaced persons to the United States in excess of existing quotas was the subject of heated debate in the U.S. congress and was widely discussed in the press. Prospects of favourable action on this legislation raised hopes that a substantial reduction in the displaced persons population of central Europe might be achieved.

In anticipation of meeting the manpower requirements of the "Marshall plan" countries, the preparatory commission for the I.R.O. was assembling data at the turn of the year on the occupations and skills of refugees and displaced persons. The employables were estimated to number more than 500,000. In addition, the preparatory commission listed opportunities for the resettlement of more than 250,000 refugees during 1948 in Latin American countries, England, Canada, Australia and the western European countries. These resettlement agreements 'e in process of renegotiation as the quotas of original agree- ıts approached fulfilment.

n the far east, more than 2,000,000 Koreans had been re- riated to Korea since 1945. Approximately 1,000,000 re- ned from Japan, where some 2,000,000 labourers and their ıilies had been taken during the war for employment in in- try. Included also were some 500,000 from north Korea and roximately 350,000 from Manchuria. More than 800,000 anese were repatriated from Korea to Japan during 1946 and 7, including some from the Soviet zone of occupation.

Repatriation of Japanese from China continued during 1947. the estimated 2,000,000 at the end of the war, 1,500,000 had n repatriated by the close of 1947. The repatriation of over- s Chinese from China to the Philippines, the Netherlands lies, Siam, Burma and Indo-China proceeded more slowly ing to delay in immigration procedures in the receiving ıntries. Because of disturbed internal conditions in China, places of final settlement of the 20,000,000 Chinese displaced ing the war appeared likely. (*See* also Jewish Religious e; Prisoners of War.)

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**lay Racing:** *see* Track and Field Sports.

**lief.** The main attention in administration of relief in the United States during 1947 was to raise payments to et the rapidly increasing cost of living. Congress authorized reases in the subsidies when matched by similar increases ide by states. A complicated formula was adopted in the tegories of old-age assistance and aid to dependent children, oviding for about the same potential increase in the two tegories. Congress suggested that the states allow enough to et the budgetary deficit in each family, irrespective of fed- al grant; a few states such as Massachusetts had adopted this ethod from the first days of the Social Security administra- n.

The categorical assistance program—old age, dependent chil- en and blind—was liberalized by the states in some respects easing the requirements of eligibility, such as time of resi- nce in the state; but on the other hand there was a general ovement to enact laws which would place a lien upon the operty of a deceased beneficiary, whereby the state would imburse itself.

The American Public Welfare association estimated in Sept. 47 that 1 out of 3 in the country more than 65 years of age as receiving public assistance; 1,750,000 children and 80,000 ind were receiving assistance under the Social Security law; arly 2,000,000 were receiving unemployment compensation; d 3,000,000 former servicemen, their families or survivors ere receiving benefits through the Veterans' administration.

**Australia.**—At the end of 1946 a constitutional amendment as ratified empowering the dominion government to make tion-wide provisions, in addition to invalid and old-age pen- ons, for maternity allowances, widows' pensions, child endow- ent, relief for the unemployed, sickness benefits including edical care, hospital benefits and drugs, allowances to students d family allowances. The question of abolishing the means st was also under consideration. Some of these services had en in operation in parts of Australia for years, but in 1947 they were consolidated under a national administration and nationally aided finance.

Australia thus adopted the same simplified structure of relief benefits as that of New Zealand, except that in the latter dominion the worker and employer had to pay a large share of the total cost to a plan approximating social insurance. In Australia the whole financial responsibility rested upon the governmental authorities, dominion and provincial. In New Zealand there was no means test.

**Great Britain.**—Progress toward implementing the Beveridge report during 1947 was mainly in the social insurances, in which the pattern first established by New Zealand was followed in the main. Seven distinct governmental authorities concerned with various aspects of social insurance were consolidated into a single department: the ministry of national insurance. Instead of separate and different rates for the different types of protection, premiums for both worker and employer were consolidated into one payment: 4*s* 11*d* a week from the worker and 4*s* 2*d* a week from the employer. Similarly, benefits were placed on a flat basis. While the consolidation was not to be fully effected until July 5, 1948, certain provisions, such as old age, blind and widows' (insurance) pensions, with their insured benefits, were adopted early in 1947. This action had a bearing on relief, as supplementary grants to pensioners were made by the assistance board, on evidence of need. The need for such grants was greatly decreased by the more adequate insurance pensions.

Reorganization of relief remained in the planning stage, but it was contemplated that the whole system of public outdoor relief be nationalized and modernized, leaving with the local authorities only institutional care for the aged and infirm, or special services for the deaf, the blind and physically handicapped.

Reflecting this acceptance of complete public responsibility for the care of foreseeable distress, the London Charity Organization society changed its name to the Family Welfare association, and limited its function to counselling and advice on family matters, including advisory service on available governmental resources.

**Canada.**—By 1947 Canada was spending more than $200,000,000 a year in its grants to families in behalf of their children. Although the plan of giving allowances to families in the lower-income group in partial support of the children was employed only in Great Britain and the English-speaking dominions of the British empire, in Canada it had reached dimensions almost equal to the total per capita expenses for public welfare in the United States.

Parliament increased old-age pensions by $10 per month to offset the rise in cost of living; such payments had to be matched by the provinces. It also suggested that the provinces raise their own grants for old-age assistance and aid to dependent children beyond the sum required for matching the national grant. (*See* also Child Welfare; Community Chest; Municipal Government; Red Cross; Social Security.)

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**Relief and Rehabilitation Administration, United Nations:** *see* United Nations Relief and Rehabilitation Administration.

**Religion.** Only about one-third of the world's population can be credited to the systematically organized religions whose members could in any precise sense be counted, and even with respect to these, exceedingly wide margins of uncertainty

CANADIAN NUNS at a candlelight ceremony during the mammoth Marian congress held at Ottawa in June 1947. Thousands of Catholics attended the five-day international congress honouring the Virgin Mary

exist. In the U.S.S.R., for example, it was highly uncertain in 1947 how many adherents to the Eastern Orthodox Church had survived the long-continued soviet antireligious policy. It was known, however, that some 3,500,000 Uniate Catholics had transferred from the Roman Church to Eastern Orthodoxy as a result of the changed political affiliations of the eastern European states.

The *American Jewish Year Book* for 1946–47 ventured for the first time after World War II to estimate the number of Jews in the world. Its figures had been reduced from 16,600,000 to about 11,000,000, of whom about half lived in the United States and Canada. Fresh postwar compilations of the strength of religious bodies in Europe increased the estimated number of adherents to Roman Catholicism, Eastern Orthodoxy and Protestantism, but do not fit into any estimates for the rest of the world.

Physical and political conflicts based on religion were increasingly frequent and acute during 1947. Within particular nations, relations between church and state became newly sensitive. Decisions of the U.S. supreme court were felt by many to obscure the historic separation of church and state. In Great Britain, discussions raising the question of the disestablishment of the Church of England were coupled with proposals for the continued legal co-operation of church and state. In other parts of the world, policies aiming either at the outright control of the church by the state, or the virtual control of the state by the church, had aggressive expression. Conflicts between enormous masses of people, based on differences of religion and culture, flared into violence, notably between India and Pakistan, and between Jews and Arabs in the near east.

When religious operations had sought to cross national boundaries, as in the case of Christian foreign missions, the receptiveness of one culture to influences from another had steadily diminished. Nationalism had increasingly identified its inherited religions with political identity and safety of the newer states. This tended greatly to limit freedom of religious propaganda, and was in direct conflict with efforts of the United Nations to set up a world charter of religious freedom, including the right of adherents to one faith peaceably to propagandize adherents of another.

In the United States, theological conflict between elements within the Protestant churches reached a new decisiveness. Thus the conservative wing of the Northern Baptist churches set up a counterorganization to the parent body, substantially establishing another denomination. The ultra-conservative American Council of Churches, long in opposition to the Federal Council of Churches, announced a meeting for the purpose of organizing a rival World council, to be held in Amsterdam, Holland, on the week preceding the organizing session of the World council in 1948.

Tensions between Protestants and Roman Catholics in the United States took on a new frankness of expression. High Catholic dignitaries charged Protestants with cultural narrowness and bias, and Protestants alleged un-American political policies on the part of the Catholic Church. The Association of Protestants and Other Americans United for the Separation of Church and State, organized during 1947, disclaimed religious opposition to Catholicism, but based its position on the alleged purpose of Catholicism to secure public tax funds for the support of sectarian schools and institutions, as evidenced in the North College Hill, Ohio, case.

The issue of church and state, as related to the use of released public school time for religious instruction by the churches, seriously divided Protestant sentiment. The most fundamentalistic wing of Protestantism and the most secularistic found themselves curiously lined up together in the filing of briefs before the supreme court opposing released school time. The major body of middle-of-the-road denominations favoured and desired to extend it on the basis of interfaith co-operation.

Considering the world as a whole, Protestantism definitely moved away from the disposition to leave political matters exclusively to the state. It asserted more aggressively the responsibility of the church for leadership in determining the policies of economic and world order. This trend was strongly evidenced in the reorganized and strengthened Lutheran World Federation, established at Copenhagen during the year.

Coincident with numerous conflicts involving religious differences, strong movements were underway during 1947 to com-se differences. There was a consolidation of theological think- g about a common position somewhat to the right of that rmerly held. In the U.S. and Europe the recovery of a Bible- ntred emphasis in Protestantism was marked. The relationships tween theologians of different communions and nationalities they made preparations for the World Council of Churches 1948 convinced them that they had more in common than s supposed, and that their agreements were increasing.

Evidence accumulated that multitudes of people were look- g with new expectation to religion to overcome the perplexities d fears of the disorganized times. A nation-wide survey con- ucted by a columnist in the New York *Herald Tribune* asked hat public leaders were doing the most good for the country. he answers rated religious leaders first, and Congressmen last. his survey showed that rural people and the poorer elements population were currently the most responsive to religion.

The relief and rehabilitation of countries devastated by World ar II and its aftermath were special objects of religious con- ern and responsibility. Thus Protestant and Eastern Orthodox hurches, uniting in the organization called Church World ervice, contributed $14,500,000 in money and goods during 47—an advance of more than $1,000,000 over the previous ear; a goal of $24,000,000 was set for 1948. Reports of the epartment of commerce, however, showed that the highest de- ree of support for religious work of all denominations occurred uring the depression of the early 1930s, and that the nation ad failed to contribute correspondingly in the postwar era of rosperity. The proportion of the national income devoted to eligion and philanthropy in 1947 was the smallest in 30 years.

The 1947 session of the Conference of Science, Philosophy nd Religion in Philadelphia discussed the possibility of a "re- gion for one world," expressed in many forms but having a ommon centre of ultimate loyalty, and proceeding through a o-operative effort to discover truth. In its most believing and spiring moods, religion had always remained convinced of the ossibility of harmonizing the conflicts of humanity, conquering s ills, and integrating the world into an ordered, peaceful and utually helpful whole. For large numbers of Protestants and astern Orthodox churches this hope was newly symbolized by he World Council of Churches—a sort of religious counterpart f the United Nations. The council in 1947 united 127 denom- nations or national churches in 39 countries on all continents. (*See* also CHRISTIAN UNITY; CHURCH MEMBERSHIP; also under eparate denominations.) (H. P. D.)

**Religious Denominations:** *see* CHURCH MEMBERSHIP.

# Reparations.

**Germany.**—The slow progress in reparations allocations and deliveries in late 1946 and arly 1947 was regarded with concern by members of the nter-Allied Reparations agency. Their pressing rehabilitation eeds made it important that they secure as soon as possible a hare of the more than 1,600 plants set aside for reparation rom the three western zones by the Allied Control council in March 1946 when the first level-of-industry plan was adopted.

Accordingly, the problem of economic unification was high n the agenda at the Moscow meeting of the Council of For- ign Ministers (March 10–April 24, 1947). However, the U.S.S.R. set as the price for unification the payment in repara- ions of $10,000,000,000 (at 1938 prices), payable in capital quipment, external assets, and from current production over a eriod of 20 years.

Both the United States and Great Britain rejected this de- nand. They contended that no reparations from current pro- luction were contemplated by the Potsdam declaration which, hey said, superseded the Yalta agreement, upon a hitherto unpublished clause of which the soviet claim was based. Moreover, payments from current production would delay Germany's return to a self-supporting basis, and thus indirectly increase the Anglo-American occupation burden.

After the meeting military authorities resumed the allocation of factories to I.A.R.A. and dismantling proceeded. However, according to an I.A.R.A. report released on July 17, reparations allocated to it during the 18 months ended June 30, 1947, included only 262 German merchant ships of 750,995 gross tons valued at $48,869,000 and industrial equipment valued at 138,275,378 rm. (1938 value). Reports of the British and U.S. zone commanders issued in August showed that up to the end of July only 79 plants had been dismantled in the U.S. zone and 39 in the U.K. zone.

The U.S. and British governments announced a revised level-of-industry plan for the combined Anglo-American zones on Aug. 29. The effect of the new plan would be to return sufficient industrial capacity in the bizonal area to approximate the level of industry prevailing in 1936. As a result, on Oct. 16 Anglo-American authorities made a downward revision of plants to be dismantled from more than 1,600 to 682, of which 186 were in the U.S. zone. Including 176 plants to come from the French zone, the total value was unofficially estimated at about $1,000,000,000. The list involved about 1% of the total number of plants in western Germany. Of the Anglo-U.S. total of 682, 302 were strictly war plants and 380 were industrial plants.

U.S. authorities said the announcement of the new list "opens the way for the resumption of normal allocations to the U.S.S.R." They added that all plants already allocated to the U.S.S.R. were in the process of dismantling, but said no further dismantlings would take place until further allocations were made by the Allied Control council.

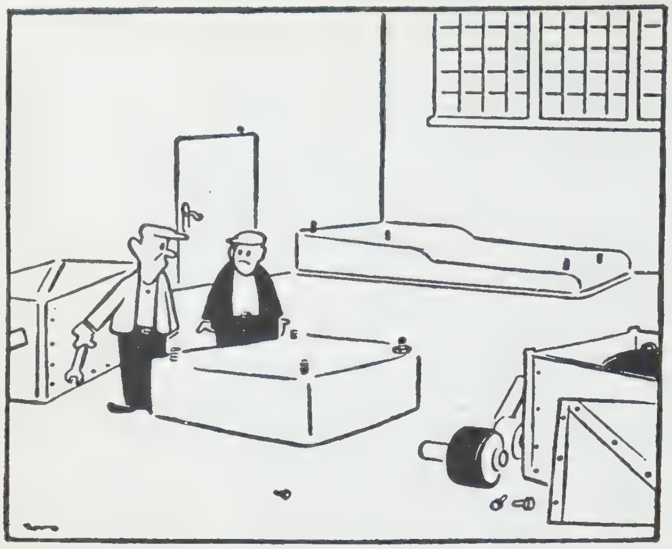
The reparations removal program aroused opposition among the Germans themselves as well as in certain circles in Great Britain and the United States. In the latter part of 1947, several U.S. congressmen demanded the cessation of shipments, particularly to the Soviet Union.

Reparations emerged as a key issue at the London meeting of the Council of Foreign Ministers (Nov. 25–Dec. 15, 1947). Vyacheslav Molotov renewed the soviet reparations demands which had been made at the Moscow meeting. Gen. George C. Marshall and Ernest Bevin categorically rejected these demands, although the French delegation, as at Moscow, indicated it was not opposed to them in principle.

With the failure of the London conference, the United States ceased reparations deliveries to the U.S.S.R. in December, and a similar move was contemplated by Great Britain. Moreover, dismantling in both zones was reported to have come to almost a standstill, despite the urgent need of other European nations for German surplus capital equipment.

Little information was forthcoming in 1947 on reparations activities in the soviet zone, but it was apparent that removals were substantial. Data contained in a U.S. military government report, *Economic Data on Potsdam Germany,* released on Nov. 9, gave rise to estimates that the U.S.S.R. had taken about $1,250,000,000 worth of reparations from current production in its zone since 1945. At the London meeting Bevin said the U.S.S.R. had taken "considerably more than $7,000,000,000" worth of reparations from its zone. Marshall more conservatively estimated the annual rate of removal at more than $500,000,000.

**Austria.**—It was agreed at Potsdam that no reparations would be exacted from Austria, but the U.S.S.R. was to be entitled to all German assets in eastern Austria. Difficulties ensued on the formulation of a definition of German assets. At the Moscow meeting the basic cleavage was on the inclusion



"NOW WE CAN DELIVER REPARATIONS FROM CURRENT PRODUCTION," a caustic barb directed at Allied reparations policies in Germany which appeared in the *Hannoversche Presse* during 1947

(opposed by the United States and Great Britain) of assets taken by the Hitler regime by force or duress from Austrian citizens and U.N. nationals.

After the close of the meeting the matter (along with other disputed clauses of the proposed Austrian treaty) was referred to the four-power Austrian Treaty commission which met in Vienna from May 12 to Oct. 11, 1947. The commission made an extensive examination of the basic types of German assets, but again reached no agreement.

Shortly before the London meeting in November, a French compromise proposal was submitted to the deputies of the foreign ministers. Bypassing a definition of German assets, the plan reportedly would give the U.S.S.R. one-third of the Austrian oil production and most of the Danube shipping plus $100,000,000 in reparations from current production and industrial equipment in lieu of the soviet claims.

The U.S.S.R. not only rejected the proposal at the London meeting but refused to put forward any concrete claims of its own. However, the matter was again referred to the deputies at the close of the conference, and there were indications that some sort of an agreement might be reached. Still unresolved, however, were the Yugoslav claims made at the Moscow meeting for $150,000,000 in reparations from Austria.

According to an Austrian government statement issued on Nov. 27, the total value of industrial equipment removed by the soviet authorities from their zone after 1945 amounted to 700,000,000 schillings.

**Japan.**—The end of the year found the Far Eastern commission (F.E.C.) still trying to determine, on a broad political basis, the shares of reparations which each particular country should receive. However, a policy decision approved on May 8, 1947, provided that in determining the shares, account should be taken of the damage suffered by each country as a result of Japanese aggression and of the contribution made by each country to Japan's defeat, "including the extent and duration of its resistance to Japanese aggression." Approval was given to the exaction of reparation from current production.

One of the stumbling blocks in the determination of shares was the Soviet Union's contention, in claiming reparations from Japan proper, that the industrial facilities which soviet forces had removed in a wholesale fashion from Manchuria should be regarded as war booty, and not be included in reparations discussions.

A policy decision approved by the commission on May 22 stipulated that in selecting plants for removal, S.C.A.P. (supreme commander for the Allied Powers) should give preference to facilities employed in war industries and war-supporting industries, particularly those owned by Zaibatsu concerns and other large combines. Another decision approved on Aug. 14 provided for the destruction of all special-purpose munitions machinery. S.C.A.P. was to make available for claim as reparations "all other industrial machinery and equipment in primary war industries and such other industrial facilities in secondary war industries and war-supporting industries as may be in excess of the peaceful needs of the Japanese economy."

Early in September the entire Japanese reparations program was attacked by Clifford S. Strike, an industrial engineer who had served as chairman of a special committee on Japanese reparations which had been dispatched to Japan in January by the U.S. war department. He claimed that the F.E.C. policy of large reparations removals meant economic disaster for Japan and took issue with reports made in 1946 by U.S. Ambassador Edwin W. Pauley recommending about a 30% reduction in industrial capacity. Pauley's reports had formed the basis of most of the F.E.C. policy decisions. According to Strike's unofficial report, his committee had recommended limited reparations removals, but he said these removals would involve only a small percentage of the 1,100 plants already earmarked by F.E.C. representatives in Japan.

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**Representatives, House of:** *see* Congress, United States; Elections.

## Republican Party.

The Republican party's principal objective in 1947 was to set a record that would justify the U.S. voters' confidence in giving it control of congress in the 1946 elections, and to gain an advantageous position for the 1948 presidential contest.

The G.O.P. had promised—and tried to achieve—government economy, tax reduction, a curb on labour excesses and elimination of Communists from various federal departments. These had been the issues on which the party had returned to power in 1946. The efforts were only partially successful, however, largely because of White House opposition.

The Republicans fell far short of their promises in cutting federal expenditures, considering house Republicans' pledge to save $6,000,000,000, and their senate colleagues' commitment of a $4,500,000,000 reduction. Senator H. Styles Bridges of New Hampshire, finance committee chairman, estimated the over-all reduction at $7,000,000,000, but this figure included enforced restoration to the treasury of unexpended balances held by various departments and bureaus. It was generally believed that the ultimate reduction amounted to approximately $3,000,000,000. Although smaller than anticipated, it represented the first step in the direction of federal economy in more than a decade.

The G.O.P. made two unsuccessful attempts to reduce taxes, figuring this to be a vote-getting issue. The first measure provided for graduated cuts, effective July 1, 1947. When the house sustained the veto of President Harry S. Truman, who argued that the measure would have an inflationary effect, congress changed the effective date to Jan. 1, 1948. Truman's second veto was overridden in the house, but the senate failed by five votes to repass the bill. As 1947 ended, the G.O.P. leadership was preparing another tax reduction bill for presentation to the regular session in 1948.

The Republicans had better luck in their anti-Communist sade; Russia's postwar recalcitrance contributed to their ccess. President Truman had originally minimized the need legislation or regulations restricting Communist activities, he eventually issued a loyalty order, providing that sus- cted subverters be screened and discharged, if found wanting. December, Attorney General Thomas C. Clark issued a list organizations considered Communistic as a guide for applica- n of the president's loyalty tests.

The Republicans also included an anti-Communist clause in e Taft-Hartley act providing that labour union officials must ake affidavit that they are not Communists, under penalty of ing all privileges under the National Labor Relations act. e house committee on un-American activities forced the in- tment of several Hollywood writers and actors for refusing answer the question: "Are you a Communist?"

The G.O.P. did not store up the expected political capital om the red issue, however. For one thing, Truman's reversal his position stole their thunder. Secondly, Moscow's hostility ward the United States made it a national rather than a rtisan question.

In passing the Taft-Hartley act over President Truman's veto, e Republicans did fulfill their pledge to try to end the post- ar industrial disputes that had threatened peacetime recovery. though its sponsors maintained that the law was designed to ee rather than penalize labour, union spokesmen denounced it a slave labour bill and threatened to work for the defeat of ery member of congress who had voted for it, regardless of rty.

The G.O.P. abandoned many traces of "isolationism" in 1947. supported President Truman's request for $400,000,000 to rengthen Greece and Turkey against Communist attack, ex- rnally and internally. With some modifications as to the nount of money and the kind of supervision, it backed the lministration's proposal for $597,000,000 stopgap aid to rance, Austria and Italy, and the long-range Marshall plan r rehabilitation of western Europe. As nearly as possible un- er the American system of politics and government, the man- gement of foreign affairs became a nonpartisan enterprise in 947.

As the year closed, however, the Republicans were engaged in sharp controversy with President Truman over his ten-point, nti-inflation program. They opposed it on the ground that his equest for selective controls over prices and wages, as well as e power to allocate basic materials, would lead to the creation f a police state. Republican senate leader Robert A. Taft eaded the fight for adoption of more conventional efforts to eck the upward trend of prices, which had already begun to rust itself forward as possibly the most explosive issue of the 948 presidential campaign.

Taft's immediate radio rejoinder to the Truman proposals, as ell as his general tendency to issue statements without making ear whether he was speaking for himself or the party, brought ild criticism from some of his associates; they thought him too recipitate, too unyielding and too conservative. They denied, owever, that their complaints constituted a rebellion against is leadership. Among his critics were Senators Ralph E. landers and George D. Aiken of Vermont, H. Styles Bridges nd Charles W. Tobey of New Hampshire, Raymond E. Baldwin f Connecticut and Wayne L. Morse of Oregon.

Three prominent Republicans announced their candidacies for e 1948 presidential nomination—ex-Governor Harold E. Stas- en of Minnesota, Senator Taft and Governor Earl Warren of alifornia. Governor Thomas E. Dewey of New York was re- arded as an active, though not an avowed candidate. Despite eir failure to announce their plans, Generals Dwight Eisenhower and Douglas A. MacArthur were frequently mentioned as possibilities.

Stassen caused continual flurry in the political dovecotes by his activities. He visited the Soviet Union and interviewed Joseph Stalin. He crisscrossed the nation for months in an admitted campaign for delegates. Although he did not mention them by name, he condemned Governor Dewey as "evasive" because of his failure to discuss national issues, and he referred to Senator Taft's program of limited aid to Europe as "miserly." He had promised to wage an unorthodox fight for the nomination, and it was generally agreed that he was living up to his promise.

There were no changes in the Republican leadership in congress during 1947. Senator Arthur H. Vandenberg of Michigan acted as president pro tem of the Senate, Wallace H. White, Jr. of Maine as majority leader, Kenneth S. Wherry of Nebraska as whip, and Senator Taft as policy committee chairman. Speaker Joseph W. Martin, Jr. of Massachusetts presided over the house, with Charles A. Halleck of Indiana as majority leader and Leslie C. Arends of Illinois as whip. (*See* also ELECTIONS; UNITED STATES.) (R. TU.)

**Research Libraries, Association of:** *see* SOCIETIES AND ASSOCIATIONS.
**Resins:** *see* PAINTS AND VARNISHES; PLASTICS INDUSTRY.
**Retail Sales:** *see* BUSINESS REVIEW.
**Réunion:** *see* FRENCH OVERSEAS TERRITORIES.
**RFC:** *see* RECONSTRUCTION FINANCE CORPORATION.
**Rheumatism:** *see* ARTHRITIS.
**Rhineland:** *see* SAAR.

## Rhode Island.

A north Atlantic state of the United States, in New England; one of the 13 original states; popularly known as "Little Rhody." Area, 1,214 sq.mi. (smallest of the United States), including 156 sq.mi. of water; pop. (1940) 713,346. The urban population was 653,383 (91.6%). On July 1, 1944, the bureau of the census estimated the civilian population of the state at 778,972. Capital, Providence (253,504). Other cities include Pawtucket (75,797); Woonsocket (49,303); Cranston (47,085); Newport (30,532); Warwick (28,757); Central Falls (25,248).

**History.**—At the regular 1947 session of the legislature, leading measures passed included the following: an act making appropriations for the support of the state for the fiscal year ending June 30, 1948, reaching total net state appropriations of $34,946,192.18, which was more than $10,000,000 increase over the previous year, of which increase $5,340,000 was to aid cities and towns and allow an increase of $600 salary to each teacher; an act to provide additional revenues for the state and its municipalities and creating as new taxes or amended taxes: business corporation tax, sales and use tax, tax upon tobacco products, tax upon gasoline and other fuels, unincorporated business tax, taxation of public service corporations, tax upon intoxicating beverages, and tax upon pari-mutuel betting; an act to encourage development of housing facilities by authorizing life insurance companies to own and operate housing projects and other real estate; an act to provide for the development of hospital facilities adequate to serve all people of the state; an act providing for the incorporation of co-operative associations; an act to provide for the establishment and operation of nonprofit school lunch programs in schools in the state; an act extending the benefits under the workmen's compensation law; a series of acts granting an additional tax exemption in the amount of $1,000 value of property of disabled veterans, exempting veterans who have suffered amputation of any limbs or are paralyzed from payment of fee for annual registration and licence to operate any motor vehicle, providing for recording of certificates of honourable discharge by veterans without payment of any fee, exempting from parking meter charges persons who by reason of amputation of limbs drive a specially constructed motor vehicle, and providing for tax exemptions on property owned by veterans' organizations; an act creating a direct primary system for the nomination of party candidates for elective office; an act proposing an amendment to the state constitution providing absentee voting (passage of second legislature).

The chief executive officers of the state elected in Nov. 1946 for 1947–48 were John O. Pastore, governor; John S. McKiernan, lieutenant governor; Armand H. Cote, secretary of state; John H. Nolan, attorney general; Russell H. Handy, general treasurer. Edmund W. Flynn was chief justice of the supreme court.

**Education.**—During 1946–47 there were in the public elementary schools 57,020 pupils and 2,003 teachers; in junior high schools 17,156 pupils and 867 teachers; in senior high schools (3 years) 15,261 pupils and 734 teachers; in senior high schools (4 years and vocational) 4,974 pupils and 234 teachers. Pupils attending private schools were: elementary 24,378; junior high 4,827; senior high (3 years) 840; senior high (4 years) 6,500. Total number of teachers in private day schools was 1,396. The director of education in 1947 was Michael F. Walsh.

**Social Insurance and Assistance, Public Welfare and Related Programs.**—The total number of persons receiving public assistance in all categories (excluding incapacitated fathers) in Nov. 1947 was 25,261 or about 3.5% of the state's 1940 population. The total amounts paid out during the year Dec. 1, 1946–Nov. 30, 1947, were as follows: general public assistance $1,610,624; soldiers' welfare $177,296 (Nov. 1946–Oct. 1947); old-age assistance $3,999,574; aid to dependent children $2,157,642; aid to the blind $65,977. In unemployment compensation, the net amount of benefit payments during 1947 was $9,801,427.81 to 51,527 different individuals. The amount paid into the fund during 1947 including interest was $13,790,972.05. There were 846 inmates in correctional institutions on Nov. 30, 1947, and 4,847 patients in charitable institutions and institutions for defectives, the number in the latter being 3,798.

**Communications.**—The total mileage of highways on Dec. 31, 1946 (excluding city streets) was 2,671.65, of which the constructed state highway system comprised 826.3 mi. At the close of the year 1946 railroads were operating 186 mi. of road. On Dec. 31, 1947, electric railways operating had 18.71 mi. of road, motor buses 201.12 mi. of road, and trackless trolleys 66.41 mi. of road. Water-borne commerce of the state for 1946 was 6,513,790 tons, of which 473,860 tons were foreign commerce (imports 439,432 tons; exports 34,428 tons) and 6,039,930 tons were coastwise (receipts 5,690,010 tons; shipments 349,920 tons). On Dec. 31, 1947, there were two public owned (state) airports, both class 3, and five private owned airports or landing fields, all class 1. In Dec. 1947 there were 210,397 telephones in service.

**Banking and Finance.**—There were 31 banking institutions in 1947. Resources of 22 banks under state supervision totalled $861,390,416.32, and of 9 banks under federal supervision $242,730,918.99. Savings deposits (exclusive of club accounts) in savings banks and trust companies (the 22 state banks) amounted to $545,366,680.41 on June 30, 1947. In addition, 6 loan and investment companies had resources of $3,747,566.04; 8 building and loan associations $73,276,472.81; 24 credit unions $12,062,696.50.

At the close of the fiscal year, June 30, 1947; total state receipts were $27,179,933.83; expenditures and encumbrances $27,161,147.35; surplus from operation $18,786.48. The state gross debt was $43,847,000.00, net debt $39,700,646.50.

**Agriculture.**—The total estimated value of agricultural production was $24,120,000 in 1947 and actual value was $21,077,000 in 1946. Total acreage of principal crops harvested was 51,000 in 1947. Cash estimated income from crops in 1947 was $6,630,000 and actual income was $5,743,000 in 1946; from livestock and livestock products $15,490,000 in 1947 and $13,227,000 in 1946; from government payments $600,000 in 1947 and $807,000 in 1946; total cash income $22,720,000 in 1947 and $19,777,000 in 1946. Products consumed on farms had an estimated value of $1,400,000 in 1947 and $1,300,000 in 1946.

Table I.—*Leading Agricultural Products of Rhode Island, 1947 and 1946*

| Crop | 1947 | 1946 |
|---|---|---|
| Corn, grain and silage and forage (grain equivalent) bu. | 352,000 | 312,000 |
| Hay (tame), tons | 57,000 | 53,000 |
| Alfalfa, tons | 2,000 | 2,000 |
| Potatoes, bu. | 1,512,000 | 1,742,000 |
| Oats, bu. | 33,000 | 32,000 |
| Apples (commercial), bu. | 187,000 | 162,000 |
| Peaches, bu. | 13,000 | 15,000 |
| Pears, bu. | 6,000 | 6,000 |
| Grapes, tons | 100 | 200 |

Table II.—*Livestock and Livestock Products of Rhode Island, 1947 and 1946*

| Item | 1947 | 1946 |
|---|---|---|
| Cows and heifers, 2 years and over | 22,000 | 22,000 |
| All cattle and calves | 28,000 | 29,000 |
| Hens, 3 months and over | 563,000 | 578,000 |
| Sheep and lambs | 2,000 | 2,000 |
| Hogs | 10,000 | 8,000 |
| Milk produced, lb. | 129,000,000 | 122,000,000 |
| Eggs produced, doz. | 7,083,000 | 6,300,000 |
| Chickens raised, no. | 816,000 | 830,000 |
| Turkeys raised, no. | 32,000 | 31,000 |

**Manufacturing.**—The total estimated value of manufactures was $516,390,541 for 1939 and $517,196,193 for 1937. (No census report afte that for 1939.) The number of establishments was 1,460. Employmen in Dec. 1947 totalled 135,237 wage earners and 19,318 nonproductio workers (salaried personnel) and weekly payroll of $6,446,725 for al manufacturing industries in Rhode Island according to report of stat department of labour. Wage-earners were distributed among manufa turing industries in order: textile products 61,690; jewellery-silverware 16,439; machinery 13,414; iron-steel products 8,979; rubber products 7,500; electrical machinery 5,675; nonferrous metal 3,160; miscellaneou 18,380.

**Mineral Production.**—The value of mineral production in Rhode Islan is small, exceeding only that of Delaware and the District of Columbia Value in 1945 was $508,000, in 1944 $612,000 and in 1943 $808,00 The principal products are stone ($219,263 in 1945, $213,351 in 194 and $410,478 in 1943) and sand and gravel ($221,530 in 1945, $287,11 in 1944 and $327,750 in 1943). Production of stone reached 11,28 tons in 1945, 19,790 tons in 1944 and 171,230 tons in 1943; sand an gravel 317,300 tons in 1945; 352,905 tons in 1944, and 356,043 tons i 1943. (Figures for 1946 and 1947 were not available.) (M. C. Ml.)

## Rhodesia, Northern.

A British protectorate in central Africa, bounded on the north by Tanganyika and the Belgian Congo, on the east by Nyasaland and Portuguese East Africa, on the south by Southern Rhodesia and South-West Africa, and on the west by Portuguese West Africa. Area: 290,320 sq.mi.; pop. (1946 est.): 1,678,132, mainly African but including about 21,000 Europeans. Capital: Lusaka; other important towns: Livingstone, Fort Jameson and Broken Hill. The protectorate is administered by a governor (appointed by the British crown) assisted by an executive council (containing an unofficial element) and a legislative council with an unofficial majority. Governor: Sir Gilbert Rennie (appointed 1947).

**History.**—An important development occurred in the internal political affairs of Northern Rhodesia when an African representative council was set up in 1946. The council, which consists of the secretary for native affairs as president with 29 members (mostly elected) from the various districts of the protectorate, held its first meeting in Nov. 1946. It held further meetings in 1947. On the economic side, a cost of living commission started work in the protectorate in June 1947. A grant of £196,075 was sanctioned during the year, under the Colonial Development and Welfare act, for the development of broadcasting in Northern Rhodesia. Smaller grants included £5,690 for sociological research in the protectorate and £2,100 in support of the Rhodes-Livingstone institute.

**Finance and Trade.**—The currency of Northern Rhodesia is that of the self-governing colony of Southern Rhodesia. Revenue (1946) £3,317,000; expenditure £3,057,000. Imports (1946) £7,400,000; exports £12,600,000. The main wealth of the protectorate is derived from the so-called "copperbelt," where four large copper mines are under active exploitation. There are also deposits of zinc and cobalt. Apart from mineral exports (of which copper forms much the largest item), there is an export trade in grain, tobacco and timber. (*See* also RHODESIA, SOUTHERN.)

(J. E. SH.)

## Rhodesia, Southern.

A self-governing colony in Africa of the British commonwealth, with imperial government supervision over native rights. Area: 150,333 sq.mi.; pop. (est. 1947) 1,777,980 (European 83,450, Asiatic and coloured 7,530, the rest African). Chief towns: Salisbury (69,049); Bulawayo (51,698); Umtali (9,786); Gwelo (9,807). Languages: English, Afrikaans, and native tribal languages. Governor: Major General Sir John Noble Kennedy (appointed Sept. 15, 1946); prime minister: Sir Godfrey Huggins.

**History.**—During his visit to the colony in April 1947 George VI opened the Rhodesian parliament, the first time a reigning monarch had done so. A project for the manufacture of steel in the two Rhodesias, including the construction of the Sinoia-Kafue railway, planned by leading British industrial and financial interests and involving an expenditure of about £25,000,000, received promises of support from the governments of Great Britain, Northern and Southern Rhodesia. Rhodesia railways were nationalized by purchase of the shares for £3,250,000 and deıtures for £20,347,500. A 2½% loan, 1965–70, was issued at ), and underwritten in London for 1%, the first postwar gov-ıment loan to be so underwritten. The agricultural season was driest recorded, causing a deficiency in maize of 1,750,000 ;s; a drought relief organization transported hay to stricken ·as and removed cattle by rail on a large scale to better graz-. Defense measures, in addition to the empire air training ıeme, included the retention of the Rhodesian African Rifles ative troops) and the royal Rhodesia regiment on a voluntary sis.

European immigration amounted to 9,145 persons in 1946 and further 6,908 in the first half of 1947, causing difficulties in using. The cost of living index rose from 130.7 in 1945 to ı in July 1947.

**Education.**—Schools for European children, 90 (14,450 pupils); for atic and coloured children, 23 (2,114 pupils); for native children, 15 (151,476 pupils).

**inance.**—Estimated 1947–48: revenue £11,148,000 (plus £1,785,000 plus); expenditure £12,660,000. Revenue 1945–46: customs £1,706,- ; income tax £6,013,802; native tax £464,810; mining £268,406. blic debt stood at £24,501,579 on March 31, 1946. Gold output was 4,596 oz. (£4,697,922).

**rade and Communications.**—1946: Imports £20,746,000; exports £21,-6,000. Roads (motor services) 1,685 mi.; rail 1,361 mi. (*See* also IODESIA, NORTHERN.) (G. R. MN.)

## ice.

Another record U.S. rice crop was grown in 1947, exceeding the previous record crop of 1946 by 8% and ing to nearly 50% above the 10-year (1936–45) average. ıe 1947 crop was estimated at 79,345,000 bu. compared with ,216,000 bu. in 1946 and an average of 58,220,000 bu., 1936–. The increase was caused chiefly by the expansion of acreage 1,677,000 ac., compared with the 10-year average of 1,239,-o ac. Average yield for the crop was 47.3 bu. per acre, exactly e 10-year average, slightly more than the 45.9 bu. yield of 46. Yields were less than average in Arkansas and Louisiana cause of winds and rains and damage by salt water on some eas near the Gulf.

The rice market began the year 1947 at the high level of .17 per bu. to growers for rough rice, about the level at-ined in the fall of 1946. Prices advanced steadily to a high of .71 per bu. in August and then held fairly steady through the ll, advancing to $2.82 in December. Stocks at the beginning the year were down to 48,000,000 lb., the lowest after 1943 ıd less than half the average, but the large crop provided a ıpply of record proportions. Exports rose to more than 1,100,-o0,000 lb., leaving for civilian use nearly 5 lb. per capita—ightly less than the prewar average of 5.6 lb.

*U.S. Rice Production by States, 1947 and 1946 and 10-Year Average*

(In thousands of bushels)

| State | 1947 | 1946 | Average 1936–45 |
|---|---|---|---|
| xas . . . . . . . . . . . . . . . . | 23,700 | 17,716 | 14,877 |
| uisiana . . . . . . . . . . . . . . . | 21,455 | 22,676 | 21,243 |
| alifornia . . . . . . . . . . . . . . | 17,860 | 17,584 | 10,982 |
| kansas . . . . . . . . . . . . . . . | 16,330 | 14,240 | 11,118 |

World rice production in the 1947–48 crop year was estimated be about 6,950,000,000 bu., slightly higher than the 6,900,-o0,000 bu. produced in 1946–47 but 7% less than prewar out-ut. The increase was mostly in China, Japan, the Philippines ıd Burma, with largest gains in the latter country. A slight in-rease was reported for Europe and South America. The prewar xporting countries did not have sufficient surpluses to supply ıe needs of the large rice-consuming countries where popula-on had been increasing. Only about one-third of the 7,000,000-,000,000 tons usually reported was available for the winter of 947–48. (*See* also FOOD SUPPLY OF THE WORLD.) (J. C. Ms.)

**io de Janeiro, Treaty of:** *see* INTER-AMERICAN DEFENSE ONFERENCE.

**Rio De Oro:** *see* SPANISH COLONIAL EMPIRE.

**Rio Muni:** *see* SPANISH COLONIAL EMPIRE.

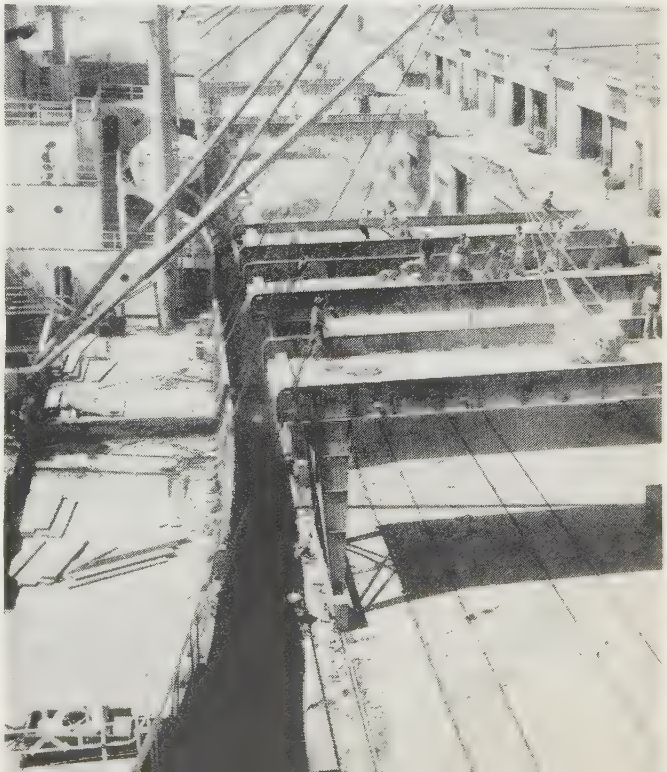
## Rivers and Harbours.

Improvement operations were executed on 91 regular river and harbour projects by the U.S. army corps of engineers in 1947. Of this number, four were completed. Maintenance was performed on a total of 291 projects, including the extensive intercoastal waterways and Mississippi river system, the connecting channels on the Great Lakes and the many coastal and inland harbours. The corps also continued operation and maintenance of the channels and canals of the Ohio river system, the Upper Mississippi river, the Illinois waterway and the hydroelectric generating plants on the Missouri river at Fort Peck, Mont., and the Columbia river at Bonneville, Ore. During the fiscal year ending June 30, 1947, $89,169,789.29 of federal funds was expended for new work and maintenance of river and navigation projects and inland and coastal harbours.

The Rivers and Harbors act approved July 31, 1947, provided $116,718,700 for maintenance and improvement of the nation's rivers and harbours. Of this total, $37,176,700 was designated for new construction work on 58 projects in 27 states. The important river and harbour projects allocated $1,000,000 or more for construction were: McNary dam, Columbia river, Ore. and Wash., $4,500,000; Missouri river, Kansas City, Mo., to Sioux City, Ia., $4,500,000; Mississippi river, between Ohio and Missouri rivers, $4,500,000; Missouri river, mouth to Kansas City, $2,250,000; Gulf Intracoastal waterway between Apalachee bay, Fla., and the Mexican border, $3,987,000; Neches and Angelina rivers, Tex., $1,300,000; New Haven harbour, Conn., $1,200,000; Sabine-Neches waterway, Tex., $1,000,000; Black Rock channel and Tonawanda harbour, N.Y., $1,000,000; San Diego river and Mission bay, Calif., $1,000,000.

Authorized projects previously scheduled under the Rivers and Harbors act and for which funds had been provided by congress in the 1947 fiscal year budget were curtailed by a presidential economy order in September. Subsequent revisions of the order, however, permitted resumption of work on prac-

CARGO of raw rubber from the Netherlands Indies being unloaded at the International Free Zone in the port of New Orleans, La. The free zone was inaugurated on May 1, 1947, to allow for the manipulation or processing of foreign goods without payment of customs duties



tically all projects where contracts were in force. The principal projects on which new work was performed during the year, other than canals and inland waterways, included the completion of dredging and removal of rocks, wrecks and other obstacles in the New York and New Jersey channels in Arthur kill from above the Baltimore and Ohio railroad bridge to Elizabethport, N.J., to a depth of 37 ft., and continued dredging and rock removal in the southern half of the channel in Kill Van Kull from Bergen point to Bayonne bridge to a depth of 37 ft.; dredging of the westerly strip of Ambrose channel and the centre of Anchorage channel in New York city harbour to a depth of 45 ft. Deepening of the Lake Worth inlet, Florida harbour, was started in the 300-ft. outer channel and in the inner channel to and including the turning basin. At Los Angeles and Long Beach harbours, Calif., construction was continued on the 13,350-ft. breakwater, and at Moss Landing harbour, Calif., dredging of the entrance of the inner channels and construction of north and south timber jetties were completed. Construction was initiated on Dam B on the Neches river, Tex., for navigation purposes.

Maintenance operations of previously completed river and harbour projects were continued on the Atlantic, Gulf and Pacific coasts, in the interior, on the Great Lakes and in Alaska, Hawaii, Puerto Rico and the Virgin Islands. In addition, the corps of engineers continued work on 15 projects required by the department of the navy and other government agencies with funds furnished by those agencies.

At Bonneville dam and reservoir, Ore. and Wash., the ten electric-power generating units were operated at capacity throughout the year. In the first 6 months of the year, the units produced 3,711,155,000 kw.hr. At Fort Peck dam, on the Missouri river in Montana, the reservoir was operated throughout the year for the maintenance of navigation on the Missouri river and the secondary purposes of flood control and hydroelectric production. Operation of the completed 35,000-kw. generating unit was continued during the major portion of the year; total power production during the first 6 months amounted to 204,347,000 kw.hr. Installation of the second generating unit of 15,000-kw. capacity was continued, with congress appropriating $657,500 for construction and $150,000 for miscellaneous work between July 31, 1947, and June 30, 1948. (G. Hb.)

**Canada.**—The 1947 session of parliament voted $1,022,150 for dredging the St. Lawrence river channel and Montreal harbour, as the first part of a 5-year program to widen the harbour and deepen the sea channel to 35 ft. While the project did not bring larger ships to Montreal, it aided navigation during low-water periods.

When 1947 navigation closed at port Churchill, Man., it had shipped through the Hudson bay route a little more than the 4,290,000 bu. of grain shipped at the 1936 peak. Churchill thus became second to Montreal as Canada's largest wheat-exporting port.

During the summer of 1947, Saint John, N.B., operated at an unprecedented rate. Later in the year the Canadian National railways offered reduction of freight rates on certain commodities at Portland, Me., which was immediately protested by the ports of Halifax, N.S., and Saint John in a joint brief to the federal transport minister. (C. Cy.)

**Great Britain.**—During 1947 much work was done in Britain to repair war damage. The £1,000,000 scheme of the Mersey Docks and Harbour board for the construction of the West Waterloo dock (entrance and lock 450 ft. by 65 ft., sill 17 ft. 6 in., at low water, ordinary spring tides) was continued, with the numerous other works of the board, including repairs to locks and improvements in handling equipment. For the Port of London authority, 50 three-ton electric cranes were scheduled for operation in April 1947. Nationalization of ports under the Transport act, 1947, would call for far-reaching legislation.

Radar was employed successfully in the operation of the Liverpool-Wallasey ferry service across the river Mersey, in thick fog, and experiments were under way for the control of inward-bound vessels to ocean ports. (The radar installation at Halifax harbour, Canada, had a range of 25 mi. and a radial accuracy of 150 ft.)

**Other Countries.**—In South Africa the new graving dock at East London, with a ship capacity of 17,000 tons, was opened in March 1947 by Princess Elizabeth.

Of political significance was the evacuation by the British navy of Alexandria, Egypt, which had been the chief naval base of the Mediterranean fleet for 64 years, and the bastion of the Suez canal defenses. Of similar interest was the transfer of the Dodecanese Islands, providing only for ships of small draught from Italy to Greece. During the summer of 1947, reparations from Germany included the transfer of a large floating dock to Piræus harbour, Athens. A decision had not yet been reached by the Allies whether or not to destroy the water wharves at Kiel and Eckernforde. It was found, however, that it was impossible to draw a clear line between war and peace potential. In contrast, it was said that the German Baltic ports were to be improved to an increased depth of 23 ft.

The need for ship repairs during World War II projected the dry dock into a more prominent position than hitherto. If the modern docks at Hamburg and Wilhelmshaven, Germany, were omitted because of their unusual design of great width and shallow depth, it was found that the length : entrance ratio fell to 8:1 and the length : sill depth ratio remained at 26:1. The tendency toward greater dimensions would be determined largely by other controlling factors, principally the economic depths of navigable channel, largely affected by dredging costs. (*See also* Aqueducts; Canals and Inland Waterways; Dams; Floods and Flood Control.) (D. G. Ds.)

## Roads and Highways.

**United States.**—The large highway program planned as a postwar activity and previously delayed by high prices and shortages of equipment and materials gained considerable momentum in 1947. The pattern for improvement had been set by the federal-aid legislation of 1944 which provided $500,000,000 for each of the first three postwar fiscal years for construction of express highways through cities, improvement of main rural roads and construction of secondary or farm-to-market roads. A notable event of the year was the designation of a national system of interstate highways that was limited in extent to 40,000 mi.

Work of all types was done. Near the end of the year it was estimated that federal-aid construction and other work supervised by state highway departments and completed during the year would approach $900,000,000. This exceeded the dollar value for any previous year, but since prices ranged from 81% to 93% more than the 1940 level it was not a record for work performed. Near the end of 1947 federal-aid projects programmed and in various stages short of completion included 37,458 mi. at a total cost of $1,797,000,000.

During the year motor vehicle registrations rose to more than 37,000,000, and highway traffic exceeded all previous records. Congestion on main routes in and near cities accentuated the need for major improvements. A beginning was made in the construction of express highways in or near Boston, New York city, Pittsburgh, Jacksonville (Fla.), Cleveland, Detroit, Chicago, Dallas, Fort Worth, Los Angeles and other cities.

In the fiscal year ending June 30, 1947, 7,929 mi. of highway were completed with federal-aid funds, consisting of 2,991 mi. on the federal-aid system, 4,609 mi. of secondary or farmnarket roads and 329 mi. of miscellaneous construction. The l cost was $212,800,000, of which $122,384,000 was federal

**Canada.**—Highway improvement was general through the led portion of Canada, and new routes were extended into lderness areas. Quebec province had under way a $25,000,000 gram and other provinces had programs of large size. Ex- ss highways of the most modern type were being con- ered by Montreal, Que., and Winnipeg, Man., and other es were considering major improvements to solve traffic gestion. In the fall of 1947 the pioneer road from Grim- w, Alta., to Great Bear lake, N.W. Terr., was nearing com- tion. Much progress was made on the $6,000,000 highway m Prince George, B.C., to connect with the Alaska highway Dawson Creek, B.C. Completion was expected in 1948. This struction, an extension of the Cariboo road from Vancouver, ., was to give a more direct approach from Seattle, Wash., tland, Ore., and other west coast points to the Alaska high- y.

**he Alaska Highway.**—The highway was kept in good con- ion and was used to supply airports along the route, for siness travel and transport and by hunting parties. Permits re necessary to travel the Canadian section and these were issued to tourists. Buses operated on schedule over the ire route winter and summer. Through traffic amounted to out 700 vehicles per month in winter and rose to 1,700 in y. An important development during the summer was the ginning of freight movement from the port at Haines, Alaska, the Alaska highway and thence over the highway northwest Fairbanks, Alaska, and east to White Horse, Yukon Terr., n.

**Inter-American and Pan-American Highways.**—Progress s made by Mexico in closing the gap approaching its southern rder and some work was done in Central American countries, t lack of funds prevented any great amount of progress. Ex- nsive improvements were made on long stretches of the Inter- nerican highway, but there were unimproved gaps in southern exico, northern Guatemala, Costa Rica and Panamá over ich motor vehicles could not be driven. There were no table improvements in the Pan-American highway of South nerica, although various countries bettered the condition of ort sections.

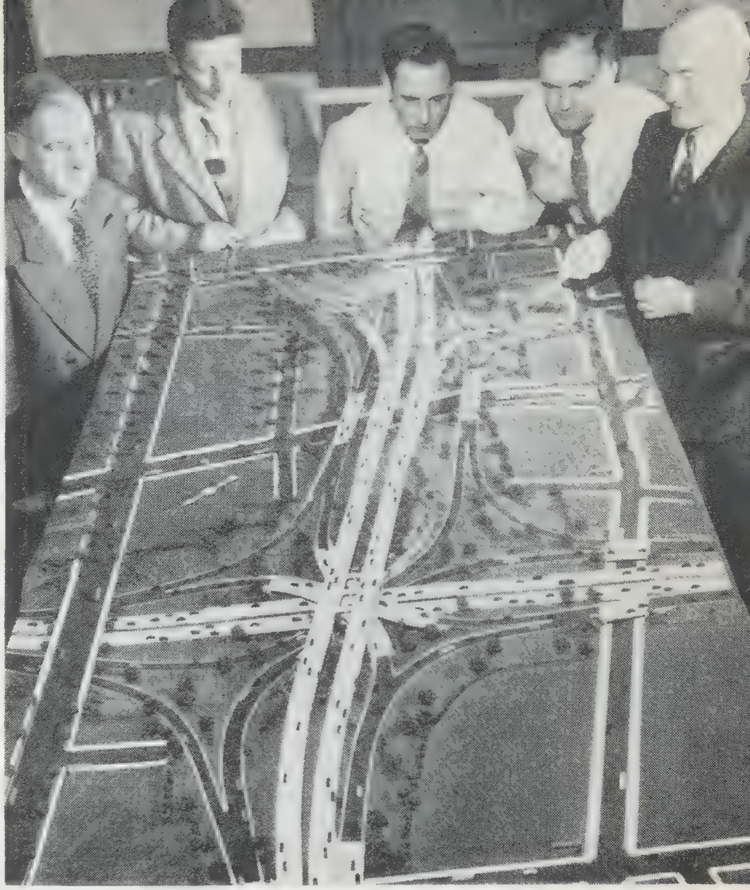
**Central and South America.**—Mexico made rapid progress the route paralleling practically the entire length of its rder with the United States and announced that it was near- g completion. In April 1947, Brazil placed in service a new -mi. concrete highway from the coffee port of Santos up a eep escarpment to São Paulo. An old road had been used to ansport about 50,000 tons per month in each direction. The w road doubled the capacity of highway transport and was signed to accommodate 3,500 vehicles per hour.

Brazil continued its preparations for the construction of a ,000-mi. highway system. Each state, with the exception of mazonas, had a highway department.

About 1,000 mi. of new roads were built from the coast to e interior of Venezuela by a number of oil companies. The o-mi. Guarico road from the Caribbean port Puerta de la ruz to the interior was completed at a cost of $6,000,000, ared by 11 oil companies.

Highway transport underwent rapid development in Uruguay a result of increases in railroad freight rates. Steady progress as made in road construction.

**United Kingdom.**—Highways throughout the United King- om were in excellent condition. War damage and deterioration d been repaired. Economic conditions and the urgent need r other facilities such as housing, however, prevented a major effort toward modernization of the highway system. Legislation was enacted for nationalization of bus transportation and truck transportation for distances of more than 25 mi. In June work was begun on the first of three tunnels under the Tyne river to accommodate vehicles, bicycles and pedestrians.



HIGHWAY ENGINEERS studying plans for improving traffic conditions in Los Angeles, Calif., during 1947. The model shown featured express highways and expanded parking facilities in midtown areas

**Continental Europe.**—Most of the countries of Europe made considerable progress during 1947 in restoring highway surfaces to their prewar condition and in improvising crossings at destroyed bridges, although there was practically no construction of new highways of modern design. The bad condition of railroads and water shipping coupled with heavy demands for transport of food and fuel, and for housing and rehabilitation of industry created large demands for highway transport.

In Italy the capacity of freight vehicles was 50% more than the prewar level and road surfaces approached their prewar condition. The same road condition was reported for much of Austria.

Germany, with the most urgent need for transport, suffered greatly from lack of roads and vehicles. There were about 3,000 mi. of autobahnen, in good condition except as to bridges, but this system was by no means adequate to give the service required by the dense population.

Norway reported stagnation of its highway program. Before World War II from 300 mi. to 425 mi. of road were built annually; after the war the rate was at about 125 mi. per year.

Little was known concerning Russian road improvement. The government reported that it was building a concrete road from Moscow to the southern shore of the Crimea.

**Turkey.**—The government had become strongly interested in highway transport to supplement its rail system and planned to build 12,000 mi. of first-class highways. The inadequate road and rail transport system was blamed for holding back the nation's full development. Late in 1947 a group of engineers was sent by the United States to assist the Turkish government, and some machinery was supplied.

**India.**—During the first six months of 1947 active steps were taken toward construction of national highways. A central standards and design office was set up under 30 consulting engineers. Technical co-ordination of the work of various branches of government and the independent states was being established. Political turmoil during the summer, however, delayed progress.

**China.**—This was the only country that made a large addition to its main highways during World War II; 2,820 mi. were added. A well-organized highway department worked to accomplish a 10-year plan to build 33,000 mi. of national highways and 124,000 mi. of secondary roads. Bus operation between cities was extended during the year.

**Africa and Australia.**—Road improvement continued, but there were no notable projects. The central government of Australia authorized funds for access roads to remote and sparsely settled areas.

**Philippine Islands.**—Activity in restoring war-damaged highways increased rapidly during the year. The United States provided a group of engineers and nearly $10,000,000 to assist the Philippine bureau of public works in rehabilitating highways. Numerous improvements were started, including reconstruction of major routes entering Manila. (*See* also MOTOR TRANSPORTATION.) (T. H. MACD.)

## Robinson, Sir Robert

(1886– ), British chemist who was awarded the Nobel prize for chemistry on Nov. 13, 1947, was born Sept. 13, and was educated at the University of Manchester. Starting his academic career in 1912 as professor of organic chemistry (pure and applied) at the University of Sydney, he later held similar posts at a number of British universities and was Waynflete professor of chemistry at Oxford university from 1930. In 1945, he was elected president of the British Royal society.

An outstanding organic chemist, Sir Robert worked principally in exploration of the intricate compounds found in living vegetable substances. He is noted for his successful synthesis of the chief colour pigments of fruits and flowers and played an important role in the collaboration on the chemistry of penicillin. In 1947, he was collaborating with his wife, Gertrude Maud Robinson, on production of synthetic penicillin.

Sir Robert received the Nobel prize for his research on plant products, particularly alkaloids.

**Rockefeller Foundation:** *see* SOCIETIES AND ASSOCIATIONS.
**Rockets:** *see* MUNITIONS OF WAR.
**Roentgen Ray:** *see* X-RAY AND RADIOLOGY.

## Roman Catholic Church.

The pope is recognized as supreme ruler and pastor of the Roman Catholic Church. It is he who creates cardinals and appoints archbishops, bishops, vicars and prefects apostolic who exercise ecclesiastical jurisdiction throughout the world.

During 1947 the sacred college of cardinals was reduced to 61, through the deaths of Rodrigue Cardinal Villeneuve, archbishop of Quebec, Carlo Cardinal Salotti, prefect of the Congregation of Rites, and Pierre Petit Cardinal de Julleville, archbishop of Rouen, France. No new cardinals were created.

A number of canonizations took place in 1947. In May, Nicholas de Flüe was solemnly enrolled in the ranks of the saints at a ceremony attended by a large Swiss delegation. In June the canonization of three new saints was solemnized. They were John de Britto, Giuseppe Cafasso and Bernardino Realino. In July four more were declared saints, Catherine Labouré, Louis Grignon de Montfort, Michael Garicoits, and Jeanne Elizabeth Bichier des Ages.

The pope issued several encyclical letters during the yea The anniversary of St. Benedict was the occasion of on (*Fulgens radiatur*), issued on March 21. It recalled the powe ful influence of the saint upon the culture of the west, and urge imitation of his example in devotion to prayer and work. O Dec. 18, the pope released a very short encyclical (*Optatissim pax*), which stressed the need for joint effort, concord and peace ful work in rebuilding the world. These should replace strife an class hatred. Most significant encyclical of the year was that o the liturgy (*Mediator Dei*), dated Nov. 20. The first of its fou parts treated of the nature, origin and development of th liturgy. Part two was concerned exclusively with the Hol Eucharist, explaining the nature of the sacrifice, urging mor participation of the faithful, and reviewing the development o the practice of adoring the Holy Eucharist. The third par treated of the office and the ecclesiastical calendar. The fina section was a pastoral exhortation, correcting some exaggerate tendencies in ascetical practice and insisting on due regard fo liturgical laws. The 15,000-word document was one of the long est encyclicals ever issued. Its exhaustive discussion of soci worship was considered especially significant.

Institutes of lay persons seeking a life of perfection wer the subject of an apostolic constitution (*Provida Mater Ec clesia*), issued in March. The document recognized the fact tha such groups were springing up in answer to needs of the times It laid down norms for their organization and exempted the from the canons governing strictly religious communities. Co siderable room was left for experimentation and adaptation t particular situations.

Wartime exemptions from the usual laws of fast and ab stinence continued in force at the discretion of the bishops These dispensations, granted in view of world food conditions were confirmed for the postwar period in Jan. 1946. They wer not revoked during 1947.

Continuing the trend noted in 1946, two additional congre gations elected Americans superiors general. In July, at Paris the Very Rev. William Slattery, C.M., became head of the Vin centians. In Rome the Most Rev. John H. Boccela, T.O.R., wa selected as general of the Third Order Regular of St. Francis.

Church-state relations continued crucial in several countries During January, in an effort to neutralize Catholic political op position, the Polish government promised constitutional pledge of the rights of the church. Subsequently the church was at tacked for interfering in politics and its publications were re stricted. During the year Bernard Cardinal Griffin, archbisho of London, Eng., visited Poland and reported on his findings At the year's end Adam Cardinal Sapieha, archbishop of Cra cow, Poland, visited Rome, but no agreement on Polish rela tions with the Vatican had yet been reached.

In Germany, especially the soviet zone, the need of priest was acute. From former East Prussia and the German territor taken over by Poland came many Catholics, most of them set tling in the Russian zone of occupation. A survey reveale 3,308,668 Catholics in the soviet zone, where previously only fraction of that number had lived. Catholics in Hungary rallie around Josef Cardinal Mindszenty, the primate, in an effort t vindicate the rights of religion. The communist-inspired driv against religious education continued; the Catholic press wa severely restricted; institutions were seized as occasion offered

The situation in Yugoslavia continued bad, and several at tacks were made on Catholic priests. Efforts to get U.S. Catho lic press representatives accredited to Yugoslavia were com pletely unsuccessful. No agreement could be reached by th Vatican with the new government of Rumania; the nunciatur was not filled and a regent, Bishop Gerald P. O'Hara of Savan nah-Atlanta, Ga., was sent to Bucharest instead. In Belgrade

Yugoslavia, Bishop Joseph P. Hurley of Saint Augustine, Fla., remained as regent of the nunciature.

**Missions.**—Catholic missions in communist-held China suffered during 1947. Previously they had not been interfered with to any great extent, but gradually the attitude of the Red army changed. At the year's end Chinese Communists displaced 72 Trappist monks from their monastery and forced them to join a "death march," which resulted in the death of 14. Various missions suffered also, and few new appointments were being made to the Communist areas.

Elsewhere mission needs were great. Postwar Japan seemed well disposed toward Christianity and during the year several score missionaries were dispatched to Japan by U.S. Catholics. In the Philippines, still suffering from war damage, a serious shortage of priests continued. North American missionaries were again sent during 1947 to various Latin American countries in need of additional clergy.

**United States.**—The number of Catholics in the U.S., Hawaii and Alaska was estimated at 25,268,173 in 1947, representing an increase of 866,049 over the previous year. There were 22 archdioceses, 100 dioceses, and 1 vicariate-apostolic (Alaska). Cardinals numbered 4, archbishops 22, bishops 145, and priests in excess of 40,470. There were 140,563 sisters and 6,938 brothers.

Catholic colleges and universities numbered 216, high schools 2,431, and elementary schools 8,165.

During 1947 a new diocese was created in Austin, Tex., while that of Leavenworth, Kan., was renamed Kansas City in Kansas. Mgr. Louis J. Reicher was consecrated first bishop of Austin, Tex. The archiepiscopal sees of Baltimore, Md. and Washington, D.C., were separated after the death of Archbishop Michael J. Curley in May, 1947. Mgr. Patrick A. O'Boyle was named archbishop of Washington, while Bishop Francis P. Keough of Providence, R.I., was transferred to the Baltimore see. During October, Archbishop John J. Cantwell of Los Angeles, Calif., died, as did Archbishop James H. Ryan of Omaha, Neb., during mid-November. Bishop Thomas A. Boland was named bishop of Paterson, N.J., to fill the vacancy left at the death of Bishop Thomas H. McLaughlin, who died in March. Mgr. Albert R. Zuroweste was consecrated bishop of Belleville, Ill., and Mgr. Mark K. Carroll was designated bishop of Wichita, Kans.

Seventeen bishops were appointed as coadjutors or auxiliaries in as many dioceses.

The U.S. hierarchy, at their November meeting, issued a joint statement condemning secularism and blaming the separation of religion from daily life for many of the social evils of the times. At the same meeting they authorized establishment of a National Catholic Resettlement council, to be made up of representatives of national organizations and various dioceses, to promote the work of resettling Europe's displaced persons in the U.S. In December the council was formed under the leadership of War Relief Services—National Catholic Welfare conference. On Labour day the social action department of N.C.W.C. issued a forward-looking statement urging democratic co-operation of management and labour in solving labour disputes, greater production as a means to economic stabilization, and the maintenance of full employment.

Awards given U.S. Catholics during 1947 included the designation of William G. Bruce, veteran publisher, to receive the Laetare medal. The Hoey awards went to Julian J. Reiss of New York and Clarence T. Hunter of St. Louis, Mo., for their distinguished work in interracial relations. Bishop William D. O'Brien, auxiliary of Chicago, Ill., was honoured for his long work with the Extension society and named assistant at the papal throne. Joseph Matt, a layman, celebrated his golden jubilee as editor of the *Wanderer,* Catholic weekly of St. Paul, Minn.

At the Eucharistic congress marking the centenary of the diocese of Buffalo, N.Y., 70 archbishops and bishops were in attendance. The event was one of the most significant of the year and drew a crowd estimated at 100,000.

**Other Events.**—A special mission to study conditions of Europe's displaced persons and prospects of resettlement in Latin America was carried out by Mgr. John O'Grady, secretary of the National Conference of Catholic Charities. The pope received his report in person. In Rome the Vatican Emigration office was established, with Rev. Edward J. Killion, C.SS.R., designated as its director. During the year Catholics in the western countries continued to assist displaced persons. United States Catholics shipped goods and food abroad totalling more than $10,000,000.

The National Catholic School of Social Service and the social service department of Catholic University of America, Washington, D.C., were merged and a larger, co-ordinated institution was organized to promote Catholic study of social work.

Notable deaths of the year included those of Mgr. Peter K. Guilday, veteran professor of history at Catholic university, and Dr. Herbert Corey, author and distinguished convert from Marxism. In August the body of Archbishop Edward J. Hanna, formerly of San Francisco, Calif., was removed from Rome, where he had died during World War II, and was laid to rest in San Francisco.

During June the Marian congress held at Ottawa, Canada, drew 200,000 faithful. Nine cardinals and several hundred archbishops and bishops attended during the five days dedicated to Our Lady's intercession for world peace. (*See* also CATHOLIC ORGANIZATIONS FOR YOUTH; CATHOLIC RURAL LIFE CONFERENCE, NATIONAL; CATHOLIC WELFARE CONFERENCE, NATIONAL; CHURCH MEMBERSHIP; SOCIETIES AND ASSOCIATIONS; VATICAN CITY STATE.) (J. LaF.)

## Roosevelt, Anna Eleanor

(1884– ), U.S. government official, newspaper columnist and widow of Franklin D. Roosevelt, 32nd president of the United States, was born Oct. 11, 1884, in New York city, the daughter of Elliott and Anna Hall Roosevelt. She married Franklin Roosevelt, a distant cousin, March 17, 1905. Mrs. Roosevelt took an active interest in furthering her husband's political career. Following his election to the presidency in 1932, she embarked on a career as a speaker and writer. Her newspaper column, "My Day," became widely syndicated. Mrs. Roosevelt was named (Dec. 19, 1945) by President Harry S. Truman as a member of the U.S. delegation to the United Nations general assembly, and on April 29, 1946, she was elected chairman of the Commission on Human Rights of the United Nations Economic and Social council.

In her frequent clashes with the Russian delegates over aims and ideals, Mrs. Roosevelt complained that while the Russians verbalized on democratic procedure, they had no concept of what the phrase meant. Appointed as delegate to the general assembly's Sept. 1947 session, Mrs. Roosevelt answered Andrei Vishinsky's warmongering charges on Oct. 6, declaring that her sympathy with the soviet proposal to reduce warmongering influences to a minimum did not extend to the soviet position that this was the task of the press.

Subsequently she urged the Soviet Union to acknowledge basic east-west differences and to seek instead some means of co-operation.

**Rosenwald Fund, The Julius:** *see* SOCIETIES AND ASSOCIATIONS.

**Rotary International:** *see* SOCIETIES AND ASSOCIATIONS.

## Rowing.

A healthy growth in competitive rowing was maintained in 1947. More regattas were held in the U.S. and abroad with greater numbers of competitors and a higher standard of oarsmanship.

In England, Cambridge turned the tables on Oxford, winner in 1946 in the oldest rowing classic.

In the United States, three great college regattas were held besides many dual, triangular and quadrangular contests. The Eastern Intercollegiate sprint championships at Princeton, N.J., had 28 entries in freshman, junior varsity and varsity events. At Poughkeepsie, N.Y., the long-distance classic was revived after a lapse of five years, at three miles instead of four. There 31 college crews raced. The second annual Pacific Coast sprint championships at Lake Washington, Seattle, attracted 12 varsity crews. Harvard was victor at both Princeton and Seattle and the U.S. Naval academy won the varsity event at Poughkeepsie.

In the Eastern Intercollegiates, the freshman final went to Princeton in 6 min. 18.2 sec.; Navy was second and Yale third. Other entries, eliminated in the trials, were Harvard, the University of Pennsylvania, Massachusetts Institute of Technology, Rutgers and Columbia.

Harvard also took the junior varsity final from Penn in 6 min. 14 sec. to 6 min. 14.2 sec. with Princeton third. Crews in this event, eliminated in the heats, were Navy, Yale, M.I.T., Syracuse, Columbia, Rutgers and Cornell.

Harvard's varsity, one of the smoothest and most powerful crews in many years, came through to the finals which they won in 6 min. 5 sec. at 2,000 m. in dead water, 1 sec. over the Olympic record. Navy was second and Cornell third. These three seeded crews had previously defeated Princeton, Yale, M.I.T., Penn, Rutgers, Columbia and Syracuse in the heats.

On the same day at Cambridge, Harvard also won the lightweight crown with the Wright trophy from Princeton, Yale, Penn, Cornell, M.I.T. and Columbia in that order. The winner's time was 6 min. 54.2 sec. for the Henley distance.

The Poughkeepsie renewal was a great rowing spectacle. Eleven varsity crews, the best in the country barring the absent Yale and Harvard eights, gave thousands of spectators a great thrill. The same number rowed the junior varsity race at the same distance and seven freshman crews faced the starter at two miles.

Navy won the varsity contest, followed by Cornell, Washington, California, Princeton, Syracuse, Wisconsin, M.I.T., Penn, Rutgers and Columbia. Time, 13 min. 59.2 sec.

California took the junior varsity in 14 min. 30.3 sec. with Navy and Cornell second and third. Washington, Syracuse, Penn, Wisconsin, M.I.T., Rutgers and Columbia followed.

The freshman race went to Washington in 9 min. 40.3 sec. with Syracuse a length back, trailed by Navy, Princeton, Cornell, Penn and Columbia. Smooth water prevailed. This regatta recorded the largest number of entries ever seen at Poughkeepsie.

At New London, Conn., the Harvard-Yale classic was renewed at four miles. Harvard won the varsity by one and one-half lengths and the junior varsity race as well. Yale's freshman crew defeated the Crimson.

In the second annual Pacific Coast sprint championships on Lake Washington, Seattle, Harvard defeated the largest field of college eights ever assembled in one race. Weather conditions were excellent. The time for the 2,000-m. distance was 5 min. 49 sec., which bettered the world's record for still water. Yale and Washington in second and third places were serious threats, both being clocked under the record; Syracuse, Cornell, California, Wisconsin, followed closely; M.I.T. and Princeton were tied for eighth place, and Penn, Columbia and U.C.L.A. trailed. The final positions were determined by motion-picture camera.

The Dad Vail Rowing association regatta was revived on the Charles river. Boston university captured the new Vail trophy from the Dartmouth Rowing club, trailed by Marietta college of Ohio, Rollins college of Florida and American International college of Springfield, Mass.

Rutgers university, former Dad Vail champion, no longer competing in the varsity event, took the junior varsity race with Boston university second. No freshman race was held. Harvard and Navy deserve top ranking for the 1947 season, and eastern rowing was superior to that of the west.

Schoolboy activity in the U.S. and Canada increased. The Scholastic rowing championships at Wyandotte, Mich., were witnessed by thousands. La Salle high school, Philadelphia, won the eight-oared shell championship, and Joseph McIntyre of Philadelphia the singles championship. In Canada, Joe Kelly of Belleville high school won the high school singles, and Roosevelt high school, of Wyandotte, Mich., regained the Cleland cup and the high school eight championship.

The National Association of Amateur Oarsmen held its 73rd annual regatta at Detroit in July. Ecorse Boat club won the team trophy without gaining a single first place. The Buffalo West Sides captured the eights and Jack Kelly was dethroned as American champion after capsizing while in the lead. Theodore Dubois of Winnipeg, Canada, former American champion in 1939, became the new American champion, with Joe Angyal, New York, lightweight medalist, second.

The largest regatta on the North American continent was the 65th running of the Royal Canadian Henley at St. Catharines, Ont. Forty-nine events were held with nearly 600 entries in the four-day regatta.

The Buffalo West Sides took the Club Point trophy and with it the senior eights and the Hanlan cup. The Wyandottes of Michigan were second.

John B. Kelly, Jr., successfully defended his title in the Senior Singles championships, with Dubois of Canada second.

Joe Angyal won both lightweight crowns.

The Rowing committee of the U.S. Olympic federation voted to hold the Olympic rowing trials on the Schuylkill river, Philadelphia, between June 30 and July 10, 1948, in preparation for the 12th Olympiad at London in Aug. 1948.

John B. Kelly, Jr., unsuccessful finalist for the Diamond Sculls in 1946, returned to win the coveted trophy from a large field of foreign scullers at the Royal English Henley early in July. Jesus college, Cambridge, won the Grand Challenge cup and Kent school won the Thames cup. (C. L. Bt.)

## Roxas y Acuna, Manuel

(1892– ), Philippine statesman and president of the Republic of the Philippines, was born Jan. 1, in Capiz, Panay Island, the Philippines. He was educated in English-language public schools and was graduated from the University of the Philippines college of law, Manila, in 1913 with an LL.B. degree. Elected to the house of representatives in 1921 Roxas later became speaker of the house.

Shortly after the Japanese attack on the Philippines, Roxas was assigned, Dec. 16, 1941, as liaison officer and aide to Gen. Douglas MacArthur. When the latter went to Australia Roxas remained for a while on Corregidor and later turned up as a cabinet minister in the pro-Japanese Laurel government. After the war when he was charged with collaboration, Roxas claimed that he used his high position to carry out espionage for the Allies; and he was subsequently cleared of collaborationist charges.

Roxas was elected president of the republic in April 1946 and s inaugurated the following month on May 28. In the spring 1947 an attempt to assassinate him failed.

Roxas signed two treaties with the U.S. in 1947. The first, arch 14, guaranteed U.S. leaseholds on military and naval ses in the islands for 99 years; the second was a U.S.-Filipino e-year military assistance pact.

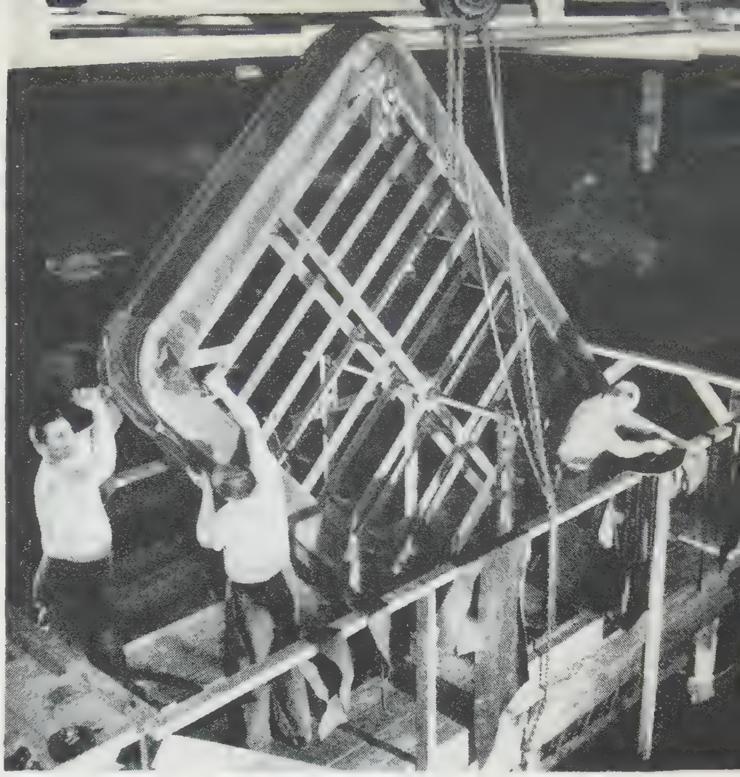
**oyall, Kenneth Claiborne** (1894– ), U.S. government official and lawyer, s born on July 24 in Goldsboro, N.C. He studied at the Uni- rsity of North Carolina and later at Harvard where he took s law degree in 1917. He served in the artillery in World ar I and later practised law in Goldsboro, becoming one of e state's most successful lawyers. In World War II he was ade chief of the army service forces legal section with the nk of colonel. Later, he became deputy fiscal director of the rvice forces (he was made a brigadier general in late 1943) d in Oct. 1945, Pres. Harry S. Truman appointed Royall to e post of undersecretary of war.

Upon the resignation of Robert P. Patterson as secretary of ar, President Truman named Royall his successor on July 18, 947. A month later he was made secretary for the army in e new national military organization headed by Secy. of De- nse James Forrestal. Royall was a foremost advocate of "pre- aredness," and his views on army policy were set forth in a eech made in the summer of 1947 before graduating officers the Command and General Staff school, when he extolled military strength as the best guarantee of peace." In a state- ent made on Dec. 2, 1947, before the president's air policy ommission, he urged the U.S. not to weaken its sea and ground stablishments by granting the lion's share of arms appropria- ons to the air force.

**uanda and Urundi:** *see* BELGIAN COLONIAL EMPIRE; TRUS- EE TERRITORIES.

**ubber.** The rubber industry maintained a high level of output during 1947, particularly in the United tates, where it was estimated that the year's tire production ould exceed by more than 10% the high of 87,000,000 pro- uced in 1946. The total value of manufactured product and he consumption of rubber (1,207,000 short tons) were also ated higher than in any previous year. This unusually high ate of activity prevailed in the first two quarters and in the ourth, with a mild slowing down in the summer months.

Congress extended government controls over the use and pro- uction of rubber until March 31, 1948, authorized the purchase f crude rubber by private agencies after May 1, 1947, and de- erred until later a permanent policy respecting the sale of overnment-owned plants, except for designated "fringe" plants ot deemed essential to U.S. national defense. Subsequently, he Civilian Production administration defined effective controls under rubber order R-1) to continue such functions as alloca- ion, consumption, inventories of rubber and specifications for ubber products. With the resumption of free trading within the nited States, the price of rubber in the far east dropped from high of 22 cents to about 15 cents by June. On Sept. 9 the ffice of Materials Distribution, U.S. department of commerce, nnounced the elimination of controls over the use of natural ubber in about 30,000 nontransportation items in line with the asier supply position of the agricultural product. This action lso concentrated the use of synthetic rubber, principally in ires and tubes, with continued consumption of GR-S estimated t the rate of one-third of the total GR-S (butadiene-styrene o-polymer) and crude rubber processed and a consequent firming in the price of rubber to a high of 22 cents in November and of 20.4 cents at the year-end.



RECORD-SIZE flexible rubber joint, designed to convey steam from turbine to condenser under conditions of extreme temperature change, is shown nearing completion at the Passaic works of the U.S. Rubber Co. in 1947

Viewpoints differed concerning the method of ultimate withdrawal of the government from ownership and operation of plants for U.S.-made rubber. Private operation of these plants under sale or lease arrangements and with removal of government controls was a widely supported proposal. The early discontinuance of the public pooling of patents was urged in order to provide the incentive for industry to make most rapid improvements in the products and processes involved. One large unit of industry recommended government stock piling and production only for purposes of military security. Another advocated the use of a minimum of 112,000 short tons a year of synthetic rubber produced in government-owned plants, a substantial stock pile of crude rubber and the development of additional rubber-growing areas in the western hemisphere with a minimum annual yield of 112,000 tons. The house subcommittee of ten members, headed by Paul Shafer of Michigan, conducted hearings in the last quarter at Port Neches and Velasco, Tex.; Louisville, Ky.; Akron, O., and final hearings in December at Washington, D.C., with the purpose of drafting a law to assure adequate rubber supplies in the interests of public security. Testimony was heard from officials of the Reconstruction Finance corporation (Office of Rubber Reserve), National Security Resources board and other federal agencies, the Rubber Manufacturers association and executives of several rubber companies. Shafer intimated at the end of the hearings that permanent legislation might require considerable time, but that his committee favoured continuation of existing R-1 controls and elimination or modification of existing pooling of research in the synthetic rubber field.

Widespread disappointment was expressed in many quarters at the seeming failure of the private purchase of crude rubber in the U.S.A. to prevent the decline in market prices. Malayan growers attributed this unsatisfactory response in prices to the continued allocation of rubber within the United States, thus preventing its unrestricted use. From London at mid-year gloomy reports emanated that the Americans were retaining control of the price situation with the prospect of a further decline. Sir John Hay, chairman, United Sua Betong Rubber Estates, was reported as criticizing the discrimination favourable to the U.S. synthetic to the detriment of marketing the natural product. The Rubber Study group, which met in Paris in July, was urged by representatives of the rubber-growing countries to implement the free play of the consumer demand for rubber as an aid to their economic recovery. Governments of the member countries were to be apprised of the need for their active participation in effecting this objective.

In Malaya plans to modernize and revive the rubber-growing industry were actively studied. These plans included loans, possibly out of government funds, for the gradual replacement of low-yielding trees by better strains. While estate owners generally seemed to favour government participation in this replacement operation, concern was felt that a too rapid rate of production would adversely affect prices. Also, their competition from the small farmer (native estate owner), especially if aided as was proposed by access to bud wood and government loans, and from the U.S. synthetic production, had to be considered carefully. The main source of competition confronting the Malayan plantations, however, would be the rubber production of the Netherlands Indies, which had been slow in recovering from World War II. Despite plans to improve the yields of rubber in Malaya, and proposals such as the one to make Ceylon a rubber manufacturing centre for all items except tires, rubber producers the world over were awaiting the ultimate disposal of the units for making the U.S. rubber GR-S before committing themselves to large-scale new operations.

**Raw Materials.**—In the first three quarters of 1947 the consumption of rubber in the United States was 928,480 short tons, with 443,440 short tons crude and the balance synthetic rubber, mainly GR-S. Estimates for the year indicated that the consumption of crude and synthetic rubbers would be nearly equal compared with 27% crude in 1946 and 13% crude in 1945; 604,800 short tons of crude rubber and 448,440 short tons of synthetic rubber comprised the United States new supply of these commodities during the first three quarters. Last-quarter estimates for the total rubber consumption in 1947 by the United States were 1,207,000 short tons and for the world 1,802,000 short tons.

The price of U.S. GR-S remained 18.5 cents a pound throughout the year, whereas on June 1 the corresponding product of Canadian manufacture was reduced from 18.5 cents to 16.5 cents. Canadian Reconstruction Minister Clarence Howe announced at the end of 1947 the production figures for GR-S and Butyl at the Polymer corporation's plant:

| | (In thousands of pounds) | |
|---|---|---|
| | GR-S | Butyl |
| 1944 | 57,057 | 1,233 |
| 1945 | 82,228 | 18,941 |
| 1946 | 80,279 | 25,148 |
| 1947 | 79,000 | 16,000 |

The response of Nigerian exports of crude rubber to the stimulus of emergency buying presented an interesting case:

| | Short Tons Crude Rubber |
|---|---|
| 1941 | 2,302 |
| 1942 | 7,467* |
| 1943 | 8,250 |
| 1944 | 10,543 |
| 1945 | 11,787 |
| 1946 | 12,821 |

*Of which 2,136 short tons were wild rubbers.

E. G. Holt, rubber adviser to the department of commerce, reported rubber consumption in the United Kingdom of 35,609 short tons in the first quarter and 43,397 short tons in the second quarter. He reported that in Germany the Schkopau plant in the Russian zone was producing rubber early in the year at the capacity rate 3,500 metric tons (3,850 short tons) monthly. The Hüls plant in the British zone was producing 2,016 metric tons (2,218 short tons) the first quarter and 2,507 metric tons (2,758 short tons) the second quarter.

The U.S. tire fabric and cord output in 1946 of 522,000,000 lb. was a record high; 236,000,000 lb. of cotton tire fabric, 74,000,000 lb. of cotton tire cord and 212,000,000 lb. of rayon-nylon tire fabric and cord made up this total. Estimates for their consumption in 1947 were somewhat in excess of this figure. Nylon was used only in nominal amounts. This quantity of rayon-nylon tire fabric and cord was in the order of 24 times the 1939 production.

During World War II carbon-black plants erected to supply the demand were predominantly of the type to produce furnace blacks, whereas the tire industry had previously consumed almost wholly blacks of the channel type. It was of interest that the fine furnace types of black had reinforcement properties about equal to channel black, resulting in good wear of tire treads in abrasive service. Furnace blacks also worked particularly well with synthetic rubbers. Thus, the excess emergency facilities provided for furnace blacks appeared justified by the continued demand for their products in peacetime. In 1946 the rubber industry consumed 1,200,000,000 lb. of carbon black, more than double the annual consumption in prewar years.

**Finished Goods.**—The rubber industry maintained a high level of output throughout 1947. Shipment of civilian replacement tires in 1946 were 54,584,000 passenger tires and 10,776,000 truck-bus tires, compared with 26,999,000 and 3,868,000, respectively, in 1936. Civilian retread and recap units for 1946 passenger car tires were 16,000,000 compared with 3,000,000 for 1936, and for truck-bus tires 2,500,000 against 1,000,000 in 1936. The peak production rate attained by the rubber goods industry during the first half of 1947 was retarded somewhat at midyear, but had shown recovery by the fourth quarter. Mechanical rubber goods reported its highest production rate in history for the 12 months ending June 30. Heavy bookings for future orders in industrial products, footwear and soles and heels were reported in October. U.S. exports of rubber goods totalled $54,790,000 for the first quarter, $58,241,000 for the second quarter. The decline in volume of exports later in 1947 was attributed to the resumption of manufacture by the countries originating the orders, although dollar balances were doubtless also implicated.

The consumption of rubber by all other countries for 1947 was about half that of the United States. France in April produced 7,560 short tons of rubber articles other than tires, compared with 8,050 short tons of these commodities in April 1938. Increased exports of rubber goods from England were projected by Sir Stafford Cripps after a survey of the known capacity (1947) of the factories at a rate for 1948 attaining more than $4,000,000 a month, 425% of that in 1938. In Italy 137 firms employing 42,000 persons consumed 13,400 short tons of crude and synthetic rubbers in 1946. The Union of South Africa reported 4,330 persons employed in about 70 rubber factories in 1947. In the peak year, 1943, the union had exported 23,000,000 lb. of tires and tubes, mainly to Egypt, Kenya and Iraq. In Germany the production of rubber goods was hampered by shortages of coal, power and buna in the western section, and in the eastern section where buna was plentiful by the scarcities of coal, gasoline and chemicals. Almost 90% of the German rubber-fabricating industry was located in the British and U.S. zones, where the limited production of buna at Hüls had to be supplemented by outside supplies of buna from Schkopau and by importation of natural rubber. These plants in western Germany had a combined capacity of 119,000 car and truck tires and 432,000 cycle tires monthly.

A major reduction in the prices of tires and tubes in the ited States, averaging about 12%, was made effective in the ond quarter. In the last quarter these prices were adjusted ward to a level close to that prevailing at the beginning of year. In early autumn the department of justice brought t against eight tire companies, ten company officials and the ıbber Manufacturers Association, Inc., on charges of violating Sherman act by agreeing to establish the sales prices of tain rubber articles. The defendants pleaded not guilty.

**Rubber Study Group.**—The Rubber Study group met in ris, France, on July 1–8, 1947, for its fourth session to review world rubber situation in the light of changes since it met The Hague, the Netherlands, in Nov. 1946 and to consider organization of an enlarged study group. Delegates from 19 untries and observers from 9 other countries and from the ited Nations and the Food and Agricultural organization were esent. In a resolution released at the conclusion of the meet- it was recommended: (1) that membership be open to all untries substantially interested in the production, consump- on of or trade in rubber; (2) that the group consider measures signed to expand world consumption of rubber; (3) that the oup consider how best to deal with any special difficulties ich might exist or might be expected to arise, and submit commendations on the subject to the participating govern- ents and (4) that the group maintain a secretariat for the oper conduct of its work and arrange for the collection and ssemination of statistics.

In order to implement the fourth recommendation, an initial anagement committee of the following nation members was so recommended—France, the Netherlands, the United King- om and the United States. It was agreed that the permanent te of the secretariat should be in London. (*See* also CARBON LACK; PETROLEUM; RAYON AND OTHER SYNTHETIC FIBRES.)
(H. L. TL.)

**ugby:** *see* FOOTBALL.
**uhr:** *see* SAAR.
**ulers:** *see* PRESIDENTS, SOVEREIGNS AND RULERS.

**umania.** A republic of southeastern Europe, bounded on the north and northeast by the U.S.S.R., on the ast by the Black sea, on the south by Bulgaria and on the west y Yugoslavia and Hungary. Area (Sept. 15, 1947): 91,671 q.mi.; pop. (July 1, 1946, est.): 16,472,000. Chief towns (pop. uly 1, 1945, est.): Bucharest (cap., 984,619); Cluj (110,956); assy or Iasi (108,987); Timisoara (108,296); Ploesti (105,- 14); Braila (97,293); Galatz (93,229). Language (1946 est.): umanian 84%; Magyar 8.5%; German 4.5%; others 3%. Re- gion (1946 est.): Greek Orthodox 81%; Greek Catholic 9%; oman Catholic 7%; others 3%. Provisional council of state: Iihai Sadoveanu, Constantin Parhon, Ion Nicure, Roman Stere nd Stefan Voitec; prime minister: Petru Groza.

**History.**—The food shortage resulting from the 1946 drought reated at the beginning of 1947 a famine situation in Moldavia nd great hardship in most provinces. Appeals for help brought ome gifts of food and medical material from western Europe nd the U.S., but the bulk of Rumania's needs had to be cov- red by using its limited export resources to pay for imports of ood. This meant that imports of much-needed industrial raw aterials and equipment had to be sacrificed, with great loss to e country's economic recovery. Grain was received from the .S.S.R. as a loan to be repaid later, though the communists epresented this as aid freely given.

This serious setback, coming on top of the general economic xhaustion of the preceding two years, whose largest single ause was the burden of soviet military occupation and repara- ons, led to a rapid fall of the currency. The inflation increased during the summer. On Aug. 14 and 15, 1947, the new leu was stabilized at the rate of 1 new to 20,000 old. The new exchange rate was to be 605.4 lei to the pound and 150 to the dollar. Only a small proportion of the old currency surrendered was exchanged for cash, the rest being frozen with the assurance that it would be exchanged "at a later date."

During the year the opposition National Peasant party continued to suffer interference and persecution from the police. In June a group of its leaders, including the former party chairman, Ion Mihalache, attempted to leave Rumania by air, but were arrested on the airfield. The affair was denounced as treason and led to the arrest of all prominent party figures and of their leader, Iuliu Maniu. The party was formally suppressed, and the trial of the leaders for conspiracy took place at the end of October. They were accused of plotting with representatives of Britain and the U.S. in Bucharest the overthrow by violence of the Rumanian government, of espionage in the interest of the western powers and of a "reactionary" and "antiworking class" policy before World War II. On Nov. 11 Maniu and Mihalache were sentenced to solitary confinement for life.

Changes took place during the year in two of the parties belonging to the government coalition (National Democratic front). The Socialist party had split in 1945, when a section led by Constantin Petrescu went into opposition but the majority decided to collaborate with the Communists. In October the foundation of the Cominform in Belgrade, Yugoslavia, brought new demands from the Communists for fusion of the two workers' parties. A congress of the Socialist party, which was denounced as packed by the opposition Socialists, met and decided for fusion.

The other governmental group which still showed signs of an independent attitude were the Liberals of the former premier, George Tatarescu. This right-wing politician had long tried to play with the Russians and with the Rumanian Communists. In May his patience began to wear thin, and he wrote a memorandum to his cabinet colleagues in which he criticized police repression and official industrial policy, especially a law which reorganized existing factories into a number of industrial groups, controlled by the government. This measure, with the formality of nationalization, brought most of Rumanian industry under close state control. Since a Tatarescu follower had been minister of finance, it was easy to blame the Liberals for the inflation. Communist attacks continued during the summer, and on Nov. 6 Tatarescu and his party colleagues resigned following a vote of no confidence.

Mme. Ana Pauker, a Communist leader, succeeded Tatarescu as minister of foreign affairs.

On Dec. 30 the Rumanian government announced the abdication of King Michael (*q.v.*) and the establishment of a "people's republic." A council of state of five members was appointed to govern until a constituent assembly and a president were elected. The former king left Rumania on Jan. 3, 1948. (*See* also PEACE TREATIES.) (H. S.-W.)

**Education.**—(1943) Kindergarten schools 1,094, scholars 57,512; elementary schools 11,041, scholars 1,607,879; universities (1945): 4, students 27,082.

**Finance.**—Commercial bank deposits (1947) 750,700,000,000 lei; savings bank deposits (1947) 80,000,000,000 lei; gold reserves (1946) U.S. $269,000,000; public debt (1945) 98,930,752,000 lei. Currency: leu; exchange rate (Aug. 15, 1947): $1 = 150 lei.

**Trade and Communication.**—Trade with Great Britain (1947, first 8 months): exports £122,662; imports £47,077. Roads (1945): 43,163 mi.; railways (1945) 5,962 mi.

**Agriculture.**—Wheat (1946) 1,773,118 short tons. Acreage planted (1947): (in thousand acres): wheat 4,151; rye 222; barley 1,022; oats 1,284; maize 10,789; buckwheat 899. Livestock pop. (1947): horses 768,461; cattle 3,047,964; sheep 7,084,633; pigs 1,405,726; goats 225,363; poultry 11,894,038.

**Mineral Production.**—Crude petroleum (1946) 4,606,000 short tons.

**Running:** *see* TRACK AND FIELD SPORTS.

**Rural Electrification.** The electrification of rural areas in the United States continued at a rapid pace during 1947. As of June 30, 1947, the Rural Electrification administration estimated that 3,574,641 farms, or 61% of all U.S. farms, were served with central station electricity. This represented an increase of 394,338 electrified farms over the previous year. REA estimated that 2,284,528 farms and about as many nonfarm dwelling units and other rural establishments still lacked electric service.

During the calendar year 1947, the REA program passed two significant milestones: cumulative loan approvals passed $1,000,000,000, and connected consumers went to more than 2,000,000. REA borrowers connected more new consumers than in any previous year, bringing service to an estimated 346,000 farms and other rural units. They added an estimated 87,000 mi. of distribution lines to their rural systems. The borrowers included 947 rural electric co-operatives, 41 public power districts, 20 other public bodies and 21 commercial power companies. At the end of 1947, they were serving 2,030,000 rural consumers and operating 594,000 mi. of distribution lines. During the calendar year, REA approved loans for its borrowers amounting to $232,518,256. This increased the total of all approved loans to $1,190,527,346. Loan funds advanced to borrowers during 1947 to pay for completed construction totalled $225,412,000, or about $81,000,000 more than was advanced in any previous year of the program. This indicated an improved supply of materials. In addition to the new miles of lines placed in operation, the construction program of the borrowers included the "heavying-up" of many miles of lines and other facilities to handle increased loads. It also included construction of additional generating and transmission facilities.

In 1947 REA borrowers started construction of power lines into hundreds of unelectrified rural areas, including many sparsely settled sections of the great plains. Thirty-five new systems were energized during the year, and extensive new construction work stemmed from the 869 systems already in operation.

The co-operatives also prepared plans for the extension of service into many other areas. Demand of rural people for service continued strong. At the close of the year, REA had on hand, or in process of preparation, a backlog of loan applications totalling $265,000,000.

Borrowers in nearly every state reported in 1947 that larger supplies of electrical energy were needed to meet increased power consumption on electrified farms. The increased demand reflected the needs of newly electrified farms and more intensive use of power on farms already served. Electricity had become a production tool on the farm, as well as an instrument for better living; farmers now used it to operate water systems, milking machines and milk coolers, pig and chick brooders, feed grinders, hay hoists, hay driers, grain blowers, corn shellers, farm shop tools and a variety of other production devices. Rural consumers served by REA-financed lines used 3,332,000,000 kw.hr. of electricity during the fiscal year that ended June 30, 1947, as compared with 2,477,000,000 kw.hr. in 1946 and 1,925,000,000 kw.hr. in 1945.

This greatly increased use of power by rural people helped REA borrowers to continue in 1947 the impressive financial record that had marked previous years. As of Sept. 30, a total of $143,372,000 of principal and interest had been paid on REA loans. Of this amount, $20,000,000 represented repayment of principal in advance of due dates. (C. Hn.)

**Canada.**—Expansion of rural electrification was undertaken in several parts of Canada in 1947. Nova Scotia reported 1947 completion of only a few miles of rural lines, bringing the total to 2,000 mi. of new rural lines, with 70,000 persons provided with power facilities. Prince Edward Island planned to take over all private electric generating companies at a cost of $8,000,000, and hook up existing power lines in two grids, which would simplify rural electrification. Power shortages in New Brunswick forced many industries to curtail operation and prevented widespread extension of lines into rural areas. Agitation began for increased electrical energy output based on coal or tidal power, rather than hydro power, to speed rural electrification. In Quebec, new rural substations, first of their kind in Canada, could be adapted for capacities ranging from 1,000 volts to 15,000 volts.

In Ontario 23,700 mi. of rural lines were constructed or were under construction at the end of 1946. They served 178,000 consumers. Late in 1946 the commission began a five-year plan of rural expansion, aimed at installing 7,300 mi. of new lines at a cost of $22,400,000, to bring power to 58,000 new rural consumers, including 32,000 farmers. During 1947 about 1,200 mi. were installed, and 16,800 of these new customers added.

In 1947 Saskatchewan passed legislation to reorganize the 18-year-old Saskatchewan Power commission into a crown corporation. With the objective of welding the power system of the province into a single system, the government had purchased two large private companies in 1945; in 1947 a third was added. While the commission concentrated on serving small urban areas, some new rural lines were added. In the Alberta government's throne speech of 1947, an extension of rural electrification was promised, but shortages continued to slow up plans.

By April 1947, 16.1% of Canada's farms were served by electricity. Of this number, 35% were in Ontario and .21% in Saskatchewan. At that time Ontario was using 79.75% of all the power that went into rural electric lines. (C. Cy.)

**Great Britain.**—Shortage of supplies and of generating plant at the power stations, together with the position created by the passing of the Electricity act, 1947, retarded progress with new rural-distribution schemes in Great Britain. The success already achieved in some parts of the country, however, was illustrated by figures given late in 1947 for the Dumfriesshire, Scotland, supply area, which showed that 12,000 rural consumers out of a total of 15,000 were connected to the supply, the estimated total of units sold during the year being more than 32,000,000, at an average price of 1.30*d.*, and the maximum demand nearly 10,300 kw.

Constructional work on several of the North of Scotland Hydro-Electric board's generation and distribution schemes gathered momentum, and in May work began on the Mullardoch-Fasnakyle-Affric project to produce about 250,000,000 kw.hr. per annum. By the early 1950s the total generating capacity provided by the board was expected to reach 820,000 kw. to generate 2,300,000,000 kw.hr. a year. Research and development work in agricultural electrification was being carried out upon grain drying and hop drying and upon hay finishing by blowing cold or slightly warmed air through the grass.

**Other European Countries.**—Work was started on the rural-electrification scheme of the Eire Electricity Supply board. It was decided to develop in each county 25 sq.mi. unit areas having a network to supply every farm within the area. In the U.S.S.R., isolated rural communities were being supplied with electricity from small hydroelectric stations, and some Danish villages were being electrified from wind-driven generators of about 35 kw. capacity. A 5-h.p. or 7½-h.p. tractor, electrically operated through a 170-yd. length of trailing cable, was developed in Norway, particularly for use on small farms. A 5-h.p. unit ploughing on the rope-haulage system was being manufactured in France, and in the U.S.S.R. a 54-h.p. electric tractor, supplied through a 750-m. cable, was developed and a number of experimental models successfully passed extensive field trials.

machines could do 2 ac.–2$\frac{1}{2}$ ac. an hour with a consumption
acre of 18.6 kw.hr. Steps were being taken to promote in-
ased electrification of agriculture in the Netherlands also,
re interest was being shown in its application to ploughing.
France electricity was applied on the farm to grain drying
he barn by blowing cold air through the grain. (E. W. G.)

**ral Rehabilitation Loans:** *see* Farmers Home Admin-
ration.

**ssell Sage Foundation:** *see* Societies and Associations.

**ssia:** *see* Union of Soviet Socialist Republics.

## ssian Literature.

The standard of soviet literature reached its lowest point during 1947,
en none of the most highly acclaimed soviet writers produced
rk of vital interest to readers outside the Soviet Union, while
se writers with the makings of a universal appeal, such as
onid Leonov, were barren. The immediate cause of this fail-
must be sought in the ideological purge inaugurated in 1946
Andrey Alexandrovich Zhdanov. Official pronouncements
ring 1947 soon demonstrated that more lay behind the purge
n met the eye. Initially the main charge was that certain
ters and editors were not pulling their weight in the recon-
uction of their war-ravaged fatherland; but it was soon evi-
nt that the main preoccupation of the Communist party was
harnessing of soviet literary talent to the task of convincing
people of the U.S.S.R. of their own invincible moral
ength, of their essential goodness, of the superiority of "soviet
n" to any other kind of man, and of the ability of mankind,
viet mankind, to master his fate, fashion the universe to his
l, and stride onward and upward in an uninterrupted progres-
n. This thesis, applied to the arts in general and literature in
rticular, could only be expressed in the method known as
cialist realism, an unrelievedly optimistic approach which was
ntrasted with the pessimistic decadence of western formalism.
cialist realism was defined afresh by Alexander Fadeyev, the
w secretary of the Soviet Writers' union, on the occasion of
e annual congress of the union. It was nothing less than the
lebration of "the new human being of our age." More par-
ularly, it was "the outcome of the appearance of a new type
hero enjoying opportunities for unlimited moral progress—
e merging of reality and the ideal in the living image of man."
his had in fact for long been the official ideal of soviet writers;
it hitherto they were able to dilute the heroic qualities of the
ew man with observations and qualifications from real life.
he year 1947 saw the temporary end of such qualifications.
ny writer who still showed an interest in the workings of the
uman soul and allowed himself to speculate, however obliquely,
to the real meaning of life upon this planet was labelled as a
ecadent formalist. The most impressive casualty was Boris
asternak, the *doyen* of soviet poets, who was comprehensively
tacked in the Communist party's cultural weekly, *Kultura i
hizn* (*Culture and Life*), in April. Later in the year the cam-
ign was broadened as part of the general line stressing the
periority of Russian to western culture, and the complete in-
pendence of Russia from western influences. The climax of
is movement was the public rebuking of Gheorghi Alexandrov,
e minister for agitation and propaganda, who had himself until
en been in charge of the ideological crusade. The rebuke was
lministered by Zhdanov. Alexandrov's fault was his too
mpathetic treatment of the philosophers of the west in his own
onumental work *A History of Western Philosophy*, which
therto had represented the party's view. It would evidently
some time before the more able soviet writers perfected a
w technique for producing readable novels in which all the
aracters would be either socialist heroes or members of a
lower species of mankind. (W. E. Cw.)

**Russian S.F.S.R.:** *see* Union of Soviet Socialist Republics.

## Rye.

The 1947 crop of rye in the U.S. increased remarkably over the short crop of 1946, which was the smallest in more than 70 years except for that of 1934. The 1947 crop was estimated at 25,977,000 bu. compared with 18,879,000 bu. in 1946, a gain of 38% but still much below the ten-year (1936–45) average of 37,934,000 bu. The acreage of rye harvested in 1947 was estimated at 2,022,000 or 22% above the 1,607,000 ac. harvested in 1946. Average yield was 12.8 bu. per acre, however—above the 11.7 bu. average of 1946 and 11.9 bu. for 1936–45. Rye stocks were very low on June 1, 1947, following the small 1946 crop and the strong demand for all grains for feed. Less than 5% of the 1946 crop remained on farms on June 1, 1947. The average farm price of rye was $2.18 per bushel in Jan. 1947, $2.36 in July and $2.45 in December.

*U.S. Rye Production in Leading States,
1947, 1946 and 10-Year Average, 1936–45*

(In thousands of bushels)

| State | 1947 | 1946 | 10-yr. Average 1936–45 | State | 1947 | 1946 | 10-yr. Average 1936–45 |
|---|---|---|---|---|---|---|---|
| South Dakota | 4,858 | 2,530 | 6,589 | Kansas | 627 | 556 | 917 |
| North Dakota | 4,360 | 2,156 | 6,750 | Kentucky | 518 | 518 | 253 |
| Nebraska | 2,592 | 3,070 | 4,155 | Ohio | 510 | 289 | 916 |
| Minnesota | 2,460 | 1,534 | 4,384 | Montana | 507 | 330 | 413 |
| Michigan | 1,120 | 672 | 1,104 | Oklahoma | 480 | 432 | 760 |
| Wisconsin | 1,000 | 874 | 2,181 | Colorado | 470 | 646 | 704 |
| Indiana | 8,400 | 621 | 1,479 | Virginia | 392 | 392 | 511 |
| Illinois | 7,980 | 475 | 912 | Missouri | 338 | 368 | 512 |

The world's rye crop increased to about 1,515,000,000 bu. in 1947 compared with 1,455,000,000 bu. in 1946 and a prewar (1935–39) average of 1,730,000,000 bu. The increases were in the Soviet Union, Hungary, Canada and the U.S. The Soviet Union crop amounted to about 60% of the world's total. The European harvest was estimated at 520,000,000 bu.—less than the 1946 crop but above the prewar average. (J. C. Ms.)

## Saar.

Following the separation of the Saar from the rest of Germany in Oct. 1946, gradual preparation was made for economic union with France, to which Britain and the U.S., but not the U.S.S.R., agreed in principle during the Moscow conference of March and April 1947. In Dec. 1946, its territory had been extended northward and westward so as to include the whole of the German valley of the Saar and give it a common frontier with Luxembourg. This brought the frontier to the gates of Trier and increased its area from 743 sq.mi. to 1,106 sq.mi., and its population from approximately 788,000 to 880,000. This step aroused protests from France's allies and in February they were informed that it was provisional. Georges Bidault reaffirmed this in Moscow in April. The frontier was revised in June 1947, the area immediately adjacent to Trier being restored to Germany, but a narrow common frontier with Luxembourg being retained. The area within this frontier was 981 sq.mi. and the population 852,000. At the same time a Saar mark was introduced in the place of the reichsmark.

In May a commission of Saarlanders, proportionate to party strength in the municipal elections, was appointed to draft a constitution: it consisted of ten members of the Christian People's party, five Social Democrats, two Communists, two Democrats and one jurist as consultant. Elections for the Landtag took place on Oct. 5. It met for the first time on Oct. 14. The election results were as follows: Christian People's party 230,063 votes and 28 seats; Social Democrats 147,261 votes and 17 seats; Communist party 37,929 votes and 2 seats; Democrats 34,253 votes and 3 seats.

The constitution which the Landtag had to examine provided

PLACARD advocating union of the Saar with France being posted on a building in the Saar basin early in 1947. Popular sentiment, voiced indirectly through the elections of Oct. 5, was overwhelmingly in favour of economic fusion with France

for a parliamentary government under a French high commissioner. The French took steps to provide the Saar with a university of its own at Homburg, where a medical faculty was opened in 1947. The mines were under direct French management and reached 80% of prewar production in Sept. 1947. Seventy thousand tons of steel were produced in the same month. The Saar was occupied by the French gendarmerie and not by the army. Gilbert Granval was governor. (D. R. Gi.)

**Safety:** *see* Accidents.
**St. Christopher:** *see* Leeward Islands.
**St. Croix:** *see* Virgin Islands.
**St. Helena and Ascension Islands:** *see* British Empire.
**St. John:** *see* Virgin Islands.
**St. Kitts-Nevis:** *see* Leeward Islands.

## St. Louis.

Eighth largest city of the United States, St. Louis, Mo., had a population of 816,048 by the federal census of 1940, with an additional 541,567 persons living within its greater metropolitan area. A census bureau report, at mid-year, 1947, indicated a 13% increase (177,000) in the metropolitan area after 1940. Mayor in 1947: Aloys P. Kauffmann.

The municipal government was beset with financial troubles in 1947, growing out of rising costs. In 12 months ending April 1947, an operating surplus shrank from $3,145,275.29 to $42,270.08. A deficit of around $2,000,000 was anticipated for the close of the 1947–48 fiscal year on April 12, 1948.

To meet the soaring cost of government, the city curtailed some services, dropped 700 employees (at a saving of $1,500,000 in a half year) and sought new sources of revenue. Five tax measures, expected to yield $1,700,000 annually, were passed. They increased the cigarette tax from 2 cents to 3 cents, levied 5% taxes on other tobacco products, placed a 5% admission tax on theatres and sports events. Because defectively drawn, the tobacco tax was vetoed for redrafting.

Meanwhile, an ordinance was passed raising the salaries of city employees by $2,136,000 annually.

Missouri supreme court decisions affected city finances. A city income tax was ruled invalid, eliminating $2,500,000 yearly revenue and requiring refund of $2,000,000 already collected. But the city's imposition of vehicular tolls on the formerly free MacArthur bridge spanning the Mississippi river was upheld. That saved $900,000 per year revenue.

The Republicans and Democrats split 14 aldermanic seats at stake in an election, April 1, 1947. The G.O.P. won the board of aldermen presidency, and retained its dominance gained in 194 after eight years of Democratic supremacy.

A two weeks' bus and streetcar strike in June 1947 crippled the city and cost the community an estimated $25,000,000, of which $13,200,000 represented lost retail store sales.

The tax rate (city, school and state) for the 1947–48 fiscal year was $2.74 on $100 valuation. Other fiscal figures were: assessed valuation of real and personal property $1,555,147,990; bonded debt $43,933,000; receipts (for municipal operation only) during the 1946–47 fiscal year $27,195,548; expenditures during the same period $30,640,545. The budget for the 1947–48 fiscal year was $32,777,749, with receipts expected to be about $2,000,000 less than that. (E. L. R.)

**St. Lucia:** *see* Windward Islands.
**St. Pierre and Miquelon:** *see* French Overseas Territories.
**St. Thomas:** *see* Virgin Islands.
**St. Vincent:** *see* Windward Islands.
**Sales, Retail and Wholesale:** *see* Business Review.

## Salt.

The production of salt is so widely scattered that it is impossible to collect complete world data, but the known output in 1937 was around 33,000,000 short tons. Food uses are world-wide, but it is in the industrial uses that the larger portion of the output is consumed. The United States, Germany, Great Britain and France have accounted for almost two-thirds of the world production and consumption.

**United States.**—The salient data on the production and consumption of salt in the United States are as follows, in thousands of short tons:

| | 1946 | 1945 | 1944 | 1943 | 1942 |
|---|---|---|---|---|---|
| Production | 15,132 | 15,394 | 15,717 | 15,214 | 13,69 |
| Evaporated | 3,250 | 3,183 | 3,943 | 3,994 | 3,51 |
| In brine | 8,471 | 8,706 | 8,326 | 7,961 | 7,37 |
| Rock salt | 3,412 | 3,506 | 3,448 | 3,259 | 2,80 |
| Consumption | | | | | |
| Soda ash | 6,958 | 7,087 | 7,340 | 7,158 | 6,67 |
| Other chemicals | 3,097 | 3,249 | 3,568 | 3,351 | 2,68 |
| Food production* | 824 | 790 | 830 | 921 | 90 |
| Food preservation† | 1,610 | 1,656 | 1,638 | 1,624 | 1,46 |
| Table and household | 708 | 682 | 603 | 666 | 68 |
| Health, comfort, safety‡ | 746 | 694 | 578 | 671 | 58 |
| Other uses | 1,191 | 1,237 | 1,162 | 824 | 70 |

*Agriculture and livestock feeding. †Meat packing, fish curing, butter, cheese, canning preserving and other food processing, and refrigeration. ‡Water softening and purifica tion, sprinkling highways and railroad right of ways, dust and ice control.

While salt production declined slightly from the war peak the 1946 total was greater than in any year preceding 1944.

**Canada.**—Salt production dropped from 673,076 short tons in 1945 to 537,985 tons in 1946, but picked up to 731,500 tons in 1947. (G. A. Ro.)

## Salvador, El.

A republic on the west coast of Central America, the only one without a Caribbean littoral. It is the smallest but the most densely populated Central American state. Area: 13,176 sq.mi.; pop. (off. est. June 30, 1946) 1,997,169. The capital is San Salvador (1944 pop. est., 110,435). Other cities are Ahuachapán (13,765), Cojutepeque (15,317), Nueva San Salvador, formerly Santa Tecla (24,239), San Miguel (18,676), San Vicente (13,637), Santa Ana (47,631) and Sonsonate (17,540). Language: Spanish; religion, Roman Catholic. President in 1947: Gen. Salvador Castañeda Castro.

**History.**—The political situation continued tense in 1947. ots designed to overthrow the government were discovered d crushed in March and June, and constitutional liberties uspended in Sept. 1946) were not fully restored during the ar. Few strikes occurred, and the government maintained a nds-off policy in industrial disputes while working toward mpletion of a new labour code.

Agriculture experienced a profitable year, but industry (es- cially textile manufacturing) was seriously hampered by an ectrical power shortage arising from a failing water supply. oout 74% of the country's electrical power was dependent oon hydroelectric plants. A continued favourable balance of ade provided the country with a surplus of foreign-exchange edits. In spite of shortages of construction materials, electri- l equipment and machinery, the capital city experienced a rec- d building boom. During the first six months, a total of 812 ilding permits (valued at 7,000,000 colones) were issued as mpared with a total of 449 permits for all of 1946.

On the international scene, El Salvador refused to accord cognition to the new government in Nicaragua, but continued maintain cordial relations with the Franco regime in Spain. he drafting of a constitutional basis for a new union of the entral American republics continued at San Salvador during ie year.

**Education.**—Primary schools in 1945 numbered 1,519, with approxi- ately 100,000 students and 3,700 teachers. In 1947 the first free public gh schools in the country were opened, in the national and six pro- ncial capitals. Intermediate schools numbered about 50 in 1944, with 207 students. In 1946 the national university had 935 students and 8 professors. The federal appropriations for education in 1947 amounted 2,903,040 colones. The country had 35 motion-picture theatres with total seating capacity of 32,700 as of Jan. 1, 1947.

**Finance.**—The monetary unit is the colón, valued at 40 cents U.S. on ept. 15, 1947. The 1947 budget, providing expenditures of 46,524,- 52.51 colones (approx. 41,500,000 colones in 1946), was increased in eptember by an additional 6,500,000 colones. The foreign debt at the eginning of 1946 amounted to $18,300,000, including unpaid interest. 1 1947 El Salvador continued to enjoy large gold and foreign-exchange alances in contrast to dollar shortages in the other Latin American ountries. As of June 30, bank holdings in foreign exchange amounted 52,542,259.90 colones ($21,016,903.97).

**Trade and Resources.**—Exports in 1946 totalled $26,200,000 ($21,331,- 31 in 1945) and imports were valued at $21,100,000 ($13,534,230 in 945). During the first four months of 1947, exports were up to $25,- 00,000 and imports to $12,100,000. Coffee (805,190 bags of 132 lb. ach in 1946) was the chief export commodity. The exportable produc- on from the 1947–48 crop was estimated at 1,035,000 bags (960,000 ags for 1946–47). Sugar production provided an exportable surplus es- imated at 20,286,000 lb. for 1947. The 1946–47 cotton crop (nearly ouble the 1945–46 yield) was 9,517,354 lb. Early estimates placed the ice yield for 1947–48 at 1,180,000 bu. (799,000 bu. in 1945–46). In 945 there were approximately 706,200 cattle, 25,000 sheep and 32,000 oats in the country.

**Communications.**—Two railroads were in operation with an estimated 85 mi. of track. All-weather highways totalled 1,436 mi. (150 mi. aved) and unimproved roads 2,300 mi. The country was served by ne national and two foreign air services. There were 4,411 telephones nd about 11,000 radio sets.

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## Salvation Army.

The Salvation Army is a religious and charitable organization operating in 1947 n 97 countries and territories throughout the world, preaching he Gospel of Christ in 102 languages and dialects. Its 17,915 orps (local organizations) included 27,811 officers and 104,324 ocal officers (laymen), in addition to its many "soldiers" and dherents.

The social service work, including children's homes and hos- itals, maternity homes and hospitals, family welfare bureaus, ndustrial institutions, boys' clubs, summer camps for needy nothers and children, missing persons bureaus, and many other ctivities, is the Salvation Army's practical manifestation of Christianity in Action."

The International Salvation Army was commanded in 1947 y General Albert Orsborn, the sixth general, elected on June 1, 1946, with headquarters in London. In the United States, Commissioner Ernest I. Pugmire was the national commander with headquarters in New York city.

During World War II, the activities of the International Salvation Army extended around the world. From every corner of the globe came Salvationists to serve the armed forces. Operating on 26 fighting fronts, these services included 3,000 Red Shield canteens and huts and 1,000 mobile canteens, many of which landed with the invasion troops.

Close behind the invasion forces, Salvation Army relief teams moved into the devasted countries, providing aid to thousands of war victims in Europe. Centres for the distribution of food and clothing were organized; hospitals, clinics and children's convalescent homes were established. Many of these were still being continued in 1947.

In the United States, the Salvation Army mobilized its forces to help returned veterans adjust themselves to civilian life, giving spiritual and material aid in solving family difficulties and in the rehabilitation of the mentally ill.

In 1947, the Salvation Army began a world-wide intensified spiritual offensive titled, "The Fighting Faith Crusade," which was to be continued through 1948. One of the most vital features of the Salvation Army's program is the intensified work among youth, which includes the opening of new playgrounds, youth centres, summer camps and varied character-building activities.

Recognized as a semiofficial adjunct of United States penal system, the Salvation Army operates an extensive program for the rehabilitation of prisoners. Untiring effort is devoted to understanding each individual, regardless of race, creed or previous record. Religious meetings, song services and visitation are part of the Salvation Army's program in practically every federal prison, state penal and correctional institution in the United States. Under the guidance of Salvation Army officers, Brighter-Day leagues are formed behind the gray walls.

Salvation Army missionary work is financed by an annual Self-Denial fund. During Self-Denial week Salvationists do without something usually regarded as a necessity and contribute such amounts to the missionary funds which help to support the organization's work in India, China or Africa. (*See* also CHURCH MEMBERSHIP.) (E. I. P.)

## Samoa, American.

The Samoan Islands extend from 13° 26′ to 14° 22′ S. lat. and from 168° 10′ to 172° 48′ W. long., and are about 2,700 mi. east of Australia and 2,200 mi. south of the Hawaiian Islands. American Samoa consists of the inhabited islands of Tutuila, Tau, Olosega, Ofu and Aunuu, and the uninhabited coral atoll, Rose Island. Swains Island, an inhabited coral atoll, 210 mi. northwest of Tutuila, was made a part of American Samoa in 1925. Total population of American Samoa as of July 1, 1946, was 17,077; total area is 73.1 sq.mi.

A tripartite treaty signed by the U.S., Great Britain and Germany in 1899 divided the Samoan Islands into two possessions with the U.S. receiving what is now American Samoa and Germany the rest. American Samoa is governed by a naval officer appointed by the president. A legislature, the *Fono*, represents all districts and advises the governor. The judiciary consists of a high court, district courts and village courts. Each of the three administrative districts has a native governor who appoints county chiefs who appoint village chiefs. Pago Pago, on the island of Tutuila, is the capital and Samoa's best harbour.

In 1946 there were 46 public schools and 7 private schools in American Samoa with 4,068 students and 130 teachers. About 94% of the population was literate, according to the 1940 census.

American Samoa has few natural resources of economic importance. The main products are copra and mats woven from local grasses. About 1,000 tons of copra are exported annually. About 50 tons of taro, 65 tons of bananas, 25,000 coconuts, 25,000 oranges and 15,000 papayas are produced annually. During the fiscal year 1947–48, about $225,000 was appropriated for the island government. The possession's annual pure income is estimated at $635,000.

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**Samoa, Western:** *see* New Zealand, Dominion of; Pacific Islands under Trusteeship; Trustee Territories.

## Sand and Gravel.

The production of sand and gravel in the United States, subdivided into the major types of use, is presented in the following table, in thousands of short tons.

| | 1946 | 1945 | 1944 | 1943 | 1942 |
|---|---|---|---|---|---|
| Sand | 96,440 | 71,726 | 68,978 | 82,053 | 107,371 |
| Building | 49,132 | 31,508 | 27,213 | 34,098 | 49,518 |
| Raving | 28,932 | 22,313 | 21,479 | 28,024 | 38,396 |
| Moulding | 6,974 | 7,191 | 8,983 | 8,295 | 8,256 |
| Glass | 4,849 | 4,682 | 4,443 | 3,972 | 3,622 |
| Ballast, engine | 3,512 | 3,855 | 4,065 | 4,182 | 4,529 |
| Abrasive | 907 | 643 | 898 | 838 | 807 |
| Other uses | 1,955 | 1,535 | 1,898 | 2,015 | 2,243 |
| Gravel | 157,691 | 123,798 | 125,805 | 152,011 | 196,975 |
| Building | 43,177 | 30,055 | 28,609 | 35,227 | 54,412 |
| Paving | 100,535 | 71,351 | 73,083 | 94,769 | 115,680 |
| Ballast | 12,010 | 20,668 | 21,267 | 19,407 | 23,110 |
| Other uses | 1,970 | 1,734 | 2,846 | 2,607 | 3,773 |
| Total | 254,131 | 195,524 | 194,783 | 234,064 | 304,346 |

The effects of the postwar building boom are clearly shown in these figures.

**Canada.**—The combined output of sand and gravel in Canada rose from 29,750,703 short tons in 1945 to 39,949,994 tons in 1946 and 48,262,300 tons in 1947. (G. A. Ro.)

**Sandstone:** *see* Stone.

## Sandstroem, Alfred Emil Frederick

(1886– ), Swedish jurist, was born in Nyköping, Sweden. Obtaining his law degree in 1908, he rose to positions of eminence in Sweden's judicial system, serving as chief justice of the supreme court from 1931 to 1933 and from 1935 to 1943. He was also a member of several important international tribunals and was chairman of the International Red Cross and Swedish Red Cross Relief mission to Greece, 1943–46.

In the spring of 1947, Sandstroem loomed as a figure of international importance; his name had been submitted by the United States to the United Nations as candidate for Trieste governor; but Andrei Gromyko, the soviet delegate, rejected the nomination without explanation. Then on June 2, he was named head of the U.N. Special Committee on Palestine (U.N.S.C.O.P.); the Swedish jurist was considered an excellent choice for this delicate task; in addition to the important fact that he came from a neutral country was his widely-known reputation as an objective jurist.

After going to Palestine for an on-the-spot investigation of the dispute, Sandstroem's committee on Aug. 31 issued a comprehensive report recommending a free Palestine. The committee's majority favoured separate Arab and Jewish states while the minority urged establishment of a federal Palestine under a central government.

## San Francisco.

Mayor Elmer E. Robinson took office Jan. 8, 1948. The resident population of San Francisco, Calif., on Jan. 1, 1948, was estimated at 807,700. The U.S. census reported 827,400, Aug. 1, 1945. Preliminary reports for 1947 revealed 19,541 births in San Francisco and 9,557 deaths.

San Francisco general business activity during 1947 was expected to exceed that of the preceding year. Some specific factors showing upward trends during the first 11 months of 1947 as compared with the same period of 1946 were: general business activity was up 5.9%; financial transactions (bank debits for individual accounts) 9.1%; retail department store sales 1.7%; independent store sales (for first 10 months) 7%; building permits 3.1% in number and 1.1% in value; electrical energy sales 6.0%; industrial and commercial gas sales 5.2%; and airport plane traffic 24.9% and passenger traffic 10.4%. The number of ship arrivals during the 11 months was almost one-third greater than a year before, exports one-half greater, and imports four-fifths greater. Activities receding from the exceptional levels of 1946 included real estate, stock exchange transactions, freight car movements and placement of workers. The number of taxable retail sales outlets in San Francisco on June 30, 1947, totalled 24,042 or an increase of 1,199 more than the preceding year. Independent outlets accounted for 21,141 and chains 2,901 compared with 20,147 and 2,696, respectively, in 1946. Announcements of new industries and expansions for San Francisco during 1947 totalled about 200 with outlays of $17,650,000 compared with 284 with outlays of $15,000,000 in 1946. Living costs at the end of the third quarter in San Francisco were 14.9% above the same period of 1946.

San Francisco's funded debt outstanding on June 30, 1947, was $116,244,443. Estimated revenue receivable during the fiscal year 1947–48 amounted to $121,090,553. The total assessed valuation for the 1947–48 fiscal year was $1,281,812,029. The tax rate for 1947–48 fiscal year was $5.62 per $100 assessed valuation.

Progress bonds for $87,050,000 were approved by the people of San Francisco at the Nov. 1947 election to provide for basic public improvements including $22,200,000 for rehabilitation of the municipal railway system; $22,850,000 for street improvements, including special provision for several major through streets and street extensions; $5,000,000 to provide off-street parking facilities to relieve congestion and expedite traffic; $12,000,000 to pay the cost of improving and enlarging public playgrounds and recreation centres for the city and county of San Francisco and $25,000,000 to pay the cost of construction of a second pipe line across the San Joaquin valley to augment the existing water supply. A $55,000,000 San Francisco world trade centre was authorized by the California state legislature. (R. B. Kr.)

## San Marino.

An independent republic in northern Italy, 14 mi. southwest of Rimini by road. Area: 38 sq.mi.; pop. (Sept. 1939) 14,547. Chief town: San Marino. Executive power is exercised by regents, two of whom are appointed every six months from the popularly elected grand council of 60 members. Wine, cattle and building stone from the Mount Titano quarries are the chief exports.

**History.**—In Jan. 1947 the U.S. Claims commission investigated San Marino's claims against the Allies for bomb damage. By agreement with Italy (April 26), San Marino's claims were forwarded by Italy to Washington and London—they were estimated unofficially to be in the neighbourhood of £2,500,000, which included damage arising from the occupation by the 8th army from Sept. 21 to Oct. 20, 1944, as well as the air raid of June 26, 1944. (J. Ra.)

**Santo Domingo:** *see* Dominican Republic.
**São Tomé:** *see* Portuguese Colonial Empire.
**Sarawak:** *see* North Borneo.

## Saskatchewan.

Central of the three prairie provinces of Canada, Saskatchewan was created by parliament in 1905. Area: 251,700 sq.mi., of which 13,725 are lakes; pop. (1941) 895,922; (1947 est.) 842,000. Of the 1941 population, 600,846 were rural dwellers, and 477,563 were male. Chief cities: Regina, provincial capital (58,245); Saskatoon

027); Moose Jaw (20,753); Prince Albert (12,508).

istory.—The Co-operative Commonwealth Federation (So- st) government passed 118 laws at the 1947 sitting of the slature. Included were a 44-hr. work-week bill for urban s; provincial price control, particularly rentals; permission municipalities to operate bakeries, dairies, service stations similar facilities. A bill of rights erased racial, religious, and ur discrimination. Saskatchewan civil servants were per- ed to take part in the political affairs (in 1947 there were o more civil servants than in 1944, when the C.C.F. took e). The 1947 budget of $45,591,100 was $6,000,000 above 1946 budget. The supreme court of Canada declared *ultra s* the Saskatchewan Farm Security act, providing for re- ed interest in farmer's debts during poor crop years. The katchewan Court of King's Bench declared five labour acts *a vires* where they affected employees of railways. The 18 ally-owned projects made a net profit of $329,500 for the 6 ths ending Sept. 30, 1946 ($228,000 net profit for the year ing March 31, 1946). The provincial compulsory hospitaliza- scheme cost about $1,000,000 more than estimated, al- igh 96% of taxpayers made their 1947 contributions.

**lucation.**—Enrolment in educational institutions for the 1944–45 ol year was 203,166. To facilitate education, the government pro- d mantel-type radios and sold them to schools at cost.

**ansportation.**—Highway expenditures in 1947 totalled $4,316,751, a rd figure; 239 mi. were hard-surface, another record figure. Sched- flights to all settlements of importance in the north were started by crown-owned Saskatchewan Air Service.

**griculture.**—The wheat crop in 1947 was estimated at 173,000,000 (1946: 208,000,000 bu.); oats 80,000,000 bu. (1946: 117,000,000 ; barley 45,000,000 bu. (1946: 46,000,000 bu.); rye 6,780,000 bu. 46: 3,400,000 bu.); flax 3,500,000 bu. Total number of livestock rses, cattle, sheep, swine) in 1946 was 3,847,000 (1944: 4,835,000). h farm income from grain and field crops, produce, livestock and stock products was $127,931,000 for first 6 months of 1947 ($123,- ,000 in same 1946 period). Farmers received $14,000,000 under the irie Farm Assistance act during 1947. Combine crews working in the in the 1947 harvest season earned $3,000,000. During 1947 Sas- chewan farmers retired $99,367,000 of mortgage obligations.

**roduction.**—The gross value of 1945 production was $575,140,633. The value was $364,706,923, which was 5.99% of Canada's total. The capita production was $431.61.

**inerals.**—With 67 oil wells in production, 10 months' flow produced ,071 bbl., compared with 136,874 bbl. for all of 1946. Mineral out- for 1947 was estimated at $25,540,000 (1946: $20,783,813; 1945: ,164,036). Discovery of potash, near Unity, first Canadian source, considered Canada's most important mineral find in 20 years.

(C. Cy.)

**udi Arabia:** *see* Arabia.

**vings and Loan Insurance Corporation, Federal:** Housing.

**vings Banks:** *see* Banking.

### chuman, Robert

(1886– ), French statesman, was born on June 29 at Luxembourg, of rraine stock. Admitted to the bar in Metz before World War he was elected deputy of the recovered *département* of selle in 1919, and was afterward continuously re-elected. In chamber of deputies he was a member of the mildly con- rvative Republican Democratic union, but in 1932 he joined (Catholic) Democratic Popular party. On March 21, 1940, was appointed undersecretary of state in Paul Reynaud's inet with the task of looking after the refugees from Alsace- rraine, a post which he kept after the armistice. When the rmans re-annexed the three recovered *départements* and in t. 1940 started the expulsion of Lorrainers from the Moselle, human was arrested by the gestapo and sent to the reich in ril 1941 for protesting, but he escaped in Aug. 1942 and nt into hiding in France. Again elected deputy of the Moselle Oct. 1945, and later re-elected, he joined the M.R.P. *ouvement Républicain Populaire*). He was minister of finance the cabinets formed by Georges Bidault (June–Nov. 1946) d Paul Ramadier (Jan.–Nov. 1947). On Nov. 22, 1947, he s elected by the national assembly by 412 votes to 184 to m a new government.

### Schwellenbach, Lewis Baxter

(1894– ), U.S. jurist and cabinet member, was born Sept. 20 in Superior, Wis. He was graduated from the University of Washington, Seattle, Wash., in 1917 with an LL.B. degree and served with the U.S. army as a private during World War I. He was admitted to the bar in 1919, became active in Democratic state politics, and in 1934 was elected to the U.S. senate. During his tenure, Sen. Schwellenbach supported the administration in both its domestic and foreign policies. He resigned from the senate in Dec. 1940 to become federal judge of Washington state, eastern district. President Harry S. Truman named him secretary of labour, May 23, 1945, and his appointment was approved by both the A.F. of L. and the C.I.O.

In 1946, Schwellenbach, who was credited with originating the fact-finding procedure for settling labour disputes, was opposed to the Case Strike Control bill. The following year, he was one of the leading advocates of the proposal to outlaw the Communist party, declaring Oct. 14, 1947, that the party merited extinction because it took orders from a foreign government. However, many union leaders felt that he was over-emphasizing the importance of the Communist issue to the detriment of labour in general. Schwellenbach also objected to the ruling of Robert N. Denham, general counsel of the National Labor Relations board, that top union officials must file financial data with the secretary of labour. On Nov. 13, he was named by Pres. Truman to the National Security Resources board.

**Scotland:** *see* Great Britain & Northern Ireland, United Kingdom of.

**Scrap:** *see* Secondary Metals.

### Sculpture.

In spite of rising costs and continued shortage of materials, much sculptural work was accomplished in 1947. Two significant developments were increased activity and renewed consideration of the proper role of sculpture in the modern world. Much discussion centred on the question of "living" as opposed to aesthetic memorial projects, and artists and architects met to consider the relationship of sculpture to modern building. A closer collaboration was advocated. New work, meanwhile, was widespread.

**United States.**—Public sculptures completed during 1947 were more numerous than in any year since World War II. A bronze statue of Senator William E. Borah by Bryant Baker was placed in the rotunda of the capitol in Washington, and a granite bust of Franklin D. Roosevelt by Gleb Derujinsky was unveiled in the Roosevelt library at Hyde Park, New York. A bronze bust of Bernard M. Baruch by Rudulph Evans was presented to the National War college in Washington, D.C., along with a bust of Fleet Admiral William F. Halsey by Wheeler Williams to the Naval academy at Annapolis.

Perhaps the outstanding U.S. work of 1947 was the Mormon memorial by Mahonri Young, unveiled at Salt Lake City during the summer in honour of the pioneers of 1847.

New York gave several good sculpture exhibitions, including an exhibition of Ivan Mestrović's work (*see* below). Jo Davidson had a 43-years' retrospective show of portrait busts at the American Academy and National Institute of Arts and Letters; works by William Zorach and Gaston Lachaise were exhibited in one-man shows, and the Metropolitan museum surveyed U.S. sculpture from the 19th century with the collaboration of the Whitney Museum of American Art, thus bringing together two important collections. Frederick D. R. Roth, noted animalier, had a memorial show given by the National academy in February. Younger sculptors who continued their rise in exhibitions were Maria Martins of Brazil and Herbert Ferber.

IVAN MESTROVIC, Yugoslavian sculptor, at work on the "Pieta," a 5½-ton group executed in Carrara marble which was included in a one-man exhibition of his work at the Metropolitan Museum of Art, New York city, during April–May 1947

The principal occasion for constructive discussion of sculpture in relation to modern architecture was a forum held by the Architectural League of New York, in connection with which modern works by Henry Moore, Jacques Lipchitz, Isamu Noguchi, José De Creeft and others were exhibited. The result was a wider recognition of the need for good and appropriate sculpture on buildings or memorials, replete with a sound organic understanding of the scale relationship of sculpture to architecture.

**Great Britain.**—On Oct. 22 King George VI unveiled the statue of his father, King George V, a work in Portland stone by Sir William Reid-Dick, who also completed the model for a memorial statue in London to Franklin D. Roosevelt. Jacob Epstein exhibited at the Leicester galleries earlier in the year, showing portraits of Winston Churchill and Jawaharlal Nehru and some lively small bronzes. J. Estcourt Clack was awarded "The Best Work of the Year" medal by the Royal Society of British Sculptors for "Daphne," a figure in yew. Other well known English sculptors were at work on large civic commissions—Charles Wheeler, McMillan and A. Hardiman.

**Continental Europe.**—Iva Mestrović, one of the greate European sculptors, held h first one-man exhibition sin World War II at the Metropo tan museum, New York. Aft escaping from imprisonment Zagreb during the war, worked in Switzerland, then 1946–47 in Rome. Interestin work was done in Italy by Ma ino Mazzacurati, Pericle Fa zini and Leoncillo Leonardi. Norway, younger sculptors i cluding Gustav Janson and J seph Grimeland came to th fore, while Anna Grimald was commissioned for work the new Oslo town hall. Th standard of sculpture in Swede was high, and among Danis sculptors Mogens Boggild, do ing work for the new Rad House, and Jorgen Gudmund sen-Holmgreen, who designed bronze group for the Jutlan town of Horsens were active i 1947. The Netherlands, follow ing the Sculptors' congress i 1946, made its most importan progress since the war.

Of all countries in Europ France still offered the greate encouragement to sculptors the state regularly commi sioned works, and architec were conscious of the value sculpture in their plannin Work in progress or newl completed included a statue Vincent d'Indy by Marcel G mond, a monument by George Salendre to those who died during the liberation in 1944, figure by Henri Laurens commissioned by the state, and "Hom Sapiens" by Ossip Zadkine. An exhibition of French sculptur was held in Prague, ranging from Rodin and Maillol to contem porary sculptors. (*See* also ART EXHIBITIONS.) (C. BU.)

**SEC:** *see* SECURITIES AND EXCHANGE COMMISSION.
**Secondary Education:** *see* EDUCATION.

**Secondary Metals.** In connection with the data on secondary recoveries in Table I on pag 663, it should be pointed out that in most cases considerabl proportions of the total recovered comes from fabrication scra accumulated in the course of manufacture of finished products it is only metal brought back into use from old scrap that add to the useful supply of new metal.

Receipts of nonferrous scrap reported by dealers rose fro 1,034,873 short tons in 1945 to 1,053,785 tons in 1946. Ship ments by dealers to consumers increased in about the same pro portion, from 1,015,378 tons to 1,066,995 tons. Dealers' stock were 174,677 tons at the beginning of 1946, were at a low 158,855 tons in March and a high of 185,622 tons in May, en

Table I.—*Secondary Nonferrous Metals Recovered in the U.S.*

(In thousands of short tons or fine ounces)

| | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|
| oper—tons | | | | | | |
| As metal. . . . . . | 135.9 | 114.6 | 137.9 | 102.1 | 112.9 | 136.9 |
| In alloys . . . . . | 580.7 | 795.6 | 935.1 | 835.4 | 875.0 | 647.4 |
| n compounds . . . | 9.8 | 17.5 | 13.0 | 13.4 | 18.7 | 19.2 |
| Total . . . . . . | 726.4 | 927.8 | 1,086.0 | 950.9 | 1,006.5 | 803.5 |
| Percentage* . . . | 57 | 46 | 39 | 48 | 56 | 51 |
| d—tons | | | | | | |
| As metal. . . . . . | 75.3 | 68.6 | 58.3 | 55.0 | 61.1 | 73.7 |
| In alloys . . . . . | 322.1 | 254.4 | 283.8 | 276.4 | 301.9 | 319.1 |
| Total . . . . . . | 397.4 | 323.0 | 342.1 | 331.4 | 363.0 | 392.8 |
| Percentage* . . . | 96 | 79 | 83 | 88 | 86 | 88 |
| c—tons | | | | | | |
| As metal. . . . . . | 89.7 | 81.4 | 78.9 | 79.5 | 83.9 | 81.4 |
| In alloys . . . . . | 143.2 | 215.7 | 257.9 | 229.2 | 234.6 | 174.2 |
| n compounds . . . | 48.5 | 33.4 | 31.6 | 36.7 | 41.9 | 45.0 |
| Total . . . . . . | 284.0 | 330.5 | 368.5 | 345.5 | 360.4 | 300.7 |
| Percentage* . . . | 39 | 24 | 23 | 33 | 34 | |
| —tons | | | | | | |
| As metal. . . . . . | 5.9 | 5.8 | 5.2 | 4.2 | 3.7 | 2.9 |
| In alloys . . . . . | 35.0 | 31.8 | 32.3 | 27.9 | 30.9 | 24.3 |
| n compounds . . . | 1.1 | 0.3 | 0.3 | 0.5 | 0.5 | 0.4 |
| Total . . . . . . | 42.0 | 37.9 | 37.8 | 32.6 | 35.1 | 27.7 |
| Percentage* . . . | 70 | | | 66 | 68 | 63 |
| minum—tons | | | | | | |
| As metal. . . . . . | 8.3 | 14.1 | 5.9 | 2.3 | 2.1 | 2.1 |
| In alloys . . . . . | 97.6 | 182.7 | 306.8 | 321.7 | 295.4 | 275.4 |
| Total . . . . . . | 106.9 | 196.5 | 314.0 | 325.6 | 298.4 | 278.1 |
| Percentage* . . . | 41 | 21 | 11 | 7 | 9 | 33 |
| gnesium—tons | | | | | | |
| Total (in alloys) . . | 1.7 | 6.2 | 11.4 | 14.2 | 9.2 | 5.1 |
| Percentage* . . . | 1 | 1 | 1 | 1 | 8 | 24 |
| ckel—tons | | | | | | |
| Total . . . . . . | 5.3 | 4.1 | 6.9 | 4.3 | 6.5 | 8.2 |
| Percentage* . . . | 40 | 42 | 27 | 51 | 34 | 32 |
| timony—tons | | | | | | |
| Total . . . . . . | 21.6 | 18.2 | 15.5 | 15.9 | 17.1 | 19.1 |
| Percentage* . . . | 99+ | 99+ | 99+ | 98 | 88 | 84 |
| atinum—ounces . . . | 37.5 | 56.2 | 68.6 | 85.9 | 58.9 | 40.4 |
| O.P.M.†—ounces . . | 14.1 | 20.5 | 33.0 | 33.5 | 37.2 | 32.3 |
| old—ounces . . . . | 8,850 | 8,136 | 3,006 | 7,337 | 8,855 | |
| ver—ounces . . . . | 20,361 | 30,021 | 44,113 | 56,189 | 58,361 | |

*Percentage of the total secondary metal recovered from *old* materials, the remainder ving come from the reworking of new plant scrap.

†Other platinum group metals.

g at 161,477 tons.

**Iron and Steel Scrap.**—Data on consumption and consumrs' stocks of iron and steel scrap are given in the following ble, in thousands of short tons.

Table II.—*Data on Iron and Steel Scrap in the U. S., 1939–46*

| | Steel Production | Scrap Consumption | | Scrap Stocks | |
|---|---|---|---|---|---|
| | | Purchased | Plant | Purchased | Plant |
| 939 . . . . . . . . . . . . . | 52,799 | 76,705 | 19,622 | 3,373 | 1,937 |
| 940 . . . . . . . . . . . . . | 66,983 | 19,482 | 25,048 | 3,688 | 1,784 |
| 941 . . . . . . . . . . . . . | 82,839 | 25,312 | 33,904 | 2,559 | 1,167 |
| 942 . . . . . . . . . . . . . | 86,032 | 25,932 | 33,068 | 4,710 | 1,606 |
| 943 . . . . . . . . . . . . . | 88,837 | 26,614 | 35,037 | 4,204 | 1,668 |
| 944 . . . . . . . . . . . . . | 89,642 | 25,923 | 35,426 | 2,984 | 1,435 |
| 945 . . . . . . . . . . . . . | 79,702 | 25,230 | 30,961 | 2,705 | 1,218 |
| 946 . . . . . . . . . . . . . | 66,603 | 22,987 | 25,768 | 1,876 | 1,158 |

The scrap supply had been getting shorter from 1942, and in 946 reached about an irreducible minimum for the maintenance f normal production of steel. (G. A. Ro.)

## Secret Service, U.S.

The security work of the secret service, in respect to its protection f the president of the United States and members of his famly, was intensified with the opening of the White House to the ublic on Nov. 14, 1946. Through Oct. 31, 1947, 450,000 visiors were shown through the executive mansion. Considerable lanning was necessary incident to the president's trips to Mexco, South America and Canada. In one case secret service gents in Washington arrested a man who called at the White House and was discovered to be a fugitive from a New Jersey ospital for the insane. He was returned to the institution but scaped on Feb. 24, 1947, and was finally discovered, captured nd recommitted.

The uniformed force of the secret service protected a total of 197,910,704,023.53 in currency and coin, stamps, bonds and ther government securities in transit. Special details safeuarded production of Allied military certificates and of Siamse currency at Boston, Mass., and production of about 15,000,00 armed forces terminal-leave bonds.

Agents captured 13 counterfeit note plants during the fiscal year 1947. Counterfeiting of paper money was pushed toward prewar proportions by an influx of counterfeit U.S. money from Europe. In September U.S. secret service agents and French police captured 11 counterfeiters near Eguilles, France, and seized fake United States money representing $2,145,000, together with the plant where it was made. Of a total of $246,176 in counterfeit bills seized in the United States during the fiscal year, $59,580 represented bills made abroad. Counterfeit coins seized during the year totalled $9,214.79. There were 92 arrests and 69 convictions for violation of the counterfeiting laws, an increase of 84% over 1946.

Forgeries of cheques and savings bonds continued to grow. There were 1,920 persons arrested for cheque forgeries during the fiscal year, with 1,824 convictions. The secret service investigated 28,460 forged treasury cheques representing $2,049,852.98, of which 60.9% were solved cases.

The neglect of owners of savings bonds to safeguard their securities properly was primarily responsible for the increase in bond thefts and forgeries. Agents completed investigations of 15,709 forged bonds with a total maturity value of $1,834,623.19, of which 72% were solved cases. There were 306 arrests and 273 convictions for bond forgery.

Fines in criminal cases aggregated $59,084.71, and jail sentences totalled about 2,558 years. Additional sentences of 2,786 years were suspended or probated. The secret service completed 47,803 criminal cases. Noncriminal cases investigated totalled 2,399, making a total of 50,202 investigations completed for the fiscal year. (J. J. My.)

**Securities:** *see* Business Review; Stocks and Bonds.

## Securities and Exchange Commission.

This bipartisan, quasi-judicial agency of the U.S. government was composed of the following members on Oct. 1, 1947: James J. Caffrey, chairman, and Robert K. McConnaughey, Richard B. McEntire, Edmond M. Hanrahan and Harry A. McDonald, commissioners. With headquarters in Washington, D.C., the commission maintains regional offices in Atlanta, Baltimore, Boston, Chicago, Cleveland, Denver, Fort Worth, New York, San Francisco and Seattle.

**Securities Act of 1933.**—Securities registered with the commission under this act during the 1947 fiscal year aggregated $6,700,000,000, bringing the total of securities registered to $42,400,000,000.

The objective of securities registration (to which requirement there are certain limited exceptions) is to provide accurate and adequate disclosure of significant financial and other information concerning the issuing company and the securities it offers for public sale, so that, in determining whether to purchase the securities, investors may be guided by the factual disclosures thus provided. Assuming proper disclosure, the commission has no power to withhold from public sale securities which may be lacking in merit. Obviously, therefore, registration is not to be construed as an indication that the securities are a riskless medium of investment or speculation. Nor can the accuracy of reported facts be guaranteed; but the penalties which attach to the filing of false information, together with the investors' right to recover losses if falsity is established, are conducive to correct factual disclosures.

The prospectus or selling circular must contain a summary of the pertinent information contained in the registration statement filed with the commission, and must be delivered to purchasers or persons receiving offers through the mails. In SEC-industry conferences commenced during the year, suggested

Securities act amendments were being considered which, among other things, were planned to afford investors a better opportunity to consider the prospectus before being committed to the purchase of registered securities.

The commission's enforcement activities against securities violations are discussed below.

**Securities Exchange Act of 1934.**—Similar factual disclosures, though not so comprehensive, are provided under this act in respect of 2,215 issuing companies having 3,560 security issues listed and registered at the year-end upon the 19 national securities exchanges. Exchange trading during the year aggregated $14,800,000,000, most of which involved the 3,560 issues. The law also provides for disclosure of pertinent facts in respect of matters of corporate affair upon which proxies are solicited from holders of listed securities. In addition, there are requirements for reporting the stockholdings and transactions of "insiders," and provisions permitting recovery by the corporation of their short-term trading profits, which tend to curb misuse of inside information.

Provisions of the act and regulations of the commission thereunder prescribe certain minimum standards of business conduct in the securities markets, both exchange and over-the-counter, which operate to establish just and equitable principles of trade and to curb manipulation, misrepresentation and other abusive practices. These regulations, designed to protect the investing public against such practices, are implemented by the commission's surveillance of securities trading practices, its investigation of complaints and other evidences of malpractices, and its enforcement of statutory penalties against fraudulent operators. The law requires as an incident to the commission's powers of surveillance that over-the-counter brokers and dealers be registered. They numbered 4,085 at the year-end. Denial or revocation of complaints and other evidences of malpractices, and its membership in an exchange or the registered association of over-the-counter brokers and dealers, which operates as a bar to the conduct of a securities business in interstate commerce, may be ordered by the commission if, after hearing, the securities laws are found to have been violated. Any such order is subject to review by U.S. circuit courts of appeal. Persons or firms against whom such action had been taken numbered 312 as of June 30, 1947. Other sanctions include civil injunction actions and criminal prosecutions, discussed below.

**Public Utility Holding Company Act of 1935.**—This regulatory measure, applicable to holding company systems of electric and gas utility companies, requires various readjustments by system companies to correct the incongruous results of past malpractices and abuses which were declared by congress to be inimical to the interests of investors, consumers and the public, and which gave rise to enactment of the law. The act specifies that holding company systems shall be confined in their operations to economically integrated and co-ordinated utility properties (including under certain conditions incidental systems and businesses); that over-capitalized and complex systems and corporate structures be simplified; and that voting power among security holders be redistributed on a fair and equitable basis. It also provides for the regulation of the financial and related practices of system companies in order to avoid the recurrence of past abuses.

Approval during the fiscal year of nine additional plans for compliance with the integration and simplification requirements of the act evidenced steady and continued progress in carrying out those objectives. Numerous other cases of a similar nature were carried to advanced stages. At the year-end, in excess of $8,000,000,000 of properties whose control by particular holding companies was proscribed by the act had been eliminated from their systems, and an additional $2,500,000,000 was the subject of orders requiring divestment. Comparable achievements were reflected in the field of corporate simplification and equitable redistribution of voting power among security holders. The issuance and sale of securities in the aggregate amount of $10,800,000,000 had been passed upon by the commission as meeting the standards prescribed in the act by congress.

**Other Acts.**—During the fiscal year, indentures covering $2,600,000,000 of debt securities were qualified as meeting the prescribed standards of the Trust Indenture Act of 1939, bringing the total to $11,800,000,000. At the year-end, 352 investment companies with assets approximating $3,500,000,000 were registered under the Investment Company Act of 1940, which prescribes standards for the conduct of their businesses. Under the Investment Advisers Act of 1940, there were registered 952 firms and persons engaged in the business of advising others with respect to their securities transactions. The commission had participated as adviser to federal courts in 269 cases involving the reorganization under chapter X of the Bankruptcy act of 327 debtor corporations.

**Enforcement Activities.**—The commission has the duty to investigate complaints or other evidences of securities violations, and may subpoena witnesses, books and records to develop facts bearing thereon. If apparent violations are thus established, the commission may seek federal court orders of injunction to stop the activities complained of, or may refer the facts to the attorney general for prosecution if fraudulent or willful misconduct is apparent. Persons or firms enjoined to the end of the fiscal year numbered 1,166, while convictions numbered 1,222. (*See* also STOCKS AND BONDS.) (O. L. Ds.)

## Seeing Eye, The.

The Seeing Eye, Inc., was founded as a national philanthropy in 1929. It derives its support from contributions of members, who in 1947 numbered almost 25,000. In 1947, 144 blind men and women left the school with their dog guides after having spent one month learning to use them. Ninety-six of them received their first dogs and 48 their second or third dog. The school continued to supply eligible World War II veterans, blinded in service, with guide dogs without cost to them or to the government. A total of more than 1,400 dogs had been trained for blind people who had learned how to use them at the school. Seeing Eye graduates were in all 48 states, the District of Columbia, Canada, Puerto Rico and Hawaii. They were engaged in more than 100 different occupations. Modern kennels, to which the dogs were moved in 1946, proved efficient and labour-saving, allowing apprentices and instructors more time for training the dogs. The Seeing Eye is located in Morristown, N.J., and has no branches. Henry A. Colgate is president and chairman of the board of trustees. (H. A. CE.)

## Seismology.

Earthquake activity in 1947 was generally of a normal character. Seismological research in the United States received considerable impetus through a co-operative program sponsored by the Research and Development board in Washington, D.C.

The greatest earthquake casualties of the year were reported from the Khurasan province of eastern Iran on Sept. 23, when 5 villages were destroyed and 400 lives were lost. On Nov. 1, 233 persons died in a widespread shock in the San Ramón area of central Peru. Twelve villages were reported levelled in the Isca Sabino and Santa Dello area of southern Italy on May 11 and 12. Shocks of damaging intensity occurred in El Salvador on Jan. 24, Gisborne, New Zealand, on March 26, and central Alaska on Oct. 15. In the U.S. the strongest shocks centred in sparsely settled areas in southern California and southwestern Montana. Many adjoining states felt a slightly damaging shock

inating in southern Michigan, while disturbances of more
l character shook the San Francisco, Milwaukee and St.
is areas.

he Finne Ronne Antarctic expedition established a tem-
ary seismograph station in Palmerland to conduct seismo-
cal and meteorological investigations. Because of continu-
success the navy's project for tracking hurricanes in the
st Indies from seismographic data was extended to the west-
Pacific area. In the U.S. modern instruments were installed
he City college of New York and at the bureau of reclama-
's dam project at Hungry Horse in northwestern Montana.
University of Washington, Seattle, Wash., made plans to
blish three seismological stations in the Puget Sound area
re two strong shocks occurred in 1946.

eismological methods were employed to explore the sub-
anic structure of a portion of the sunken mid-Atlantic ridge.
ilarly the nature of subcontinental structure was further re-
led by the controlled detonation of large quantities of ex-
sives in the Snake River valley of Idaho and in the Helgo-
d blast of April 18.

he application of electronic principles in building visible re-
ding seismographs of high magnification was advanced con-
erably, but such equipment generally required servicing by
electronics expert. (*See* also Coast and Geodetic Survey,
.; Disasters.) (F. Nn.)

## lective Service.

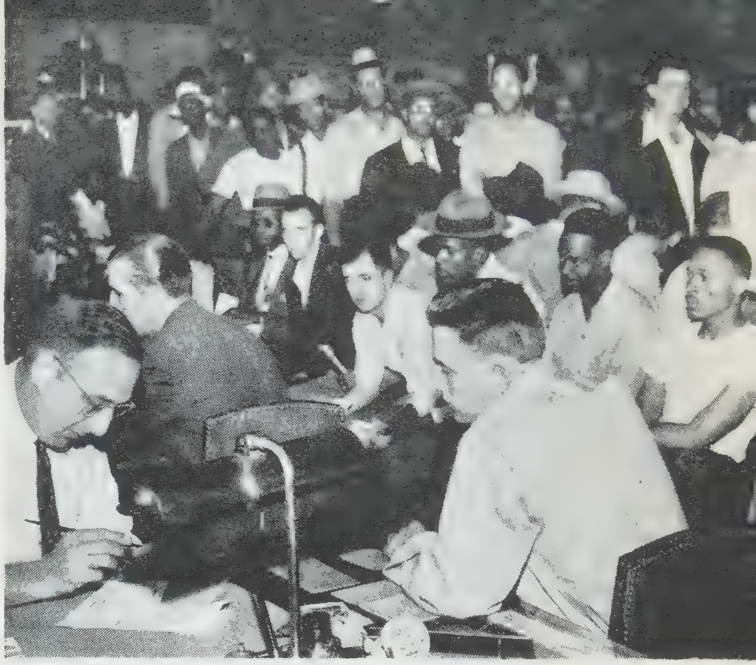
The U.S. Selective Training and Service act of 1940, responsible for the
uction of about 16,000,000 men into the armed forces,
ired at midnight, March 31, 1947, after congress failed to
e action extending the measure. Congress, in permitting the
iration, was following the recommendation of President
rry S. Truman, who declared in his congressional message
March 3 that re-enactment would be requested if sufficient
unteers could not be obtained to meet the needs of national
ense.

On the same day that the act expired, congress enacted and
president signed legislation creating the Office of Selective
rvice Records and providing for the transfer of all property,
ords, as well as personnel, to the new agency. Maj. Gen.
wis B. Hershey was appointed director by the president and
mediately confirmed by congress. Gen. Hershey had long
en identified with Selective Service planning and administra-
n.

Liquidation of the Selective Service system started April 1
d plans were ready to reduce compensated civilian personnel,
ich reached a peak of approximately 25,000 during wartime
d which numbered 7,500 on March 31, to approximately 1,200
Nov. 1, 1947, when liquidation was virtually complete, al-
ough the act set March 31, 1948, as the deadline for the
uidation.

The act provided for federal record depots, and one was es-
blished in each state and territory, New York city and the
strict of Columbia, making a total of 54, to preserve, main-
n and service the Selective Service records. These records
ntained data concerning 44,000,000 men, which, in the words
the senate committee which recommended passage of the act,
re of much value to the several governmental and State
encies who have a legal right to the information."

The veterans personnel division of the Selective Service sys-
n was created by the original act of 1940 to protect the job
hts of registrants inducted for military training and service
d was continued throughout all amendments of the act until
ose functions were delegated to the U.S. department of labour
the 1947 law.



U.S. VETERANS waiting to cash terminal leave bonds at a New York city bank, Sept. 2, 1947, the day on which the bonds became convertible

Two other important sections of the act creating the Office of Selective Service Records provided for: (1) the continuation of the confidential nature of Selective Service records with a provision for penalties for violation of those confidences; (2) authorizing the director to prescribe the necessary rules and regulations to carry out the provisions of the act.

With certain specified exceptions, all information in a registrant's file was ruled to be confidential by regulations issued by the director. The exceptions included: (1) The registrant or any person having written authority from the registrant. (2) The legal representative of a deceased registrant upon presentation of letters testamentary. (3) All personnel of the Office of Selective Service Records while engaged in the administration of the Selective Service Records law. (4) United States attorneys and their duly authorized representatives, including agents of the Federal Bureau of Investigation. (5) Personnel of the counter intelligence corps, United States army, but only when proper identification and credentials are presented. (6) Such other agency, official or employee, or class or group of officials or employees, of the United States or any state or subdivision thereof, but only when and to the extent authorized in writing by the director, or when listed by the director in a list of federal officials authorized to obtain information.

The training division of the Office of Selective Service Records is charged with the execution of that part of the law which requires the preservation of the knowledge and methods of Selective Service.

The degree of success achieved by Selective Service in World War II is related closely to the planning and training accomplished in the years between World Wars I and II. Where the planning and training were good, the operation was good. In fields where problems were not foreseen, difficulties arose, with serious effects upon operations, because benefit of planning was absent.

The objective of the training division is to train members of Selective Service sections of state national guard staffs, reserve officers of the several components of the armed forces, and others who may participate, in the principles and methods of use of manpower in national emergencies. (L. B. H.)

**Great Britain.**—Final demobilization of the vast British armies of World War II took place in 1947. By the end of 1946 approximately 4,300,000 men and women had already been released. The process was continued in 1947, and by Jan. 1948 virtually all who served in the war and had not volunteered for further service had returned to civil life.

In the king's speech at the opening of the parliamentary session on Nov. 12, 1946, it was announced that national service would be formally introduced for the postwar armed forces, instead of being as before a legacy of the wartime regulations and organization. A territorial army on a new pattern came into being on Jan. 1, 1947. It was to be composed in part of volunteers, for whom recruiting would begin in 1947, and in part of conscripts, denominated "national service men," who would pass into its ranks from the regular forces after serving in them for a period of 18 months. The same regulations were to apply to the reserve services of the royal navy and royal air force. Thus the whole of the country's manhood would serve with the regular forces for 18 months and then be liable to 5½ years' compulsory part-time service in the reserves. The normal calling-up age was to be 18 years, but provision was made in certain circumstances for calling up to take place at the age of 17½; for young men taking up professions such as those of doctor and dentist, it could be deferred until the age of 25. Underground miners were not subject to the call up for service, and no woman would be compulsorily enrolled in the women's services, although these were to be maintained on a small scale. The peacetime service of 18 months was to come into operation in 1949, but as the first of the national service men would not have passed through it until 1950, no conscript element would reach the territorial army and the equivalent naval and air force services until that year.

When, however, the National Service bill came up for its second reading in March, it was strongly opposed by a section of the government's supporters. Recorded against it were 87 votes. Before the adjournment of the house of commons for Easter, a government amendment was put down to reduce the period of 18 months' compulsory service to one year. This was carried in May, but the incident was a blow to the government's prestige, especially to that of the new minister of defense, A. V. Alexander, who, having argued at length that 18 months was necessary, had now to show that one year would suffice.

None of the changes outlined above exercised any effect upon the strength of the armed forces in 1947. Changes were, however, introduced in another way. It had been laid down in the demobilization scheme that the total strength of the armed forces would be reduced to 1,087,000 by March 1948. On Aug. 6, 1947, in reviewing measures to meet the economic crisis, the prime minister announced that demobilization was being accelerated so as to reduce this number to 1,007,000. Finally, on Oct. 21 he stated that 150,000 more were to be hastened out of the services, bringing the figure down to 937,000. This rush out of the services brought in its train dangerous results which caused widespread anxiety, especially with regard to the navy. The home fleet was reduced to a very low ebb late in the year in order to supply crews for ships on distant stations. It was explained, however, that this dislocation would be but temporary.

The handicaps to efficiency produced by the legislation and decisions of the year did not seem to affect the strength of the armed forces, which continued high. The difficulty lay in the fact that one year's service was insufficient to train men for the more skilled trades, certainly to get any value from them in those trades. This deficiency would have to be met by voluntary recruitment for longer periods, and so far voluntary recruitment, while substantial, had not been big enough to fill the gap.

(C. B. F.)

## Selenium.

Production of selenium in the United States declined from 542,099 lb. in 1945 to 291,103 lb. in 1946, because of curtailed operations in the copper refineries which recover it as a byproduct. In Canada output increased from 397,187 lb. in 1945 to 521,867 lb. in 1946, dropping back to 375,000 lb. in 1947. (G. A. Ro.)

**Senate:** *see* CONGRESS, UNITED STATES; ELECTIONS.

**Senegal:** *see* FRENCH OVERSEAS TERRITORIES.

**Serbia:** *see* YUGOSLAVIA.

**Serum Therapy:** *see* MEDICINE.

## Seventh-day Adventists.

The year 1947 was one of reorganization and rehabilitation for this religious body so far as its overseas activities were concerned. Before World War II ended several million dollars had been raised by the North American members for restoration of physical properties abroad. This money was heavily drawn upon in 1947 for rebuilding hospitals, schools and other institutions in Europe, in the far east and in other war stricken areas. The program was not confined to restoration; new institutions have been either erected or provided for.

In the United States an expansion program was developing. Buildings either under construction or in the blueprint stage totalled in excess of $20,000,000. These were largely schools and medical institutions.

The budget voted for 1948 to all divisions of the world field was $14,497,506. This was about $500,000 more than for 1947, the highest in the history of the church. This sum did not include the funds used to pay salaries of ministers or other denominational employees in the United States and Canada or to maintain church properties in these two countries.

The annual autumn council, held in Grand Rapids, Mich., Nov. 11–20, voted among other matters, the following: to reallocate and to consolidate certain publications, with a view to efficiency and economy of production and circulation; to create an international temperance association; to launch a temperance journal for the United States and Canada; to present to a select list of public and institutional libraries certain books dealing with the history and beliefs of the church; to raise the mission offering goal for each member in America from 60 to 70 cents per week per member; to launch a much enlarged evangelistic program, particularly in the major cities of America.

The "Voice of Prophecy" radio network program conducted by the church made large growth overseas. To the two stations operating in China, five more were added. Beginning in 1948 there were to be European broadcasts in French, Italian, Danish and German.

In September a Youth's congress was held in San Francisco, Calif., to which several thousand youths from all parts of the United States, Canada and near-by islands came.

On Sept. 30, 1947, membership in the U.S. and Canada was 226,285; overseas, 379,847; grand total, 606,132. Church receipts in U.S. and Canada for 1947 were in excess of $29,000,000, or a per capita gift of $126.91. This total was apart from famine relief offerings. Enrolment in denominational schools in U.S. and Canada, as of Sept. 30, 1947, was in excess of 40,000. (*See* also CHURCH MEMBERSHIP.)

(F. D. N.)

**Sewage:** *see* PUBLIC HEALTH ENGINEERING.

**Seychelles:** *see* BRITISH EAST AFRICA.

**Sharpening Stones:** *see* ABRASIVES.

## Sheep.

During 1947 the U.S. sheep industry continued the decline it had experienced since 1942, at about the same rate. The estimated number was 38,571,000 head on farms Jan. 1, 1947, compared with 42,436,000 a year earlier and an average of 51,909,000 head during the decade 1936–45. The number of stock sheep in Jan. 1947, 26,100,000 head, was the smallest since the beginning of record in 1867. There had been a significant decrease in the number of farms keeping sheep, about 22% or 128,000 farms, between 1940 and 1945.

As a whole the industry was down to the level of 1923, when numbers had decreased following World War I. The decline was greatest in the north Atlantic states, Ohio and West Virginia; increases were reported in Missouri, Kentucky and Texas, while smaller increases were reported for the mountain states and California. The competition of cattle for pasturage forced sheep off the ranges; sheep raising had competed best when prices were relatively low for both cattle and sheep. The loss of competent herders during World War II started the liquidation.

The 1947 lamb crop of 22,400,000 head was the smallest in 22 years and 2,300,000 less than the 1946 crop. Heavy marketing of ewes of breeding age presaged further declines in the number of lambs.

The number of sheep and lambs in feed lots during the winter of 1946–47 was estimated at 6,029,000 head, compared with [illegible],837,000 head a year earlier. Because of the smaller feeding operations and the smaller lamb crop, the slaughter of lambs throughout 1947 ranged below 1946 and the ten-year average.

Prices to producers in Jan. 1947, averaged $7.63 per cwt. for sheep and $19 per cwt. for lambs. By June sheep prices had advanced to $8.40 and lambs to $21.10, a level that continued to December. These prices were about three times the prewar average of 1935–39.

The price of wool (*q.v.*) was steady at about 40 cents per pound through 1947. Large stocks accumulated during World War II were being sold slowly.

World sheep and wool production was beginning to decline in 1947 in several countries other than the U.S. Sheep numbers in the United Kingdom dropped 17% below 1946. Canada also reported fewer head. Australia and New Zealand, however, were holding to the high record numbers. Raising in South Africa suffered from droughts but was expected to recover rapidly. Sheep numbers in Argentina and other South American countries also declined. (*See* also LIVESTOCK; MEAT; WOOL.)

(J. C. Ms.)

## Shinwell, Emanuel

(1884– ), British politician, was born in London on Oct. 18. From 1922–24 and again from 1928–31 he represented Linlithgow in the house of commons, and was financial secretary to the war office in 1929–30. From 1935 he represented the Seaham division of Durham, winning his seat from Ramsay MacDonald by one of the largest Labour majorities of the election held that year.

When the Labour party came into power in 1945 he was appointed minister of fuel and power with a seat in the cabinet; earlier in his career, in 1924 and 1930–31, he had been parliamentary secretary to the department of mines. During his appointment the nationalization of coal mines, of which he was an ardent advocate, was carried through. In Oct. 1947 he became secretary of state for war; his place as minister of fuel and power was taken by Hugh Gaitskell. At the Labour party conference held in Margate in May, he was elected chairman of the party in succession to Philip Noel-Baker (*q.v.*).

## Shipbuilding.

The world tonnage of merchant ships of 1,000 gross tons or more, as of June 30, 1947, was distributed as follows:

| | Number of vessels | Gross tonnage | | Number of vessels | Gross tonnage |
|---|---|---|---|---|---|
| United States . . | 4,202 | 30,901,400 | Italy . . . . . . | 237 | 1,401,400 |
| United Kingdom . | 2,464 | 15,176,000 | Russia . . . . . | 417 | 1,306,300 |
| Norway . . . . | 699 | 3,435,300 | Greece . . . . . | 232 | 1,236,800 |
| Netherlands . . . | 393 | 2,224,400 | Other countries . . | 2,557 | 9,251,700 |
| France . . . . . | 352 | 1,963,500 | | | |
| Panamá . . . . | 337 | 1,954,900 | Total . . . . . | 12,370 | 70,420,800 |
| Sweden . . . . . | 480 | 1,569,100 | | | |

The total of 70,420,800 gross tons of vessels in the world fleet on June 30, 1947, may be compared with 58,270,374 gross tons on Sept. 1, 1939.

For the quarter ended Sept. 30, 1947, Lloyd's Register of Shipping reported 1,202 merchant vessels of 3,968,893 gross tons under construction in the world, of which only 55 of 177,669 gross tons were under construction in the United States. On Jan. 1, 1947, there were 63 seagoing merchant vessels of 395,000 gross tons under construction in the United States of which 30 vessels were for foreign account. During the calendar year 1947, 12 vessels and dredges were contracted for totalling 53,700 gross tons. By Dec. 31, 1947, the total number under contract had been reduced to 28 totalling 158,300 gross tons. These figures were in addition to miscellaneous small craft consisting of car floats, barges, tugs and fishing vessels which did not contribute greatly to the shipbuilding industry as a whole.

Ship repair yards were reasonably active during the calendar year 1947, largely because of numerous reconversion contracts applicable to wartime ships. This work was expected to decline during the first half of 1948 and virtually to be completed by the middle of 1948.

The number of vessels in the reserve fleets of the maritime commission declined during the middle of 1947, partly because of the withdrawal of tankers for service and the sale of ships, but it again increased during the latter part of the year as a result of the decline in the volume of relief cargoes as well as in the rates appertaining thereto. Many of the emergency types of ships which had been under charter were returned to the maritime commission for this reason.

A substantial number of damaged vessels was still being sold for scrapping, thus eliminating such vessels from further consideration.

The industry passed through a disastrous strike which affected the majority of the yards from June to September. Employment in private shipyards declined from approximately 152,900 in Jan. 1947 to 98,300 in Oct. 1947. The average hourly earnings increased from $1.273 for Jan. 1946 to $1.462 for Sept. 1947.

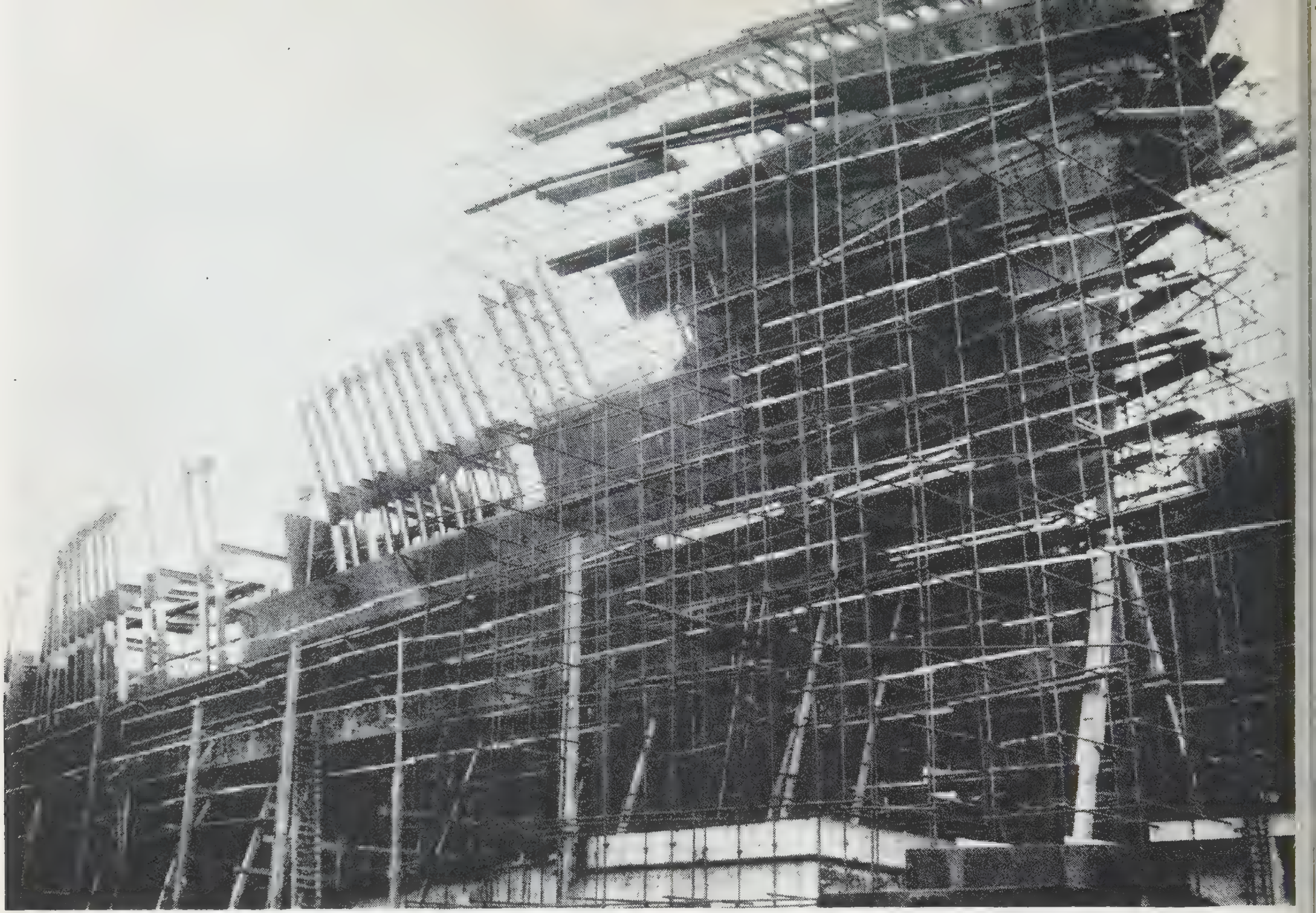
The outlook for the industry, as of Jan. 1, 1948, was not bright. Although the president's committee on the merchant marine, appointed in March 1947, had made its report and recommendations to the president, endorsing the construction of a group of passenger-carrying vessels as well as other tonnage, no definite action had been taken to carry out any of these recommendations. (*See* also SHIPPING, MERCHANT MARINE.)

(H. G. S.)

**Other Countries.**—In practically every European country the year 1947 saw the shipbuilding industry employed to the limit of its ability, although in many cases that was greatly reduced by World War II. Every effort was made to restore the facilities but the task was a heavy one and the result varied.

In Great Britain and Northern Ireland the damage done was not to be compared with that in some other belligerent countries and at the beginning of the year the yards had 454 ships of 1,937,062 gross tons under construction, 121 of these, of 478,124 gross tons, being on foreign account. The great majority of the ships building for British owners were liners or other special types; few tramps had been ordered for fear of the effects of the sale of the British and U.S. government fleets and the uncertain prospects of the tramping business. Because of delayed deliveries, the official returns of ships under construction tended to increase while the number laid down declined.

As in the countries of continental Europe, opportunity was taken of delayed maintenance and war-damage repairs to modernize the layout and improve the equipment of many British yards; frequently, a reduction in the number of building slips resulted in greater efficiency and a higher potential speed of working; and facilities were provided for changing methods, especially to increase fabrication and welding.



SCAFFOLDING on a 10,000-ton turbine ship being built in 1947 at the government-owned Tosi yards in Taranto, a shipbuilding centre on the southern coast of Italy

As was inevitable after a war, the industry's principal difficulties in most countries were with labour. As labour accounted for about 75% of the whole cost of a British-built ship, the effect of general unrest and the disorganization in changing over from war to peace was serious. The withdrawal of the Essential Works order made less difference than had been expected and comparatively little directed male labour left the industry, although many women, who had done excellent work in wartime, took the first opportunity of returning to their homes. Some of them returned, particularly for welding work, in the summer.

A great difficulty was the reduction of the week's work from 47 hr. to 44 hr. Assurances were given that it would not affect output and many men loyally co-operated, although there was friction over the demand that it should be worked in five days instead of five-and-a-half. Finally unions and employers agreed that five-and-a-half days should be worked from November to February and five during the remaining months, but it was not always easy to get the agreement honoured.

Changes in shipbuilding methods increased difficulties, causing friction as to which union should cover the new work to which the old rules for the demarcation of labour did not apply. This led to a number of sectional strikes against the advice of the unions.

In most countries it was hard to obtain material; in Britain the trouble increased with the coal shortage, which impeded production. Plastics were increasingly used in place of steel and wood. Subcontractors also found it impossible to make deliveries in the scheduled time—in one case a ship costing £400,000 was held up for some months for 3 essential electric motors whose total cost was less than £100. The result was that numerous ships were launched and then remained for weeks or months in the fitting-out berth; the builders were naturally unable to guarantee a time of delivery, and this caused more than one contract to be cancelled.

The price of new ships rose steadily during the year. It was double the prewar standard for the simplest specifications; for special designs it was much more and British prices per ton were higher than those of any of their European competitors except Belgium. That was considered to be serious, in view of the number of foreign contracts in British yards, for it was fully realized that the business was principally the result of unusual circumstances and that price would be the ruling factor as soon as continental European yards were able to undertake the work and frozen credits in sterling were exhausted. For repair work, which principally affected British owners, the cost was reckoned at about three times the 1938 level and delays were even worse. The government's 1947 target for the completion of 1,250,000 tons, less than the normal capacity of the yards, was not attained.

In most other countries the industry had similar difficulties. Sweden, with modernized yards, was able to quote low prices for excellent ships until most of the firms had three years' work in hand and were suffering from shortage of material. The Norwegian government took steps to develop the shipbuilding industry and made a number of loans for modernization and expansion. The U.S.S.R. vigorously restored the facilities destroyed by the Germans and established new ones, but no details were released.

The Dutch, French and Belgian industries, assisted by their governments, made excellent progress in repairing the damage done, against great obstacles. All new French construction was on government account but in the Netherlands the companies were, as far as possible, allowed to make their own arrangements. The Spanish government's large program made slow progress but the Italian recovery was remarkable, orders being secured from the Argentine, Norway, Sweden, Egypt, Denmark, Turkey, the Netherlands and Rumania. The United States granted Italy credit for a large sum to buy machinery and equipment, but the handicap of restricted steel supplies remained and, s the year progressed, both price and time under construction creased and many contracts had to be modified.

In the British commonwealth conditions during the year aried. In India the establishment of a big shipbuilding industry n both the east and west coasts was part of the new Indian govnment's scheme for shipping expansion; to begin with, a great eal of the machinery would come from Britain. Canadian shipards secured a large number of orders from foreign countries, rincipally for classes of sister ships, but efforts to keep the ustralian industry alive, after it had done good war work, were andicapped by costs which were reckoned to be the highest in e world. (*See* also Business Review.) (F. C. Bo.)

## hipping, Merchant Marine.

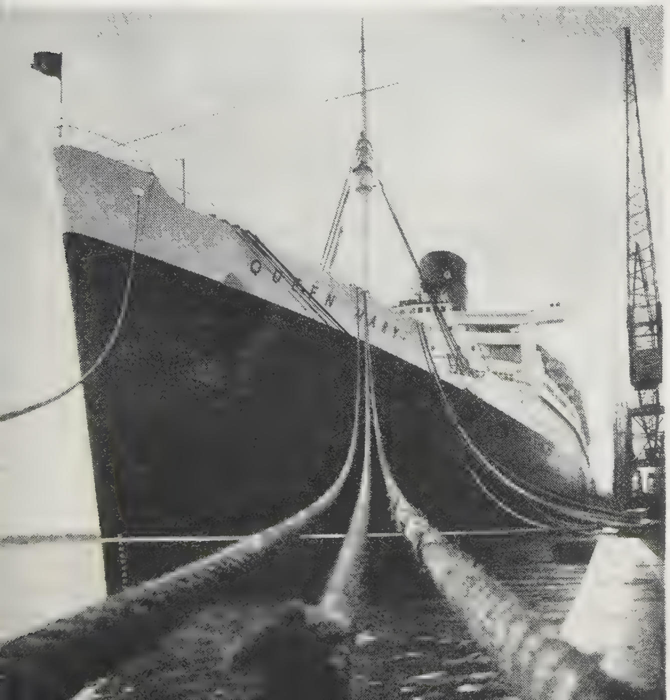
U.S. merchant ships in foreign trade were active uring 1947. Heavy demands for coal and grain and other elief cargoes kept the fleet at a high operating level. Most of his trade was carried on under private operation, for the reease of shipping from wartime government control proceeded apidly. Of the 900 ships under requisition by the government n V-J day, almost all had been returned to their owners by he end of 1947. Of 4,000 ships available for sale under the erchant Ship Sales act of 1946, 1,555 had been sold by Sept. 0, 1947, 481 to 123 operators of the United States and 1,074 o governments and citizens of 30 other nations. The return rom these sales was more than $1,400,000,000. All available overnment-owned tankers had been sold by December in nswer to an unprecedented demand for oil transport.

Ships which had not been sold or which were old, damaged r otherwise undesirable for operation were laid up in reserve eets. On Sept. 30 the number of vessels in these fleets numered 1,237.

In addition to vessels sold, the government chartered many f its ships to United States operators. The number under harter varied from month to month, reaching a peak of 1,510 n June 1947, and declining to 1,082 on Nov. 15, 1947. The overnment itself operated a few vessels under general agency greements to meet essential domestic needs, to provide emerency transportation for displaced persons and to provide aditional tanker service.

A number of factors darkened the shipping outlook toward the end of the year. The percentage of United States cargoes carried in U.S. flag ships had steadily declined from more than 60% early in the year to 50% in the fall. Costs were rising and freight rates were falling. Although the continuing need for European relief promised heavy exports for several years, competition from foreign flag ships was growing; and the need to conserve dollars was leading other nations to increase their efforts to provide their own shipping services.

THE "QUEEN MARY," reconditioned for commercial duty after serving as a roopship in World War II, is shown at an English dock just before her first ostwar voyage as a passenger liner in the summer of 1947



Domestic shipping was in a much less favourable position than overseas shipping during the year. This fleet, important to national defense because of its availability in home waters, was unable to return readily to peacetime service because freight rates, held down by low rates of competing land carriers, could not offset the sharp rise in costs. For a time the government operated ships in domestic trade at a loss in order to provide essential service and relieve the overburdened land carriers. On June 30, 1947, the government withdrew from the last of these services.

Charter rates were lowered for ships in domestic service, and a few operators ventured to return to these trades. At the end of the year the fundamental question of the rail-water rate structure, which had been referred to the Interstate Commerce commission for review, was still unsettled.

Shipbuilding too was at a low level. On Nov. 1, 1947, there were only 32 new oceangoing merchant vessels under construction in U.S. shipyards, and contracts on hand at the end of the year would all be completed within six months. Repair and reconversion work was also rapidly being cleaned up. Shipyards were facing the dispersal of their skilled working forces. Plans for filling in gaps in the fleet and for replacing vessels as they became obsolete were worked out by the maritime commission, the president's advisory committee on the merchant marine and other groups, but lack of materials and appropriations had prevented carrying out these plans up to the year's end.

Operating-differential subsidies, which had been suspended during World War II, were reinstated on Jan. 1, 1947. Studies were being made of shipping and shipbuilding costs in other maritime nations to determine the fair basis for parity payments to U.S. shipbuilders and operators to enable them to meet lower cost competition on shipping routes essential to the U.S. trade and defense. (W. W. Sh.)

**Other Countries.**—Throughout 1947 a shortage of tonnage felt by every country was made worse by the number of ships still in state service, the long delays in delivering new ships and carring out repairs, the time wasted in nearly all ports and by strikes. The turnover from war to peace was exceptionally difficult after World War II and there was little prospect of improvement in the immediate future. In all countries that had been belligerent the state maintained some measure of control.

In this shortage a number of owners, particularly the regular lines, bought or time-chartered Allied war-built ships and those surrendered by the axis that were offered for sale. Most were of types unsuitable for competitive liner work and the prices were generally high, but these ships were necessary to maintain the services. Norway, France and the Netherlands, in particular, had to acquire large tramps for reconstruction though their policy aimed at regular berth work. The Norwegians reestablished several carrying services to earn foreign currency. There was a ready market for secondhand tonnage but national regulations prevented practically all but old ships changing their flags.

By new construction, salvage and purchases from the U.S.A., most European countries and also China considerably increased their fleets, the recovery of Italy being spectacular.

The shortage of passenger tonnage was serious, in view of the desire to revive the European tourist trade and even more because of the immense demand for emigration to various parts of the British commonwealth and to South America. Emigration to the commonwealth was largely carried out under austerity conditions in ships not yet reconditioned after trooping service, and to South America in ships of the Argentine government fleet. Australia, New Zealand, Canada and South Africa in particular wished to receive large numbers of selected settlers when transport would permit it.

On the cargo side numerous difficulties involved heavy expenses and ballast voyages. One of the more serious was the continued stoppage of British coal exports, not only involving a much longer haul to consuming countries but causing a serious shortage of bunkers. Many coal-burners were converted to oil during the year, but in the autumn currency difficulties and a shortage of tankers caused a shortage of oil as well. Restrictions of imports by many countries, often at short notice, also hampered two-way transport.

A number of international conferences were held on various maritime matters but most awaited ratification. Partly as a result of the 28th maritime session (the Seamen's conference) of the International Labour office at Seattle, Wash., in June 1946, Britain, France and other countries made or were making arrangements to "decasualize" the seaman's work; but these arrangements were not all well received by the men whom they were intended to benefit.

China, India and Pakistan had great shipping ambitions which were being carried into effect by strong nationalist policies. In each case the great handicaps were the lack of officers and the age of many of the ships. (F. C. Bo.)

## Shoe Industry.

Consumer resistance to higher prices of shoes, which began to make itself felt at the end of 1946, gained momentum throughout the year 1947, for it was predicated on the vicious cycle of rise in costs from the hide to the finished shoe. Every item of manufacture and store expense from wages to wrapping paper rose to an all-time high.

The inevitable result of the continued rise in prices in the United States was a definite decline in the production and consumption of shoes. Shoe production for the year 1947 was estimated at 461,000,000 pairs—a far cry from the all-time high of 525,000,000 pairs in 1946. This decline in production was accounted for, in part, by curtailed manufacture of lower grade footwear and a shift in demand to the medium and higher grades, as consumers insisted on better quality for their shoe dollars.

Estimated consumption of shoes in 1947 was considerably less than in 1946; approximately 420,000,000 pairs of shoes moved into selling channels compared with a total of 510,800,000 pairs during 1946. Consumption of women's shoes was consistent and favourable, while that of children's and infants' shoes was exceptionally good.

Footwear styles remained somewhat static, in spite of the furore caused by the much publicized "new look." Here was an opportunity to change shoe styles and create a demand for additional and supplementary shoe wardrobes; but the best that was achieved was an imperceptible shift from the comfortable flats, with their open toes or heels (or both) to the higher less stable heels and the closed look.

Leather accounts for approximately 50% of the manufacturers' price of shoes. Throughout the year 1947 the supply of calf leather, particularly in the weights suitable for women's shoes, fell short of the demand. This situation was further aggravated by the fact that imports of calfskins in 1947 were negligible as compared with former years when calfskin supplies in the United States were augmented by imports from central Europe and New Zealand. Conditions of world markets and the short supply of raw materials kept prices at relatively high levels. Argentina proved to be a competitive element, for shipments of hides from that country served to check advancing prices in the United States. For a time, Argentina placed such high prices on its hides that, despite the fact that demand in the United States was in excess of domestic supplies of raw stock, there was little purchase of Argentine hides. It was not until Argentina eased its prices in October that it became profitable for United States tanners to do business with that country.

Hides bought early in November from Argentina had begun to arrive in late December, and the hide market situation in the United States was considerably easier.

There was keen interest in the results of the Reciprocal Trade Agreement conference held in Geneva, Switzerland. Twenty-three nations participated and an agreement, concluded Oct. 30, 1947, set down rules of international trade conduct with regard to tariffs and duties that it was hoped would make for freer access to world markets. General provisions of the

*Comparative Statistics of U.S. Shoemaking, 1945, 1946, 1947*

| | | Women's | Men's | Misses' and Children's | Youths' and Boys' | Infants' | All Other | Total |
|---|---|---|---|---|---|---|---|---|
| *Production of Shoes by Major Types (000's omitted)* | | | | | | | | |
| 1945 | All Leather | 120,149 | 65,409 | 42,009 | 14,237 | 30,348 | 21,624 | 293,776 |
| | Other | 75,829 | 2,881 | 12,436 | 1,680 | 4,640 | 52,651 | 150,117 |
| | | | | | | | | 443,893 |
| 1946 | All Leather | 180,319 | 103,141 | 50,771 | 20,451 | 34,600 | 26,216 | 415,498 |
| | Other | 54,574 | 1,052 | 3,158 | 191 | 3,169 | 48,131 | 110,275 |
| | | | | | | | | 525,773 |
| 1947* | All Leather | 189,700 | 105,600 | 52,600 | 18,600 | 31,500 | 18,900 | 416,900 |
| | Other | 15,600 | 400 | 1,400 | 200 | 2,500 | 24,100 | 44,200 |
| | | | | | | | | 461,100 |
| *Estimated Consumption of Shoes by Major Types (000's omitted)* | | | | | | | | |
| 1945 | All Leather | 125,000 | 62,000 | 41,000 | 15,800 | 31,000 | 20,000 | 294,800 |
| | Other | 86,000 | 3,500 | 12,800 | 2,000 | 4,000 | 46,000 | 154,300 |
| | | | | | | | | 449,100 |
| 1946 | All Leather | 179,000 | 102,000 | 49,800 | 18,800 | 32,800 | 25,000 | 407,400 |
| | Other | 52,000 | 1,000 | 3,200 | 200 | 3,000 | 44,000 | 103,400 |
| | | | | | | | | 510,800 |
| 1947* | All Leather | 168,000 | 96,500 | 48,500 | 16,000 | 28,200 | 16,000 | 373,200 |
| | Other | 16,000 | 500 | 1,500 | 200 | 2,600 | 26,000 | 46,800 |
| | | | | | | | | 420,000 |
| *Per Capita Production of Shoes by Major Types (Pairs per Capita)* | | | | | | | | |
| 1945 | All Leather | 2.32 | 1.27 | 3.67 | 1.05 | 2.71 | 0.15 | 2.10 |
| | Other | 1.46 | 0.05 | 1.09 | 0.12 | 0.41 | 0.38 | 1.08 |
| | | | | | | | | 3.18 |
| 1946 | All Leather | 3.46 | 1.99 | 4.32 | 1.49 | 2.91 | 0.19 | 2.94 |
| | Other | 1.05 | 0.02 | 0.27 | 0.01 | 0.26 | 0.34 | 0.78 |
| | | | | | | | | 3.72 |
| 1947* | All Leather | 3.63 | 2.03 | 4.29 | 1.30 | 2.40 | 0.13 | 2.89 |
| | Other | 0.30 | 0.01 | 0.11 | 0.01 | 0.19 | 0.17 | 0.31 |
| | | | | | | | | 3.20 |
| *Estimated per Capita Consumption of Shoes by Major Types (Pairs per Capita)* | | | | | | | | |
| 1945 | All Leather | 2.40 | 1.20 | 3.57 | 1.14 | 2.77 | 0.14 | 2.11 |
| | Other | 1.65 | 0.07 | 1.13 | 0.14 | 0.36 | 0.33 | 1.10 |
| | | | | | | | | 3.21 |
| 1946 | All Leather | 3.44 | 1.97 | 4.24 | 1.37 | 2.76 | 0.18 | 2.89 |
| | Other | 1.00 | 0.02 | 0.27 | 0.01 | 0.25 | 0.31 | 0.73 |
| | | | | | | | | 3.62 |
| 1947* | All Leather | 3.21 | 1.86 | 3.95 | 1.12 | 2.14 | 0.11 | 2.59 |
| | Other | 0.31 | 0.01 | 0.12 | 0.01 | 0.20 | 0.18 | 0.33 |
| | | | | | | | | 2.92 |

*Preliminary

agreement put forth, for the first time, a generally accepted code of fair treatment in commerce relations. Substantial concessions on certain classifications of footwear and leather were made by United States negotiators, who, in turn, won many concessions that were expected to prove beneficial in the long run. Other countries had been working feverishly to build up their shoe production and were rehabilitating their factories just as quickly as feasible. England was trying desperately to bolster its industry by increasing exports, and expected shipments to the United States to play a major part. Difficulties that were facing the industry were shortage of good quality upper leather and of machinery, but some of these worries were expected to be eased by priorities to producers who participated in the export program. British men's shoes had always had a favourable acceptance in the U.S. and England was anxiously angling for a small fraction of the U.S. men's shoe market. (*See* also LEATHER.) (E. G. AN.)

**Shoran:** *see* ELECTRONICS; RADIO.

## Shows, Animal.

**Horses.**—The horse show as a combined sporting and social event showed signs in 1947 of recovering its prewar prominence. Both the large exhibitions in metropolitan centres and the smaller shows in suburban communities reported increased participation and attendance.

The Fourth Annual Chicago Horse show made a record in prizes, with more than 400 horses entered in 119 classes. The New York National broke all previous records for attendance, and entries were above all previous shows. Other outstanding events were the shows at Los Angeles, Calif., San Francisco, Calif., Kansas City, Mo., Wichita, Kan., Houston, Tex., Columbus, O., and the large state fairs.

A notable feature was the growth of specialized shows of relatively new types of horses. The Shelbyville, Tenn., Walking Horse show in September brought together the largest number of this type ever assembled. The Palomino was also recognized as a distinct class of increasing importance. At Springfield, Mo., the National All Golden Horse show drew 223 entries from 18 states and Canada.

Recovery of the hunt clubs from the wartime recess was reported from Virginia, Kentucky and other eastern states. At Shelbyville, Ky., the August show attracted a large entry list of both hunters and gaited animals. The Royal Winter fair at Toronto, Can., was also an important horse show. (J. C. MS.)

**Livestock.**—Livestock shows and fairs recorded one of the most successful years in their history during 1947, when all of the expositions and all but several of the state fairs were again back on prewar schedules and attracted record entries and attendance.

Beginning its fourth decade, the annual National Western Live Stock show was held in Denver, Colo., during January, the first of the great sectional exhibitions on the country's show calendar. One of the few livestock shows of the country that continued throughout World War II, it had become one of the country's largest shows of purebred Hereford cattle. It was also distinguished for its large exhibits of Quarter horses.

Closely following upon the Denver show were two large Texas shows, the Houston Fat Stock show, Jan. 31 to Feb. 9, and the Southwestern Exposition and Fat Stock show at Ft. Worth.

The Ft. Worth show, oldest in the U.S., was one of the nation's strongest exhibitions of purebred Hereford cattle. As at Denver, spectacular rodeos were the chief entertainment feature.

A series of fall shows of national prominence included the American Royal in Kansas City, also one of the country's largest livestock shows. Its exhibitions of purebred Hereford, Aberdeen-Angus and Shorthorn cattle and its horse shows rank among the country's best.

The Pacific International at Portland, Ore., attracted large entries of both beef and dairy breeds.

The Aksarben exposition, a fat stock show, took place in Omaha, Neb., Sept. 27 to Oct. 5; and a new show was introduced in the east in Nov. 1947—the Eastern National Live Stock show at Timmonium, Md.

Two great California shows of the fall season were the Grand National Live Stock exposition in the new Cow palace at San Francisco, and the Great Western Live Stock show, held in Los Angeles.

The largest state fair livestock shows of the country included the Illinois, Iowa, Ohio, Missouri, Wisconsin and Minnesota state fairs in August; and the Indiana, Nebraska, Michigan, Kentucky, Kansas and Oklahoma state fairs in September.

The Wisconsin state fair was distinguished as one of the country's largest dairy cattle shows. A National Hereford show was held in 1947 in connection with the Nebraska state fair, and the National Percheron Horse show was a feature of the Ohio state fair in 1947. A National Barrow show, for all breeds of swine, was held in Austin, Minn., Sept. 18 to 20.

Two major September fairs on opposite coasts were the California state fair at Sacramento and the Eastern States exposition at Springfield, Mass. It was the first revival of the Springfield event since the war.

The continent's largest livestock show in terms of beef cattle breeds, draught and light horses, and fat swine and sheep,—the International Live Stock Exposition and Horse show in Chicago—was held in 1947 from Nov. 29 to Dec. 6. Auction sales of meat animals at the 48th annual International, for the first time exceeded $2,000,000; and the value of all livestock exhibits was estimated at between $15,000,000 and $20,000,000—the highest aggregate worth of farm animals ever assembled. Its eight-day attendance passed the 400,000 mark. Visitors attended from nearly every state and from every province of Canada as well as from several other countries.

The Calgary Exhibition and Stampede, a July fixture in Canada ranking with the dominion's major shows and entertainment events, was held July 7 to 12, 1947, and was followed by livestock exhibitions at Edmonton, Alta., Saskatoon, Sask., and Regina, Sask., the same month.

Restored after a wartime lapse was the great Canadian National exhibition at Toronto, Aug. 22 to Sept. 6, and the Royal Winter fair, also at Toronto, Nov. 18 to 26.

Only one U.S. dairy show of national calibre remained—the National Dairy Cattle congress and National Belgian Horse show, held Sept. 29 to Oct. 5, 1947, at Waterloo, Ia. Top dairy herds from many sections of the country were exhibited. It was also the year's largest showing of Belgian draught horses.

The Perth show and sale in Scotland in February continued as the largest in Britain since the cessation of the century-old Royal Show of England and the Highland of Scotland in 1939. Perth had become distinguished for its exhibitions of purebred Aberdeen-Angus and Shorthorn cattle.

South America's foremost livestock show, the long-established and widely famed Palermo in Buenos Aires, Arg., was held in Aug. 1947. It was reputed to be the world's largest show of Shorthorn cattle and featured to a lesser extent Hereford and Aberdeen-Angus cattle as well as two breeds of dairy cattle—Holstein-Friesians and Guernseys. (W. E. O.)

**Dogs.**—All activities centring around dogs prospered in 1947, especially the showing of purebred animals, of which 112 distinct breeds were now recognized officially.

Bench shows based on type conformation numbered 484 championship or point events; there were also 532 informal or match shows. Obedience trials granting training degrees numbered 197 with 19 additional tracking tests. All these figures were new records, established under the rules supervision of the American Kennel club, New York city.

The Welsh terrier female Champion Twin Ponds Belle led in wins of best-in-show all breeds. Again the largest show was New York city's Westminster Kennel club's, with 2,121 dogs present, won by the boxer, Champion Warlord of Mazelaine. Largest outdoor show, and second largest of all types, was the Morris and Essex, with 2,010 dogs. Third, and largest all-time Pacific coast show, was at Long Beach, Calif., with 1,854 entries.

Approximately 1,500 field trials for various breeds were held during 1947. National springer spaniel field champion was the liver and white Russett of Middlefield; in retrievers (all breeds), the black Labrador, Bracken's Sweep. Major bird dog win was the National Bird Dog championship, at Grand Junction, Tenn., by the pointer Saturn. Approximately 170 beagle championship field trials were held, but no national winner was selected. (W. Ju.)

## Siam (Thailand).

A kingdom of southern Asia between Burma and French Indo-China, extending southward into the Malay peninsula. Area: 198,247 sq.mi.; pop. (census 1937): 14,464,489, (est. March 1940) 15,718,000. Chief towns (pop. 1937): Bangkok (cap. 681,214); Chiengmai (544,001); Khonkaen (473,475); Chiengrai (443,476). Language: Siamese; religion: Buddhism. Ruler: King Phumiphon Aduldet; prime minister: Luang Pibul Songgram.

**History.**—On Jan. 6, 1947, an agreement was signed establishing a commission of six to adjudicate British commonwealth war damage claims against Siam. The commission consisted of one delegate each from Britain, Australia and India, and three from Siam. On May 9 it was announced that Great Britain and Siam had exchanged notes confirming and completing the peace agreement of 1946. These notes dealt with questions of enemy and Allied property and stated that Siam was to hold all Japanese and other enemy property in its territory at the disposal of the Allies, and that it would restore property, rights and interests of those countries with which it had been at war. Agreement was reached in October on the sum of £1,250,000 to be paid as compensation for losses to British commonwealth tin-mining interests during World War II.

The foreign minister Nai Direk Chainam resigned on Feb. 5, and in face of persistent criticism and charges of incompetence from the opposition, the cabinet resigned on May 28. The prime minister, Thawan Thamrong Nawasawat, formed a new cabinet which took office on June 2, and on June 6 the government received a vote of confidence. On Nov. 9 Siamese army units under Marshal Luang Pibul Songgram seized government control, ousting the Popular party. Pibul Songgram, who had been in power during the Japanese occupation, represented the "Might is Right" party; his most important change in the constitution was the setting up of an advisory council, invested with virtually all royal powers in place of a regency, to guide the 19-year-old king.

Considerable effort was made during the year to increase rice production, exports of which were estimated at about 500,000 short tons. The government inaugurated price control at the beginning of the year and, as merchants were not turning over the stocks to the government purchasing bureau, on Aug. 10 the government ordered the compulsory sale of rice stocks at the controlled price, threatening that after Aug. 18 merchants would be forced to sell at a discount of 20%. By midsummer rice was rationed in 22 of the provinces and there were local shortages.

The development of Malayan nationalist sentiment in the four southern provinces caused some concern in Bangkok. The British and United States legations in Bangkok were elevated to the status of embassies and the Siamese legations in London and Washington were similarly elevated. Diplomatic relations with the U.S.S.R. were resumed on Jan. 5. Siam joined the sterling group on Sept. 17. (J. Ra.)

**Education.**—In 1938–39: government schools 429, scholars 61,297; local public and municipal schools 11,072; scholars 1,484,483; universities 2, students (1937) 11,525.

**Banking and Finance.**—(1942) revenue $77,650,000; expenditure $95,800,000; expenditure, capital (est. 1941) $20,700,000; public debt (March 31, 1940) $25,500,000; notes in circulation (July 31, 1941) $96,000,000; reserves (July 31, 1941), gold $35,850,000; foreign assets (July 31, 1941) $56,100,000; exchange rate (average 1940) 1 baht = 35.15 U.S. cents; (Sept. 1941) 1 baht = 36.97 U.S. cents.

**Trade and Communication.**—Trade with Great Britain (8 months 1947): imports £946,091; exports, £237,935. Foreign trade 1940–41 (merchandise): imports $60,200,000; exports $95,000,000. Communications: roads, state highways completed (1938) 1,815 mi.; railways open to traffic (1940) 1,925 mi.; airways, length of route opened (1940) 536 mi.; motor vehicles licensed (1937–38) 11,439; wireless receiving set licences (1938) 29,834.

**Agriculture and Mineral Production.**—Production (in short tons): rice (1946) 4,045,000; rubber (1946–47) 45,950; tin ore, metal content (export 1940) 19,470; tobacco (1938–39) 9,240; cotton ginned (1940–41) 2,640; maize (1938–39) 6,160.

**Sierra Leone:** *see* British West Africa.

## Silk.

The problem of whether silk would return as one of the substantial textile fibres of the world was undecided in 1947.

The Supreme Commander for the Allied Powers (S.C.A.P.) announced on Dec. 15 that effective Jan. 1, 1948, the U.S. Commercial company, the government agency previously handling the sale of raw silk from the world's largest source, Japan, would be liquidated and the sale handled directly by a New York selling office of S.C.A.P. Concurrently, an announcement was made of raw silk prices effective for the entire year of 1948, representing a decrease of 40% from those prevailing during 1947.

Japanese output of raw silk in 1947 was given as 110,376 bales, or 14,700,000 lb., of which 17,273 bales, or 2,300,000 lb., were exported. The consuming markets were:

| | Bales | Thousands of pounds |
|---|---|---|
| United States | 4,094 | 544.5 |
| Great Britain | 7,260 | 965.6 |
| Australia | 2,654 | 353.0 |
| India | 3,000 | 399.0 |
| Egypt | 50 | 7.0 |
| New Zealand | 215 | 28.6 |

In 1940, the last full prewar year, the U.S. used 35,800,000 lb. of raw silk, or approximately 270,000 bales.

To counteract the relatively poor demand for raw silk, the U.S. military authorities in 1947 started a move toward weaving the silk in Japan and exporting the fabric. During the year, a large quantity of habutai, a native type of thin silk fabric popularly termed "China silk" before World War II, was shipped to the U.S. for use primarily in printed scarfs. So great was the demand that at the close of the year, orders for 7,000,000 yd. had been taken for shipment in the spring of 1948. In addition to the habutai, the agency also offered silk crepes and taffetas, and showed samples of silk brocades, both plain and interspersed with silver and gold threads. A special exhibit in New York, shown by the chief of textile consumer goods in the Economic Scientific section of S.C.A.P. in Tokyo, offered the brocades, embroidered habutai and crepes, as well as hand-printed dress fabrics, at prices ranging between $1.25 and $4.00 a yard, f.o.b. Japan.

In China, once the second largest supplier of raw silk, continued effort was made to encourage the silk industry, but with relatively little effect on world markets. In fact, it was announced at the close of the year that the Chinese government was drafting measures to barter Chinese raw silk for foreign rayon, the latter to be manufactured into finished products for re-export.

Italy's silk industry during 1947 was not expected to exceed one-third of prewar figures. Total exports of raw silk from Italy were estimated to be 700,000 kilos for the year (approximately 7,000 bales). In the first nine months, the total sales of raw silk were 511,500 kilos, of which 454,000 kilos were exported. As in Japan, efforts were being directed toward using the raw silk on domestic looms and selling the fabric, both domestically and abroad.

Production of silk fabrics in the U.S., Great Britain and France continued at a slow pace. In the U.S., the total 1947 production was estimated to be not more than 10,000,000 linear yards, including all silk and silk mixtures. In 1946, the total had been 9,300,000 linear yards. In 1939, the total production had been 68,700,000 linear yards, and in 1937, it had been 142,-00,000 sq.yd.

In Frànce, traditional home of the fine silk fabric, a demand existed, but manufacturers in Lyons contended that it was impossible to observe government restrictions on the use of raw silk bought with U.S. dollars and meet buyers' price limits. For every dollar's worth of raw silk purchased, the French government was said to insist that two dollars' worth of fabric be exported to offset the dollar expenditures, with the result that foreign buyers would not pay the prices asked for the fabric. Hope was expressed, at the close of 1947, that the coming year would see some lifting of these restrictions, as well as a lower price on Japanese raw silk, in order to permit development of the home market on the continent for silk fabrics. This market was thought to be more receptive to relatively high-priced fabrics than the U.S., where production of moderately priced synthetic fabrics dictated the price level. While the amounts of fabric consumed in Europe would be relatively low, compared with consumption in the U.S., the scarcity of raw materials, including rayon, would give silk a better chance there than in the more plentifully supplied American market. (*See* also Rayon and Other Synthetic Fibres; Textile Industry.)

(I. L. Bl.)

## Silver.

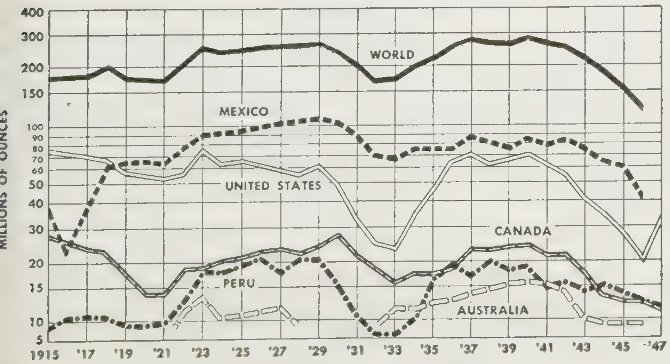
The silver output of the leading producing countries and the estimated world totals are shown in Table I.

The output of the U.S.S.R. was the only really important one that was not known, but that country, along with the large number of minor producers, accounts for about 15% of the total.

**United States.**—The salient features of the silver industry in the United States are shown in Table II.

Mine output dropped from 29,024,197 oz. in 1945 to 22,914,604 oz. in 1946, 70% less than the 1940 high. The 1946 drop was largely the result of strikes in base metal smelters which were large producers of silver.

The production rate improved in 1947 to 27,781,594 oz. through October, which was equivalent to a rate of 33,400,000 oz., and approached the 1944 level. All of the monthly production totals were more than the 1945 average rate, and three of them exceeded the 1944 rate.



SILVER PRODUCTION of the major producing countries and of the world, as compiled by *The Mineral Industry*

Table I.—*World Silver Production, 1941-46*

(In millions of fine ounces)

| | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|
| United States . . | 71.08 | 55.86 | 40.79 | 35.65 | 29.05 | 12.10 |
| Canada . . . . | 21.75 | 20.70 | 17.35 | 13.63 | 12.94 | 12.54 |
| Newfoundland. . | 1.66 | 1.11 | 1.26 | 1.16 | 1.08 | 1.11 |
| Mexico. . . . . | 78.36 | 84.86 | 76.63 | 65.46 | 61.10 | 43.26 |
| Honduras. . . . | 3.63 | 3.48 | 3.16 | 3.12 | 3.00 | 2.68 |
| Argentina. . . . | 2.92 | 2.84 | ? | ? | ? | ? |
| Bolivia . . . . . | 7.35 | 8.12 | 7.30 | 6.80 | 6.68 | 6.11 |
| Chile. . . . . . | 1.24 | 1.32 | 1.09 | 1.09 | 1.03 | 0.53 |
| Peru . . . . . . | 15.12 | 16.04 | 14.66 | 15.83 | 13.00 | 12.33 |
| Belgian Congo. . | 3.47 | 3.96 | 3.11 | 2.61 | 4.14 | 5.05 |
| South Africa. . . | 1.48 | 1.48 | 1.33 | 1.21 | 1.24 | 1.20 |
| Australia . . . . | 15.41 | 14.24 | 10.33 | 9.37 | 8.08 | 9.07 |
| Total. . . . . | 262 | 250 | 217 | 186 | 157 | 129 |

Table II.—*Silver Industry in the United States, 1942-46*

(In thousands of fine ounces or of dollars)

| | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|
| Production . . . . . . . . . | 54,091 | 41,461 | 34,474 | 29,024 | 22,914 |
| Imports. . . . . . . . . . . | $41,103 | $27,903 | $23,373 | $27,278 | $57,578 |
| Exports. . . . . . . . . . . | $1,999 | $30,687 | $126,915 | $90,937 | $36,455 |
| Industrial use . . . . . . . | 131,419 | 162,113 | 176,289 | 184,661 | 126,300 |
| Secondary recovery . . . . . | 30,021 | 44,113 | 56,189 | 58,361 | 36,647 |
| Net consumption . . . . . . . | 101,399 | 118,000 | 120,100 | 126,300 | 87,000 |

**Canada.**—Primary production declined from 12,942,906 oz. in 1945 to 12,544,100 oz. in 1946, only 3% less than in 1945, but 47% less than the 1940 high. The decline continued in 1947, the output of the first three-quarters being 8,594,371 oz., 13% less than the same period of 1946. (*See* also Mineral and Metal Production and Prices.) (G. A. Ro.)

**Singapore:** *see* Malayan Union and Singapore.

## Sinkiang

(Chinese Turkestan). Largest and farthest inland province of China, bounded north by the Mongolian republic; east by China; south by Tibet and India; west by Afghanistan and by the Tajik, Kirghiz and Kazakh republics of the U.S.S.R. Area (1939): 705,952 sq.mi.; pop. (est.): 3,870,954. Capital: Urumchi (Tihwa) (est. pop. 50,000). The two largest towns, Kashgar and Yarkand, with estimated populations of 80,000 and 75,000, are in the south; 84% of the total population is on the western side of the province, adjacent to the U.S.S.R. and separated from China by the major desert expanses. Chinese estimates are that 90% of the population is Turkish-speaking, the settled majority being Uighurs and the nomadic minorities Kazakhs and Kirghiz; the Chinese comprise about 5%, divided between Moslems and non-Moslems, and the remaining 5% include Mongols, Manchus, Tajiks and still smaller minorities. The prevailing religion is Islam; with Lama Buddhism among the Mongols and nominal Confucianism and Taoism among the non-Moslem Chinese. Governor (appointed June 1947): Masud Sabri.

**History.**—Events in Sinkiang in 1947 were marked by contending Chinese and Russian influences and by rivalry between conservative and radical nationalist factions among the non-Chinese subject peoples. The chief issue was between those who were prepared to be content with non-Chinese officials appointed and supervised by the higher Chinese authorities, and those who still demanded that the Chinese accept officials nominated by various self-constituted and pro-Russian bodies among the subject peoples.

In Feb. 1947 there were demonstrations in Tihwa (Urumchi), capital of the province, demanding unity (between the subdivisions of the province), peace (an end to civil war) and equality (between the subject peoples and the Chinese). Martial law was declared and the province became divided between the southern oases dominated by Chinese garrisons and the three northwestern districts of Ining (Ili), T'ach'eng (Chuguchak) and Aherht'ai (Altai), all dominated by insurgents but reflecting different degrees of pro-Russian sentiment and organization, and some degree of friction between settled communities and pastoral nomads.

In May a meeting of people's representatives was scheduled, under Chinese auspices, to implement agreements made in 1946 outlining a compromise structure of government granting increased but not decisive representation to the subject peoples. The more radical and pro-Russian groups, finding themselves in a minority, withdrew. A leader of the nomad Kazakhs, named Usman, then split off from the other insurgent leaders and began marauding operations along the Altai frontier between Sinkiang and Outer Mongolia (Mongolian People's republic), which led to clashes in the summer months between Chinese and Mongol troops at a point called Peitashan (Baitik Bogda).

In June the Chinese appointed as chairman (governor) of the province an Uighur, representative of the largest population group, named Masud Sabri (Masaowute), with Gen. Chang Chih-chung as resident representative of the Chinese higher authority. In July and August there were risings at Turfan and Kashgar, the two largest oases, which were put down. The situation then remained relatively unchanged, but uneasy, until the end of the year, with the insurgents, under a number of Russian-educated leaders, in command of the Ining region, under a regime which intermittently called itself the Eastern Turkestan republic. (O. Le.)

**Skating:** *see* Ice Skating.

**Skiing.** Competitors from Norway, Switzerland and Canada generally dominated United States ski championships in 1947.

Norwegians placed one-two in the national jumping event at Ishpeming, Mich. Arnholdt Kongsgaard won the jumping title with leaps of 239 ft. and 240 ft. His countryman, Ragnar Baklid, was second. Karl Molitor, of Switzerland, scored a triple in the national downhill, slalom and combined at Ogden, Utah.

In other men's national competition, Wendell Broomhall, 27-year-old Rumford, Me., milkman, won the cross-country title and Ralph Townsend, a student at the University of New Hampshire (Durham), captured the national classic combined cross-country and jump.

Rhoda Wurtele, Montreal, Ont., won the national women's downhill and combined championships but gave way to Olivia Ausoni of Switzerland in the national slalom. Eddy Rominger, also of Switzerland, captured the national men's slalom.

As for distance and cross-country skiing, Sweden dominated. Nils Karlsson of Sweden won the European 31-mi. marathon and 11-mi. cross-country events. Sweden's Sven Israelsson won the combined jump and cross-country in the Holmenkollen, Norway, meet. Laurie Huuke, 42-year-old Finn, from Sudsbury, Ont., won the Canadian cross-country.

In sectional jumping events, Arthur Devlin of Lake Placid, N.Y., dominated by annexing the Torger Tokle memorial and the Norge jumps. He set a record leap of 203 ft. at the 41st Norge event—at Fox River Grove, Ill. Erik Lindstrom, four-time Swedish jumping champion, won the Beloit, Wis., meet, while Vincent Kasky of Greenfield, Mass., gained the Roosevelt title.

Lindstrom also won the central U.S. title at St. Paul, Minn.

Led by the Wurtele twins, Canada overshadowed the United States in women's team competition. Rhona Wurtele won the eastern amateur downhill and combined, while her sister Rhoda captured the slalom. Georgette Thiolliere won the European women's title and went on to dominate the Harriman cup trials at Sun Valley, Ida.

As a climax of national ski competition, the U.S. Olympic team was named. Members were: Ralph and Walter Bietila, Sverre Fredheim, Joe Perrault, Arthur Devlin and Gordon Wren. (M. P. W.)

**Skin Diseases:** *see* Dermatology.

**Slate.** Sales of the various forms of slate in the United States were as follows, in thousands of short tons:

| | 1946 | 1945 | 1944 | 1943 | 1942 |
|---|---|---|---|---|---|
| Roofing | 56.2 | 38.2 | 32.8 | 35.4 | 71.4 |
| Millstock | 12.2 | 11.5 | 12.4 | 16.0 | 18.7 |
| Flagstones | 27.9 | 20.0 | 15.8 | 22.0 | 16.9 |
| Total | 96.3 | 69.7 | 61.0 | 73.3 | 107.0 |
| Granules | 513.8 | 374.8 | 309.2 | 292.3 | 356.5 |
| Flour | 149.7 | 107.4 | 107.7 | 103.2 | 127.2 |
| Total | 663.5 | 482.2 | 416.9 | 395.5 | 483.7 |
| Grand total | 759.8 | 551.9 | 477.9 | 468.8 | 590.7 |

The postwar building boom enabled the slate industry to make a new record high in 1946, for the first time after 1924. (G. A. Ro.)

**Slovakia:** *see* Czechoslovakia.

**Smith, Walter Bedell** (1895– ), U.S. Army officer, was born on Oct. 5 in Indianapolis, Ind. After the U.S. entered World War I, he joined the army. He served overseas in 1918 and later returned to Washington for duty in military intelligence. Smith was with the war department general staff (1939–42), was promoted to the rank of brigadier general in 1942 and was made U.S. secretary of the combined chiefs of staff.

During the African invasion, Smith became chief of staff to Gen. Dwight D. Eisenhower and remained with him throughout World War II. In Oct. 1945, he was made a major general (permanent).

On Feb. 14, 1946, Pres. Harry S. Truman named him ambassador to the Soviet Union. In an effort to improve soviet-U.S. relations, Smith urged Foreign Minister Vyacheslav Molotov to give consideration to nine U.S. proposals for cultural exchanges with Russia; the Russians rejected one proposal but failed to answer the eight others.

Smith formally protested against a soviet article criticizing Pres. Truman, declaring Sept. 23, 1947, that the article was a "personal insult" to Truman. Molotov, however, denied that his government had any responsibility for articles appearing in the Russian press, thus rejecting the protest.

**Smith College.** At Smith college for women in Northampton, Mass., a new curriculum, instituting a unified education with stress upon general culture, went into effect in 1947 with the class of 1951. Interdepartmental courses in the social and natural sciences were established and one in the humanities is to follow in 1948.

During 1947 the college had four groups of students studying in other countries: one in France with 34 students, one in Geneva, Switz., with 37 students, one in Mexico with 14 students and one in Italy with 12 students. The exchange of students with the University of Toronto continued. The intensive method of instruction is carried on generally in the language departments.

The graduate school had an enrolment of 147 students. The Smith college school for social work held its ten-week summer session on the campus with an enrolment of 148 students. The Smith college genetics experiment station, under the direction of Dr. Albert Francis Blakeslee, continued in its sixth year. (For statistics of endowment, enrolment, faculty, library volumes, etc., *see* Universities and Colleges.) (E. Low.)

## Smithsonian Institution.

This institution was founded in Washington, D.C., in 1846 through the bequest of James Smithson, an English scientist, "for the increase and diffusion of knowledge among men." The governing body is the board of regents, comprising the vice-president of the United States, the chief justice, three senators, three representatives and six eminent private citizens. The executive officer is the secretary. Dr. Alexander Wetmore was the secretary in 1947. The institution administers ten government bureaus—the National museum, the National Collection of Fine Arts, the Bureau of American Ethnology, the International Exchange service, the National Zoological park, the Astrophysical observatory, the Freer Gallery of Art, the National Gallery of Art (with separate board of trustees), the National Air museum and the Canal Zone biological area. The purposes of the institution are carried out by research, exploration and publication.

With the beginning of the institution's second century came a gradual resumption of its normal activities in research and exploration that during World War II had been largely suspended. The year saw the newly created National Air museum still in the formative stages. Visitors to the Smithsonian group of buildings totalled 2,353,377 for the fiscal year 1947.

The National museum accessioned approximately 757,000 new specimens during 1947—about twice as many as during the previous year—many of these resulting from Smithsonian field expeditions. Anthropological field parties worked in the West Indies, in Guatemala and in the Missouri basin; biological expeditions visited India, Bikini, St. Vincent in the British West Indies, Colombia, Guatemala and Panamá; geological field work was entirely in the United States—in Arkansas, Oklahoma, Texas, New Mexico, Nevada, Utah, Wyoming, Virginia and Tennessee.

The Bureau of American Ethnology conducted an archaeological survey, in co-operation with the National Geographic society, of the Pacific coast of the state of Chiapas, Mexico, locating one site that might prove to contain the earliest remains yet known from southern Mexico and Central America. Another bureau project was a survey of the prehistoric settlement patterns of the Virú valley in northern Peru, as a part of a co-operative study of this area. The Institute of Social Anthropology continued its co-operative work in teaching and field work in Colombia, Mexico and Peru. The river basin surveys, organized as a unit of the bureau in 1945 to locate the archaeological sites that would be flooded by construction of dams by the bureau of reclamation and the army engineers, conducted field work in the Missouri basin, Georgia, Virginia-North Carolina, Texas, California and the Columbia-Snake basin.

The International Exchange service handled during 1947 a total of 703,798 packages of scientific, governmental and literary publications, weighing 773,975 lb. A large proportion of the war accumulation was shipped out during the year, and current consignments were forwarded again to all countries except Rumania.

The Astrophysical observatory continued its intensive study of the solar radiation, establishing a new observing station in Miami, Fla. Measurements of sun and sky radiation at Camp Lee, Va., were continued in connection with war department studies of fabric deterioration. The observatory's division of radiation and organisms concentrated its research activities on studies of photosynthesis and of plant growth and development as influenced by light.

The Smithsonian library accessioned 9,644 volumes, bringing its total holdings to 933,997. The institution issued during the fiscal year 1947 a total of 69 publications in its various series; worthy of special mention are H. Helen and Frances L. Clayton's *World Weather Records, 1931–1940,* Robert Ridgway and Herbert Friedmann's *Birds of North and Middle America* (part 10), Elmer D. Merrill and E. H. Walker's *A Botanical Bibliography of the Islands of the Pacific* and a scholarly *Descriptive and Illustrative Catalog of Chinese Bronzes,* compiled by the staff of the Freer Gallery of Art. (A. Wt.)

## Snyder, John Wesley

(1896– ), U.S. government official, was born June 21 at Jonesboro, Ark. He attended Vanderbilt university, Nashville, Tenn., 1914–15, and in 1917 he joined the army and was promoted to artillery captain. While in France, he met Capt. Harry S. Truman and after the war the two became friends. Following the armistice, Snyder entered the banking profession. Snyder, who held several important posts in government agencies from 1930 to 1943, left the government in early 1943 to return to private banking, but was called back by Pres. Truman in April 1945 to become federal loan administrator. Three months later, he was named director of the Office of War Mobilization and Reconversion and in June 1946, he was appointed secretary of the treasury.

In 1947, Snyder opposed the Knutson tax-reduction proposals, asserting that federal spending could not be lowered enough to permit a "proper" payment on the public debt. His views on the tax question were clarified Oct. 29 when he declared that the administration should not contemplate a tax-reduction program until congress decided how much it would spend under the Marshall plan for European recovery. Although there were earlier reports that Snyder was not in agreement with the Marshall plan, he hastened to deny this publicly June 25.

On Nov. 13, Snyder was appointed by Truman to the National Security Resources board.

## Soap, Perfumery and Cosmetics.

The best estimates within the industry were that total sales of cosmetics and perfumes in the United States during 1947 would run 8%–10% less than the sales during 1946 of approximately $700,000,000. Any such figure would still be far more than the pre-World War II level. However, the producers of men's toiletries, which enjoyed a spectacular increase in volume during the war years, found their business, which had levelled off in 1946, declining in 1947. On the other hand, certain new specialties enjoyed phenomenal growth in 1947. Notable among these were such hair preparations as those for home permanent waving, which it was estimated would total $50,000,000–$60,000,000 for the year, or at least double 1946. Hence, while the over-all decline might prove to be only 8%–10%, the decline in standard, established lines would be greater.

It is especially noteworthy that in a year of generally rising and inflationary prices, producers' prices of such standard items as face powder, lipstick, creams and manicure preparations were in 1947 at the same level that they were 15 years before. No better testimony to the intensely competitive character of these industries could be given; especially since during the same era costs had not stood still. The situation had, in short, nearly arrived at the economists' undesirable and incommensurable goal, where the only profit left was the wages of labour. Despite the fact that sales in 1947 nearly doubled those of 1938, conditions within the industries during 1947 were far from healthy or happy.

Despite continuing shortages and high prices of fats and oils there were no consumer shortages of soaps during 1947, as conditions at the close of 1946 had indicated there might be. Deliveries of soaps other than liquids were reported for the first nine months at more than 2,000,000,000 lb., a figure somewhat higher than for the corresponding period in 1946, although still less than for any other comparable period back to 1938. The fact that other detergents continued to make progress in consumer markets probably had a restraining influence on the price structure.

In France the perfumery industry made little progress. Hopes of invading the American market did not materialize to any serious extent. All materials, domestic as well as imported, continued scarce and at staggeringly high price levels. Natural musk, for example, sold at 11 times the prewar price. By April 1947, 600 of the 2,400 French perfume manufacturers had gone out of business and it was expected that another 600 would shut down by the end of the year.

In Great Britain the mid-year financial crisis combined with already excessive production costs to constrict still further the drive for export trade which had been steadily dwindling despite the fact that the government made an extra inducement for export sales in the form of proportionate additional domestic (*i.e.*, profitable) sales quotas. (H. T.)

**Soapstone:** *see* TALC.

## Soccer.

The Ponta Delgada team of Fall River, Mass., returned soccer supremacy to the east with a double as National Open and Amateur Cup champions. In league competition, the Swedish-Americans of Chicago topped the National circuit in the major division, while Philadelphia won the American league title. The Pittsburgh, Pa., Indians won the North American professional league crown.

The National Junior cup was annexed by the Heidelberg, Pa., Soccer club. Magyars A. C. won in the Los Angeles city league; the Vikings captured the San Francisco cup, and the American A. C. Teutonia of San Francisco won the California state championship.

The English cup went to the Charlton Athletics, while the Liverpool Football club won the English league. The Glasgow Rangers captured the Scottish cup, and the French title went to Lille. (M. P. W.)

## Socialism.

Socialists throughout the world in 1947 continued their work for democratic socialism, as an alternative to capitalism, on the one hand, and to soviet communism, on the other.

The most significant advances toward democratic socialism during the year were made in Great Britain. On Jan. 1, 1947, the coal mines of Britain were transferred to the National Coal board, a public corporation. During the year the government nationalized cable and wireless services and passed acts for the public ownership of the railroads and other forms of inland transportation, and for the public management of the entire electrical power system and of atomic energy activities. It extended controls over the planning of cities, towns, and residential, industrial and agricultural areas, and over the direction of labour to essential industries. It enacted comprehensive social insurance and health service acts, expanded the British educational system and created a ministry of economic affairs, headed by Sir Stafford Cripps, with a view to long-term economy planning.

In Australia during the year, the federal parliament, controlled by labour, passed legislation for the taking over of private trading banks.

In Norway, the socialistic Labour government, as a result of legislation passed in 1946, greatly expanded public operations in the iron, steel, power and aluminum industries, began the construction of whole towns in the devastated Finnmark area, and co-operated with other Scandinavian countries in the formation of a Scandinavian air service.

In Denmark, the Social Democratic party in the Oct. 18 election increased its representation in the lower chamber from 48 to 57 (out of 149), while the Communists lost half of their 18 seats. Folowing the elections, Hans Hedtoft, Social Democrat, was appointed premier, and a Social Democratic cabinet was formed, which for the first time after 1934 included a woman member.

In Sweden, in Feb. 1947 a commission of the Social Democratic government recommended the nationalization of the wholesale trade in petroleum and gasoline through a public corporation in which the state would contribute at least 51% of the shares, the consumers subscribing to the balance.

Among the other European democracies, the socialist movement in France occupied during the year a most strategic position. On Jan. 16, 1947, Vincent Auriol, Socialist, was elected president of France and several days later Paul Ramadier, Socialist, was confirmed as premier, succeeding Léon Blum. Ramadier constituted a coalition cabinet of Socialists, Communists and members of other republican parties, but on May 7 dropped from the cabinet the Communist ministers who disagreed with the government's wage-price policy and were active in fomenting strikes among the workers. In the ensuing Socialist congress in August, the party's executive veered to the left. It urged, among other things, that the Ramadier government adopt a system of state control of distribution and compulsory production of essential commodities as a means of stopping inflation.

Ramadier resigned after the municipal elections of Oct. 19 and 26, and Léon Blum was called upon to form a new government. Both Communists and De Gaullists voted against his proposed cabinet, however, and the motion to confirm was defeated by a vote of 300 to 277. The next day Robert Schuman, Popular Republican leader, was elected premier and formed a cabinet containing Socialists, Popular Republicans and other democratic groups.

During the latter part of the year, Socialists within the government sought to prevent Communist-directed strikes from causing the collapse of the French economy and sowing the seeds of civil war. Within the General Confederation of Labour, Socialists likewise strove to wrest the leadership of the trade unions away from the Communists. The Socialist forces in the confederation in late December finally split from this organization, and under the leadership of Léon Jouhaux, secretary-general of the C.G.T. for more than a generation, formed a non-Communist federation.

In Belgium, during late 1946 and early 1947, Camille Huysmans, Socialist, presided over a coalition cabinet composed of Liberals, Socialists and Communists, a coalition of the so-called "left" parties. In March, the Communists brought about the fall of the Huysmans' government and Paul-Henri Spaak, leading Socialist, succeeded in forming a government of Socialists and Catholics, the first such coalition after the Poullet-Vandervelde government of 1925–26. The new government, which excluded Communists from its membership and which commanded more than three-fourths of the seats of both houses, envisaged placing under state control the *Banque Nationale* and the *Societé Nationale des Crédits à l'Industrie*. It likewise favoured an advanced social policy, including workers' participation in industrial organization.

The coalition government of Catholics, Labourites and nonparty members continued in the adjoining country of the Netherlands during the year.

The fight between Communists and democratic Socialists played a large role throughout the year in the political life of Italy, which the Russian Communists hoped might become a European outpost of communist-dominated countries.

On Jan. 11, 1947, Giuseppe Saragat, Socialist president of the constituent assembly, split away from the Socialist party on the ground that it had become a mere adjunct of the Communist party. Following the split, Saragat and 52 of the 116 Socialist deputies, among others, formed the Italian Socialist Workers party. The division in Socialist ranks precipitated the resignation of the Socialist foreign minister, Pietro Nenni, followed by the reorganization (Feb. 2) of another coalition government.

Criticism of Nenni's leadership continued throughout the year within the party. On Oct. 19, a group of left-wing Socialists, led by Ivan Matteo Lombardo, former general-secretary, maintained that the "Unity of Action Pact" between Communists and Socialists had become a "surreptitious fusion," with the result that even the internal life of the Socialist party had become sterile. Nenni (Nov. 21) was defeated in the central committee in his attempt to get Socialists and Communists to unite in a people's bloc for the next general election, but the final decision as to whether the Socialists should campaign alone was left to the party congress in Jan. 1948.

Communists were excluded from the cabinet by Premier Alcide de Gasperi, Christian Democrat, in his cabinet reorganization of June 1. On Dec. 15, in his fifth cabinet, De Gasperi appointed Saragat and two other right-wing Socialist cabinet members, while continuing to exclude the followers of Nenni and of Palmiro Togliatti, Communist leader.

In Germany, the socialist movement during the year was greatly influenced by the type of control of the occupying forces. In the Russian zone, Socialists continued to be subjected to great pressure to join with the Communists in the Socialist Unity party, and were forbidden to form a Social Democratic party.

In the three other zones, the Social Democratic party, led by Kurt Schumacher and claiming a membership of 850,000 played a significant part in the Germany economy. Outside of the Russian zone, the Social Democrats consistently refused to merge their forces with the Communists and vigorously denounced the Communist suppression of civil rights in the soviet zone.

In Austria, the Social Democratic party continued as the second largest party (with 76 deputies as against 84 for the People's party and 5 for the Communists). Dr. Karl Renner, Socialist, continued as president, while several Socialists served as cabinet members. Both Socialist and People's party refused to give the Communists a larger representation in the government, and opposed many policies of the Russian occupying forces.

In Czechoslovakia, one wing of the Social Democrats during the year objected strongly to the action of the president of the party, former Premier Zdeněk Fierlinger, in concluding a Socialist-Communist unity pact. Their protest led on Nov. 16 at the party congress to the defeat of Fierlinger as party president, and to the election of Bohumil Lauschman, minister of industry, by a vote of 280 to 182.

In other countries of eastern Europe, the Socialists had, under Russian pressure, largely lost their independence of movement; in some countries they had been utterly suppressed. In Poland, they were forced into a bloc of "left-wing parties," which, in January, gained an "overwhelming victory" in an election which western countries declared was far from "free and unfettered." The general secretary of the Socialist party, Joseph Cyrankiewicz, became premier during the year in a government dominated by Communists. The party at its December congress, however, refused the Communist request to merge with them. A considerable number of Socialists belonged to a party to which the government refused legal standing. Many of its members and some of the legal party were arrested for "purge" trials. In Rumania, the Communist government in late November began trial against Titel Petrescu and other leaders of the Social Democratic party on the charge of subversive activity—that of distributing party leaflets without having them censored by the government.

In Asia, during the year, Socialists were most active in Japan and India. In Japan, in the April 25 elections for members of the lower chamber of the diet, the Social Democrats emerged as the largest single party, electing 143 out of 466 members and securing 26.2% of the popular vote. Petsu Katayama, Socialist leader, was appointed premier. During the year Katayama's coalition government presented bills, among others, for the state control of the coal mines and for the breaking up of large Japanese industrial and business concerns.

In India, Prime Minister Jawaharlal Nehru, in mid-December, declared that in the future in the Indian union there would be a large measure of socialism in certain basic and key industries. Private enterprise, he maintained, would be continued and perhaps encouraged, but the main tendency would be toward state ownership and control.

On the American continent the Socialist movement, while exerting a considerable educational force, remained, in most countries, politically weak. Socialist party representatives continued during the year their conversations regarding unity with representatives of the Social Democratic federation. On Oct. 15, the S.D.F., however, rejected the Socialist party request for immediate unity though declaring that it believed that ultimate unity between the Social Democratic federation and the Socialist party was desirable. It recommended the continuance of joint relations and joint undertakings "on a nonelectoral nature for the spreading of the philosophy of social democracy," and, outside of New York, it declared, joint senatorial and congressional campaigns should be undertaken where practicable, "where the voters have no true choice between liberal and reactionary labour and antilabour candidates." In New York state the S.D.F. believed, however, that it should continue to work through the Liberal party. The Socialist party during the year, while continuing to work for a new democratic political alignment, believed that it would best serve democracy and socialism by presenting, with such allies as it might win, its own presidential ticket. At the end of the year it rejected support of the third party of Henry A. Wallace because it believed that movement so dominated by Communists as to jeopardize the rise of a new democratic mass party and a desirable political realignment. It supported the Marshall plan provided that the program should not impose U.S. capitalism or imperialism on Europe.

The Co-operative Commonwealth federation (C.C.F.) of Canada, with its control of Saskatchewan and its 28 representatives in the Canadian parliament, continued vigorous activity during the year, and was the host at Toronto in September at a conference of British Commonwealth Labour parties. In South America, little in the way of an organized Socialist movement was in evidence, although the advocates of socialism were prominent in the governments of Peru and Venezuela.

In the international field, several meetings of Socialists were held in Europe with a view to exploring the possibilities of international co-operation. The final meeting of the year was held in Antwerp, Belgium, in late November and early December. It was attended by about 100 delegates and observers from about a score of countries. Leading French and British Socialists were too occupied at home to attend, and the conference was disappointing to Socialist hopes in its discussions and results.

As many delegates came from eastern European countries in which Socialists were under pressure to collaborate with Communist groups, many of the resolutions passed were of a general nature. The conference, however, approved resolutions appealing for Socialist unity, denouncing Franco Spain, international blocs and foreign intervention in Greece, and mildly approving the Marshall plan and other plans for reconstruction. It admitted representatives of the German Social Democracy as delegates, denied admission to Saragat's party, and classified those sent by the U.S. Socialist party and the Social Democratic federation as observers. Finally, it created a committee for the International Socialist conference, dubbed "Comisco," to distribute information and to call a new conference in the spring of 1948 in Vienna or Rome. (*See* also COMMUNISM; POLITICAL PARTIES, BRITISH.) (H. W. L.; N. T.)

**Socialist Soviet Republics:** *see* UNION OF SOVIET SOCIALIST REPUBLICS.

## Social Security.

The task of rebuilding social-security programs went forward during 1947 in the war-torn countries, while other countries in both hemispheres strengthened or extended existing programs or adopted new measures for protecting wage earners and their families against loss of income through the economic hazards of sickness, physical disability, unemployment, old age or death of the breadwinner. At its fourth session, held early in 1947, the Economic and Social Council of the United Nations initiated specific plans for carrying out its responsibilities.

**United States.**—No comprehensive changes were made in the Social Security act during 1947, though several amendments were enacted. One extended through June 1950 the temporary increases in federal grants to states for the three public-assistance programs, originally authorized for the period Oct. 1946 through Dec. 1947. Another continued the contribution rates under old-age and survivors insurance at 1% each for employers and employees during 1948 and 1949, and provided for their increase to $1\frac{1}{2}$% in 1950 and to 2% in 1952.

On Jan. 1, survivor benefits based on combined earnings from both railroad employment and employment covered under the Social Security act became payable. This co-ordination of survivor benefits, authorized by an amendment to the Railroad Retirement act in 1946, substantially increased the protection afforded under both acts to survivors of insured workers. Benefits were also paid throughout 1947, under the 1946 amendments to the Social Security act, to survivors of veterans of World War II dying within three years of their discharge from military service. The first payments under the temporary federal program for reconversion unemployment benefits to seamen whose wartime maritime employment was considered federal employment became payable on July 8 for unemployment occurring on or after that date.

In September the senate finance committee appointed an advisory council of 17 members, representing employers, employees and the general public, to assist the committee in a comprehensive study of the Social Security act and of various proposals for its expansion.

Of the major risks to family security, only unemployment was greatly and immediately affected by the economic situation. In 1947 both production and employment were at unprecedented peacetime levels, and unemployment remained close to the "irreducible" minimum. Yet the volume of claims for unemployment benefits was heavier than would have been anticipated for an economy operating at such levels. There was probably less than the usual volume of normal unemployment caused by seasonal changes, inventory taking and the like. One of the other types of unemployment leading to relatively heavy volume of claims was the unemployment of veterans in the process of adjusting to civilian occupations and a peacetime way of life. There was also a certain amount of unemployment of persons displaced from their jobs by veterans or by younger, more efficient workers. Lastly, considerable unemployment stemmed from sporadic layoffs as one industry after another went through the process of stabilizing its production to a peacetime level and as labour disputes interrupted production and caused shortages of materials and parts that affected other industries.

By compensating part of the wage loss from involuntary unemployment, unemployment insurance tided workers and their families over the periods between jobs and helped maintain the stability of the nation's purchasing power. For other millions of persons who for one reason or another could not avail themselves of job opportunities and whose other income could not maintain them, retirement or survivor benefits, financed by the contributions of wage earners and their employers, provided small but steady monthly payments. For other groups of the population who could not qualify for insurance benefits or whose benefits were too meagre to support them and who were unable to work, public assistance was the main or supplementary source of income. The continued rise in prices during the year, moreover, forced many formerly self-supporting persons to turn to public assistance for supplementation of income.

In addition to the insurance and assistance programs for income maintenance, community health and welfare services also played a vital role in fostering economic as well as social security.

**Social Insurance and Related Programs.**—Most of the U.S. unemployment occurring during 1947 was covered by the state unemployment insurance systems, the federal system for railroad workers or the federal program of readjustment allowances for unemployed veterans. At the end of November 1,225,100 persons insured under these programs were unemployed. Of the $73,330,000 paid in benefits during November, 40% went to unemployed veterans. In Nov. 1946, 56% of the $132,136,000 expended went to veterans.

Monthly benefits under the federal old-age and survivors insurance program of the Social Security act were paid in Nov. 1947 to 1,952,000 beneficiaries, at a monthly rate of $37,712,000. Two-thirds went to retired workers and their aged wives and dependent children; the rest went to the widows, children and parents of deceased insured wage earners.

Monthly retirement, disability and survivor benefits were also paid in November to beneficiaries under the railroad retirement program (280,000) and veterans' programs (3,265,000). The number of railroad beneficiaries was about 48% greater than in Nov. 1946, largely because monthly survivor benefits became payable on Jan. 1. Retirement or disability pensions went to about 120,000 former federal employees under programs administered by the civil service commission and to about 195,000 persons protected by state and local government plans; in addition, survivors of about 35,000 persons were receiving monthly payments under the latter plans.

Aside from the disability payments mentioned, the only other government programs compensating for wage loss from disability were workmen's compensation, in effect in all states but Mississippi, and temporary disability programs in Rhode Island and California for workers covered by the state unemployment insurance law and unemployed because of sickness.

**Assistance and Welfare.**—Despite the record national income in 1947, the average worker could buy less with his earnings because of price increases. One result was a lessening of ability to contribute to the support of needy relatives. This factor, combined with less favourable employment opportunities for workers with only marginal skills, caused a significant increase in the number of applications for old-age assistance, aid to the blind and aid to dependent children, the three public-assistance programs financed jointly by the federal government and the states and localities, under the Social Security act. Additional federal funds made available in 1946 enabled states to increase individual payments and bring them more in line with the rise in living costs, and some states were able to assist needy ersons who previously could not be aided because of limited state and local funds.

In Nov. 1947, about 2,324,000 needy persons aged 65 or more were receiving old-age assistance, at an average payment of $36.91 a month. More than 1,000,000 children in almost 411,000 families were receiving aid to dependent children; the average payment was $62.64 per family and $24.60 per child. The assistance payment to the 63,500 recipients of aid to the blind in the 47 states administering programs under the Social Security act averaged $39.74. These averages, applicable to the country as a whole, masked wide differences in the amounts paid in the various states—differences which reflected both the ability of the state and counties to finance assistance and the standards prevailing in the state. Another factor in state variations was the coverage limitations on federal old-age and survivors insurance. Since coverage of the insurance program was restricted to workers in industry and commerce, the predominantly agricultural states had more assistance recipients in relation to total state population and to insurance beneficiaries than did the industrialized states.

Other needy persons who could not qualify under one of these special assistance programs were cared for by general assistance, financed without federal participation. In November general assistance payments went to 340,000 cases, at an average payment of $41.21 per case.

The aggregate amount expended in the month for assistance in all four programs from all sources—federal, state and local—was $128,700,000.

The rise in costs of goods and services also affected the adequacy of health and welfare services in the country. Among these services were the maternal and child health and child welfare services, financed by federal grants of $22,000,000 under the Social Security act. Of this amount, certain portions of which must be matched by states, $11,000,000 was authorized for maternal and child health services, $7,500,000 for services for crippled children and $3,500,000 for child welfare services. (*See* also LAW; RELIEF.) (A. J. A.)

**Canada.**—The Old Age Pensions act was amended effective May 1, to increase the amount of the pension payable both to aged and to civilian blind persons, to reduce the pensionable age for the blind from 40 years to 21 years and to increase the amount of allowable income a pensioner might have without reducing his pension. The amended act obligated the federal government to pay 75% of the net cost of pensions up to a maximum of $30 per month per pensioner in place of the previous $25 per month and left the provinces free to pay additional amounts over the rate as they saw fit. An unmarried old-age pensioner could have an over-all income, including pension, of $600 per year instead of the former maximum of $425. A married pensioner was allowed $1,080 a year, including pension.

Maximum income for an unmarried blind pensioner was increased from $500 to $720 per year, including pension. Maximum income for a married blind pensioner was increased to $1,200.

On Sept. 30, 1947, pensions were being paid to 215,889 aged persons and 7,476 blind persons.

The Family Allowances act continued without change during 1947, although alterations in the income tax laws resulted in approximately 56,000 additional children being enrolled for family allowances early in the year. Total payments for the calendar year to 1,633,675 families were $261,772,929, with the allowance per child averaging slightly less than $6.

By order-in-council on Dec. 3, to take effect on Jan. 1, 1948, unemployment insurance coverage was extended to include employees paid by the month and earning less than $3,120 per year (the previous figure had been $2,400). The change put monthly paid employees on the same basis as weekly paid employees. Alberta began free medical and hospital care for recipients of old-age, mothers' and blind pensions.

Ontario increased relief to unemployables (estimated total 16,000) throughout the province, bringing them up practically to the same scale as old-age pensioners. Municipalities were authorized a 10% increase in food allowances to such unemployables and their dependents, the province contributing half; and an allowance of $1 a month for "incidentals" (to include tobacco) was also permitted. (C. CY.)

**Great Britain.**—The most important development during 1947 was the introduction of the National Assistance bill in November, which broadly completed the social-security system based on the Beveridge plan. The new scheme of assistance was in two main divisions; financial assistance for all who would be in need, which became the responsibility of the Assistance board (renamed the National Assistance board) applying scales of need under new regulations to be approved by parliament after the bill became law; and greatly improved and extended welfare services which would become the responsibility of the larger local authorities. This scheme finally eliminated what remained of the old poor law, which was replaced by comprehensive assistance services of modern conception.

Any person whose needs were not fully met by national insurance benefits or pension, or who was outside the insurance scheme, would receive monetary assistance from the National Assistance board. Complementary welfare services would be provided by the local authorities, but the National Assistance board would have the responsibility for the social rehabilitation of vagrants.

An important feature of the bill was the provision for aged persons requiring other than monetary assistance. The old system of workhouses or public assistance institutions would disappear and be replaced by small homes established by the welfare authorities. The homes would be for 25 persons to 30 persons, and would provide cooking, laundry and similar services while allowing the maximum of individual privacy. The local authorities would charge for this accommodation with a minimum which old-age pensioners would be able to meet from their pensions, and have a balance of five shillings per week for incidental personal expenses. Those not on full pensions or with no pension would be put in a position to meet the minimum charges by the National Assistance board. Great importance was attached to this departure from the artificial economy of institutional relief, which had long been held to be one of the worst features of the poor law. For the future the aged who needed special care would themselves pay for this and would live as normal members of the community.

It was intended that the new assistance scheme should become operative concurrently with the national insurance scheme in July 1948. Consequently, 1947 was largely a period of preparation, altogether a formidable task; the number of those embraced by the old insurance schemes rose from 21,000,000 in 1939 to 24,000,000 in 1947, and the number of beneficiaries under the contributory pensions scheme from 3,500,000 to about 4,500,000.

Following the arrangements made in 1946 for increased rates of old-age pensions to pensioners retiring from work, the section of the main insurance act, which permitted individual extension of the statutory period of unemployment benefit, was also brought into operation. This arrangement was made to meet circumstances in certain areas where unemployment had been prolonged by the dislocation of industry in the changeover from war to peacetime conditions.

Another important phase in the evolution of social security was a commonwealth conference held in London to consider reciprocal national insurance arrangements between the commonwealth countries. Similar discussions were held in Paris with the French government. (J. McAt.)

**Social Service:** *see* CHILD WELFARE; RELIEF; SOCIAL SECURITY.

## Societies and Associations.

The following is a selected list of U.S. societies and associations, with date of founding, membership, officers and chief activities during 1947. (*See* also the separate articles on AMERICAN LEGION; BOY SCOUTS; RED CROSS; YOUNG MEN'S CHRISTIAN ASSOCIATION; etc.)

**American Academy of Arts and Letters.**—An organization founded in 1904 by the National Institute of Arts and Letters for the furtherance of literature and fine arts in the United States. Membership is limited to 50 persons chosen only from the institute. At a special academy meeting on May 22, 1947, medals were awarded, 15 arts and letters grants of $1,000 each were given to artists, writers and musicians; and new members of both the academy and the institute were inducted. Election of three new members—John Dos Passos, Mahonri M. Young and John Taylor Arms—was announced on Nov. 25. Officers elected for 1948 were: Walter Damrosch, president; James Truslow Adams, chancellor and treasurer; Van Wyck Brooks, secretary. Publications include the *Yearbook* and an art exhibition catalogue. Headquarters: 633 W. 155th St., New York 32, N.Y.

**American Academy of Political and Social Science.**—The academy was founded in 1889 to provide a public forum for discussion of national and world questions through the agency of meetings and publications. Membership in 1947 totalled about 13,000. The organization's 51st annual meeting was addressed by Lord Inverchapel, Britain's ambassador to the U.S. The *Annals* is the academy's bimonthly publication. Officers (1947): Ernest Minor Patterson, president; J. P. Lichtenberger, secretary, and Charles J. Rhoads, treasurer. Headquarters: 3457 Walnut St., Philadelphia 4, Pa.

**American Association for the Advancement of Science.**—A scientific association whose membership in 1947 totalled 32,000. It publishes *Science*, a weekly scientific journal for specialists; *The Scientific Monthly*, a nontechnical, illustrated scientific journal, and (1947) technical symposium volumes on *Dental Caries and Fluorine* and *Approaches to Tumor Chemotherapy*. Officers (1947): president, Harlow Shapley; administrative secretary, Forest Ray Moulton; treasurer, William E. Wrather, and chairman of the executive committee, James B. Conant. Headquarters: 1515 Massachusetts Ave., N.W., Washington 5, D.C.

**American Association of Law Libraries.**—The association, founded in 1906 and incorporated in 1935, has for its objective the fostering of "the development of law libraries in the United States and Canada, through establishing and maintaining standards for libraries and librarians; to publish in its official organs material of professional interest and value." The association in 1947 had 307 regular members, 14 life members and 42 associated members. Publications: *Law Library Journal*, a quarterly, and *Index to Legal Periodicals*, which is issued 11 times yearly with quarterly, annual and triennial cumulations. Officers (1947): president, Laurie H. Riggs; secretary-treasurer, Helen M. S. Helmle of 393 Seventh Ave., Room 1506E, New York city.

**American Bankers Association.**—This national bankers organization, founded in 1875, had a membership in 1947 of more than 15,800 banks, representing more than 96.6% of U.S. banks in number and more than 99% of the entire banking resources of the nation. Its primary objective is "to promote the general welfare and usefulness of banks and financial institutions." Educational activities of the association include the American Institute of Banking for bank personnel and the Graduate School of Banking for bank officers. During the year 80,000 persons held memberships in the A.I.B. and more than 41,000 banking people had enrolled in courses given in many cities. Publication: *Banking*, a magazine. President (1947): Joseph M. Dodge of the Detroit bank, Detroit, Mich. National headquarters: 12 E. 36th St., New York city.

**American Bar Association.**—Founded in 1878 to advance the science of jurisprudence and promote the administration of justice, the society's membership (as of June 30, 1947) was 40,223. The Ross prize of $3,000 went to William Tucker Dean for his essay, "How Can International Legislation Best Be Improved?" The annual medal for conspicuous service to the cause of U.S. jurisprudence was awarded to William L. Ransom. Publications: *The American Bar Association Journal*, a monthly; an annual volume of reports and proceedings and various pamphlets. Officers (1947): Tappan Gregory, president; Joseph D. Stecher, secretary, and Walter M. Bastian, treasurer. Headquarters: 1140 N. Dearborn St., Chicago, Ill.

**American Bible Society.**—Founded in 1816 for the purpose of encouraging a "wider circulation of the Holy Scriptures without note or comment," the society in 1947 had a membership of about 100,000. The society was active in aiding translators of the Bible, and in publishing, distributing and encouraging its use, with special emphasis on supplying Bibles to Germany, Japan, Korea and the Philippines. Publication: *The Bible Society Record*, issued ten times a year. President (1947): Daniel Burke. Headquarters: 450 Park Avenue, New York 22, N.Y.

**American Chemical Society.**—Organized in 1876, the society's objectives are to encourage the advancement of chemistry, to promote research in chemical science and industry and to improve the qualifications and usefulness of chemists. Membership (as of Oct. 1, 1947) was 54,849. Outstanding activities during 1947 were the two annual meetings. The society also participated in several international chemical congresses and contributed $25,000 to the United Nations Educational, Scientific and Cultural organization to assist foreign students of chemistry studying in the U.S. Publications: *Chemical and Engineering News, The Journal of the American Chemical Society, Chemical Abstracts, Industrial and Engineering Chemistry, Analytical Chemistry, The Journal of Physical and Colloid Chemistry, Chemical Reviews, The Journal of Chemical Education, Rubber Chemistry and Technology.* Officers (1947): president, W. Albert Noyes, Jr.; executive secretary, Alden H. Emery; treasurer, Robert T. Baldwin. Headquarters: 1155 16th St., N.W., Washington 6, D.C.

**American College of Dentists.**—The college was founded in 1920 to promote the ideals of the dental profession, advance the standards and efficiency of dentistry, stimulate graduate study and efforts by dentists and improve public understanding and appreciation of oral health service. Membership in 1947 included 1,328 active fellows and 22 honorary fellows. A convocation was held in Boston, Mass., on Aug. 3. *The Journal of the American College of Dentists* is issued quarterly. Officers (1947) were: Dr. L. R. Main, president; Dr. O. W. Brandhorst, secretary; Dr. Harold S. Smith, treasurer. Office of the secretary was at 4952 Maryland Ave., St. Louis, Mo.

**American College of Life Underwriters.**—Incorporated in 1927, the college grew out of the needs for efficient life underwriting. To obtain the C.L.U. designation, candidates must pass five examinations and satisfactorily complete three years of business experience. In 1947 there were 2,999 holders of the C.L.U. designation; another 4,496 held partial credit. Publications: *Annual Announcement; C.L.U. Study Supplements.* Officers (1947): president, S. S. Huebner; chairman of the board, Julian S. Myrick; dean, David McCahan. Headquarters: northeast corner 36th and Walnut streets, Philadelphia 4, Pa.

**American College of Surgeons.**—Founded in 1913, the college has as its objectives the establishment and maintenance of an association of surgeons for the advancement of surgery and the ethical and competent practice of surgical arts. Membership in 1947 totalled 15,600. Publications include *Surgery, Gynecology and Obstetrics* and a quarterly bulletin. Officers for 1947 included: Dr. Arthur W. Allen, president; Dr. Dallas B. Phemister, treasurer; Dr. Paul B. Magnuson, secretary. Headquarters: 40 E. Erie St., Chicago 11, Ill.

**American Economic Association.**—This professional association of economists was founded in 1885 to encourage economic research, publications on economic questions and freedom of economic discussion. It consisted in 1947 of 5,300 members and 2,200 library, corporate and individual subscribers. The program of the annual meeting, held at Chicago, Ill., Dec. 28–31, 1947, was integrated around two problems: competition and monopoly; and the economic and monetary theories of J. M. Keynes. The Francis A. Walker medal was awarded to Wesley C. Mitchell and the J. B. Clark medal to Paul A. Samuelson. Publications: *American Economic Review* (quarterly); *Papers and Proceedings.* Officers (1947): Paul H. Douglas, president; James W. Bell, secretary-treasurer. Headquarters: Northwestern university, Evanston, Ill.

**American Geographical Society of New York.**—This society was founded in 1852 to promote geographical research and exploration and the dissemination of geographical knowledge. In 1947 drafting was completed of the two North American sheets of the *Map of the Americas*, of which the three Latin-American sheets were published in 1942; progress was made on the revision of the 107-sheet *Map of Hispanic America;* a completely revised edition of *Aids to Geographical Research*, by John K. Wright, was published; and the Ronne Antarctic Research expedition was sponsored. Membership in 1947 was 4,476. Publications: *The Geographical Review* (quarterly); *Current Geographical Publications* (monthly); *Monograph Series.* Officers (1947): president, Richard Upjohn Light; director, John K. Wright. Headquarters: Broadway at 156th St., New York city.

**American Historical Association.**—This association was founded in 1884 for the purpose of promoting historical studies, collecting and preserving historical manuscripts and for other activities in the interests of U.S. history and history in the U.S. It was incorporated by act of congress in 1889. The association publishes *The American Historical Review*, a quarterly; an annual report and selected historical monographs. The annual meeting was held in Cleveland, O., Dec. 27–29, 1947. Officers (1947) included: Thomas J. Wertenbaker, Princeton university, president; Guy Stanton Ford, executive secretary; Solon J. Buck, treasurer. Headquarters: Library of Congress Annex, Washington, D.C.

**American Institute for Property and Liability Underwriters, Inc.**—This institution was incorporated in 1942 for the purpose of establishing educational standards for qualified property and casualty underwriters with the view toward their recognition as professional Chartered Property Casualty Underwriters. To attain the C.P.C.U. designation, candidates must pass five examinations and satisfactorily complete three years of business experience. During 1947, 455 candidates took 861 examinations in 38 states; 145 persons held the C.P.C.U. designation. The *Annual Announcement* covered the objectives and activities of the organization. Officers (1947): chairman of the board, S. S. Huebner; president, H. P. Stellwagen; dean, Harry J. Loman. Headquarters: Hamilton court, 39th and Chestnut streets, Philadelphia 4, Pa.

**American Institute of Accountants.**—A national society of certified public accountants, the A.I.A. was founded in 1887 to maintain high standards of education and practice for the profession and to develop the techniques of accounting and auditing to serve the public interest. Its membership in Sept. 1947 was 10,963. During the year, the A.I.A.'s committees continued its work toward improvement in the federal income-tax system. The society also prepared the official examinations for 44 states, the District of Columbia, the four territories and the treasury department. Publications: *The Journal of Accountancy*, a monthly magazine, and *The Certified Public Accountant*, a monthly news bulletin. Officers (1947): president, George D. Bailey of Detroit, Mich.; treasurer, Charles H. Towns of New York city, and secretary, John L. Carey of New York city. Headquarters: 13 E. 41st St., New York city.

**American Institute of Chemical Engineers.**—This organization was founded in 1908 for the advancement of chemical engineering in theory and practice and the maintenance of a high professional standard among its members. Members in 1947 totalled 7,570. Publication: a monthly, *Chemical Engineering Progress.* Officers (1947) included: Charles M. A. Stine, sident; C. R. DeLong, treasurer; Stephen L. Tyler, secretary and execu- e secretary. Headquarters: 50 E. 41st St., New York city.

**American Institute of Electrical Engineers.**—The society, founded in 1884 the advancement of the theory and practice of electrical engineering d allied arts and sciences, totalled 27,490 members as of Aug. 1, 1947. tivities during the year included four national and two district meet- gs and co-operation with other engineering societies in many activities. e institute's sections in 1947 numbered 80 and it had 127 student anches. Publications: *Electrical Engineering*, a monthly, *Transactions* d *Year Book*, both issued annually. Officers (1947): president, B. D. ill of Dallas, Tex., and H. H. Henline, secretary. Headquarters: 33 W. th St., New York 18, N.Y.

**American Institute of Mining and Metallurgical Engineers.**—An organiza- n founded in 1871 to promote the arts and sciences connected with the onomic and scientific search for, production of and use of minerals, in- ding metals, coal, petroleum and other nonmetallic minerals. Mem- rship in 1947 was 17,500. The institute celebrated its 75th anniversary New York city at a three-day meeting. Publications include *Mining d Metallurgy*, a monthly; five volumes of *Transactions* published in 47 and various periodicals. Officers: Clyde Williams, president, and B. Parsons, secretary. Headquarters: 29 W. 39th St., New York 18, Y.

**American Iron and Steel Institute.**—This organization was incorporated 1908 to provide for the mutual exchange of information and experi- ce, to encourage and co-ordinate industry research, compile statistics d promote the use of iron and steel. Membership in 1947 included 109 mpany members, 500 associate members, 1,516 active members, 42 eritus members and 9 honorary members. Outstanding research devel- ments included use of high-pressure blast in blast-furnace operation and e of oxygen in the steel open hearth. Publications: *Steelways*, bi- onthly; *Steel Facts*, bimonthly; *Yearbook* and numerous other works. ficers (1947): president, Walter S. Tower; treasurer, Harold L. Hughes, d secretary, George S. Rose. Headquarters: 350 Fifth Ave., New York y.

**American Law Institute.**—Founded in 1923 to promote clarification and mplification of the law and its better adaptation to social needs, to se- re the better administration of justice and to encourage and carry on holarly and scientific legal work. During 1947 the institute co-operated th the National Conference of Commissioners on Uniform State Laws in e drafting of a uniform commercial code. The institute agreed at its nual meeting to revise some sections of its work, *Restatement of the w.* Membership in 1947 comprised 832 elected members (of which 52 re also ex-officio members) and 249 ex-officio members. Officers (1947): arrison Tweed, president; William Dean Embree, treasurer, and Herbert Goodrich, director. Headquarters: 3400 Chestnut St., Philadelphia 4, Pa.

**American Mathematical Society.**—This society was founded in 1888 for e purpose of encouraging and maintaining an active interest in mathe- atical science. Membership in 1947 was 3,400. Publications: *Bulletin the American Mathematical Society, Transactions of the American athematical Society, Mathematical Reviews, Colloquium Publications* d *Mathematical Surveys.* Officers (1947): president, Einar Hille of ale university; secretary, J. R. Kline, University of Pennsylvania. Head- arters: 531 W. 116th St., New York city.

**American Society of Civil Engineers.**—The society was founded in 1852 r the purpose of advancing the sciences of engineering and architecture. embership, as of Nov. 1947, was 22,060. Professional activities of the ciety were directed through its headquarters, its professional commit- es, technical divisions and student chapters in 125 engineering colleges. blications include *Proceedings* (monthly), *Transactions* (yearly), *Civil gineering* (monthly) and a *Yearbook.* Officers (1947): E. M. Hast- gs, president; William N. Carey, executive secretary. Headquarters: 33 . 39th St., New York 18, N.Y.

**American Society of Mechanical Engineers.**—A national organization whose embership of 23,500 in 1947 was grouped into 20 professional divisions vering all phases of mechanical engineering. The society's work was rried on by its 71 sections in the U.S. and Canada. Student branches ere also maintained in 122 engineering schools. The society held five eetings and completed organization of its Nuclear Energy Application mmittee. Publications: *Mechanical Engineering*, monthly; *Journal of pplied Mechanics*, quarterly; *Transactions*, eight times yearly; *A.S.M.E. echanical Catalog and Directory*, annually. Officers (1947): Eugene W. 'Brien, president; Clarence E. Davies, secretary. Headquarters: 29 W. 9th St., New York city.

**American Society of Tool Engineers.**—An educational body, the society as founded in 1932 to disseminate information regarding and pertinent tool engineering. In 1947 membership was 18,072. Publications during e year were *The Tool Engineer, Tool Engineer's Handbook, Data Sheets* nd various textbooks on tool engineering. Officers (1947): president, . B. Peirce; executive secretary, Harry E. Conard; treasurer, V. H. ricson, and secretary, W. A. Dawson. Headquarters: 1666 Penobscot uilding, Detroit 26, Mich.

**Anti-Saloon League of America.**—Organized in 1895, interdenominational nd nonpartisan in character, this national federation of state temperance rganizations intensified its temperance activities in 1947, with principal mphasis on its youth education program. Other activities consisted of pport of extension of no-licence areas through local option and where cal option was not permitted, the league sought to obtain the right to ch a vote. It supported a program to conserve food through curtailing roduction of alcohol as a means of meeting the world food shortage. It so supported a bill before congress designed to prohibit advertising of coholic beverages. Officers (1947): Bishop Ralph S. Cushman, presi- ent; Laura Lindley, research secretary. Headquarters: 131 B St., S.E., ashington, D.C.

**Brookings Institution.**—A nonprofit organization devoted to research and aining in the field of economics and government, it was founded in 916. The institution is supported by grants from foundations, its own ndowment and income from the sale of publications. Its 1947 publica- ons included: *The Guarantee of Annual Wages* by A. D. H. Kaplan; *The luminum Cartel* by Louis Marlio; *A National Labor Policy* by Harold . Metz and Meyer Jacobstein and a study guide, *Major Problems of nited States Foreign Policy*, prepared by the staff of the International Studies group of the institution. Officers (1947): Harold G. Moulton, president; Henry P. Seidemann, treasurer; Elizabeth H. Wilson, secretary, and Darrell Hevenor Smith, executive manager. Headquarters: 722 Jackson Place, N.W., Washington 6, D.C.

**Buhl Foundation, The.**—Established in 1927, the foundation has granted to existing (or especially established) agencies a total of $5,155,000 for the promotion of nationally significant programs in the Pittsburgh district —in regional economic, historical and social research, in higher education and in research in the natural sciences. The foundation's $1,700,000 Chatham Village, a pioneering demonstration of large-scale planned residential community building for long-term investment, has received international recognition. Foundation assets in 1947 were $12,900,000. Director: Charles F. Lewis. Headquarters: Farmers Bank building, Pittsburgh 22, Pa.

**Carnegie Trusts.**—*Carnegie Corporation of New York*, established in 1911, with an endowment of $135,000,000, makes grants to institutions and agencies whose activities aim at the advancement and diffusion of knowledge among peoples in the U.S. and the British empire. During 1946–47, grants totalling $4,468,047 were appropriated for other Carnegie agencies, colleges and universities and various agencies. The other five separately administered Carnegie organizations in the U.S., founded before the corporation for specific purposes, are:

*Carnegie Institute of Pittsburgh* (1896), comprising a museum of fine arts, a music hall, a museum of natural history and a public library.

*Carnegie Institution of Washington* (1902), devoted to scientific research; by 1947 it had expended about $50,000,000 in its program.

*Carnegie Hero Fund Commission* (1904), established to recognize heroic acts performed throughout the U.S., Canada and Newfoundland; from 1904 it had awarded 3,473 medals and a total of about $7,000,000 in pecuniary awards.

*Carnegie Foundation for the Advancement of Teaching* (1905), established to provide retiring pensions for teachers and to advance higher education, paid $1,899,867 in such allowances in 1947, raising the cumulative expended total to $51,977,286.

*Carnegie Endowment for International Peace* (1910), established to serve the purpose indicated by its name, continued in 1947 to promote international understanding and further the general cause of peace.

**Catholic Community Service, National.**—An agency founded in 1940 to promote the spiritual, educational, recreational and welfare needs of men and women in the armed forces and war production workers and their families. Activities in 1947 were adjusted to meet the country's changeover from a war to peace economy and society. Publications include: *NCCS*, a monthly magazine, *NCCS Newsletter*, a house organ, and various pamphlets. James S. Mitchell was executive director in 1947. Headquarters: 1312 Massachusetts Ave., N.W., Washington 5, D.C.

**Catholic Library Association.**—An international organization of librarians, educators and others interested in promoting Catholic literature and Catholic library work. Membership in 1947 totalled 1,434. Publications include: *Catholic Library World*, the official publication; *Catholic Periodical Index; Catholic Supplement to Standard Catalog for High School Libraries* and *Catholic Booklist.* Officers (1947): president, Brother A. Thomas, librarian, Manhattan college, New York city; secretary-treasurer, Laurence A. Leavey, Manhattan college, New York city. Headquarters: Manhattan college, New York city, *pro tem.*

**Commonwealth Fund, The.**—An endowment, established in 1918 by Mrs. Stephen V. Harkness "to do something for the welfare of mankind." Appropriations for the year ending Sept. 30, 1947 were $1,614,442.58. Activities tending to promote or maintain physical or mental health accounted for more than 75% of this sum. The fund in 1947 sought to put more emphasis on problems of personality and emotion adjustment in relation to medicine and gave fellowships for training physicians in psychiatry and psychotherapy. Malcolm P. Aldrich was president of the board of directors in 1947; the general director was Donal Sheehan. Headquarters: 41 E. 57th St., New York city.

**Daughters of the American Revolution, National Society of.**—A historical, educational and patriotic society founded in 1890, whose activities are conducted by 22 national committees and whose membership in 1947 totalled about 158,000, in 2,600 chapters. The D.A.R. owns and operates 2 schools and gives support to 12 approved schools. It has an extensive education program intended to advance U.S. music, give educational and practical assistance to American Indians and enable deserving students to continue their higher education through administration of a student loan fund. A large genealogical library of more than 38,000 volumes is maintained in Washington, D.C. Publications include: *National Defense News*, appearing five times yearly; *Daughters of the American Revolution Magazine*, a monthly. Officers (1947): Mrs. Roscoe C. O'Byrne, president general. Headquarters: 1720 D St., N.W., Washington 6, D.C.

**Elks, Benevolent and Protective Order of.**—A fraternal order organized in 1868 "to practise charity, justice, brotherly love and fidelity; to promote the welfare and enhance the happiness of its members; to quicken the spirit of American patriotism." In 1947 the Elks had 1,500 lodges with 900,000 members, spent more than $5,000,000 on charity and increased the fund of the Elks National foundation, which is expended on scholarships, care of tuberculars, crippled children and like philanthropies, to nearly $2,000,000. Publications: the *Elks Magazine*, a monthly. Officers (1947): grand exalted ruler, L. A. Lewis of Los Angeles, Calif.; Grand Secretary, J. E. Masters of Chicago, Ill. Headquarters: Elks National Memorial Headquarters Bldg., 2750 Lake View Ave., Chicago 14, Ill.

**Falk Foundation, The Maurice and Laura,** of Pittsburgh, Pa., was founded in 1929 for the purpose of bettering the lot of mankind. In 1947 the foundation gave grants of $110,500 to economic research organizations and $120,000 for distribution of reports of studies made by economic research organizations and for production and distribution of moving pictures in the field of economic education. Publications (financed by the Falk foundation) in 1947 were: by National Bureau of Economic Research, *Output and Productivity in the Electric and Gas Utilities, 1899–1942* and *Trends in Output and Employment;* by Committee on Public Debt Policy, *Our National Debt after Great Wars, Our National Debt and the Banks, Our National Debt and Interest Rates* and *Our National Debt and the Budget;* by the Brookings institution, *A National Labor Policy* and *The Guarantee of Annual Wages;* by Committee on Postwar Tax Policy, *A Tax Program for a Solvent America—1947*. Officers (1947): Leon Falk, Jr., chairman; I. A. Simon, secretary; Arthur E. Braun, treasurer, and J. Steele Gow, executive director. Headquarters: 1911 Farmers Bank building, Pittsburgh 22, Pa.

**Freemasonry** (Masonic Fraternity).—The chief problem of freemasonry in 1947 was the re-establishment of the fraternity in countries where it had been suppressed prior to and during World War II. In practically all European countries which were under axis control during the war, and in the far east, especially in the Philippines, grand lodges and many constituent lodges had been re-formed and were functioning. In other European countries, as well as in the U.S., Canada, Central and South America, Australia and New Zealand, progress was normal. The record of freemasonry in 1947 was one of substantial support to continued belief in the universal human desire for brotherhood and an indestructible determination to perpetuate its survival.

**Guggenheim Memorial Foundation.**—The John Simon Guggenheim Memorial foundation was established in 1925 for the advancement of research in all fields of knowledge and for creative work in the arts. The foundation in 1947 had an endowment of $23,142,755.78. During the year, it awarded 122 fellowships with grants of $310,000 and also granted 29 Latin-American fellowships with stipends totalling $80,000. Officers (1947) were: Mrs. Simon Guggenheim, president; Otto L. Myers, treasurer, and Henry Allen Moe, secretary. Headquarters: 551 Fifth Ave., New York city.

**International College of Surgeons.**—Founded in 1935 in Geneva, Switzerland, this organization has for its objective creation of a common bond among surgeons of all nations and promotion of high surgical standards throughout the world without regard for race, creed or colour. Membership in 1947 was about 3,500 in 29 countries. Publication: *The Journal of the International College of Surgeons*. Officers (1947): president, Dr. Albert A. Berg of New York city; international secretary general, Dr. Max Thorek of Chicago, Ill. Headquarters: 1516 Lake Shore drive, Chicago, Ill.

**Kiwanis International.**—Founded in 1915, Kiwanis International consists of representative business and professional men who strive, through the agency of weekly meetings, to give leadership for improvement of their communities and for other worth-while services. Membership, as of Nov. 15, 1947, totalled 180,000 distributed in 2,710 clubs. Kiwanis activities in 1947 included distribution of free lunches for needy children and other forms of child welfare help, giving vocational guidance to students, assisting veterans with housing problems and participating in "Get Out the Vote" campaigns. Publications: *The Kiwanis Magazine, Monthly Club Bulletin* and others. Officers (1947): Dr. Charles W. Armstrong, president; J. Belmont Mosser, treasurer, and O. E. Peterson, secretary. Headquarters: 520 N. Michigan Ave., Chicago 11, Ill.

**Knights of Columbus.**—A fraternal order organized in 1882, dedicated to preservation and championship of Catholic and U.S. principles. Membership as of June 30, 1947, was 681,480. The organization, which held its 65th annual convention in Boston, Mass. (Aug. 19–21), continued its campaign for a trust fund for Catholic college training for children of members left fatherless as a result of World War II. Its series of six 15-min. recordings on communism were broadcast over 311 radio stations in North and Central America. Publications: *Columbia*, a monthly, and *News*, a weekly. John E. Swift was supreme knight in 1947. National headquarters: 45 Wall St., New Haven 7, Conn.

**League of Women Voters of the United States.**—The league was founded in 1920 to promote political responsibility through informed and active participation of citizens in government without supporting or opposing any particular party or candidate. Membership in 1947 totalled 72,000. During the year local and state groups worked to improve their local and state governments through campaigns for better government machinery. Publications in 1947 included: *How the Wheels Go 'Round; Displaced Persons and U.S. Immigration Policy; Uncle Sam's Finances; The Public Interest in Atomic Energy; Current Housing Legislation*. Officers (1947): Anna Lord Strauss, president; Mrs. James G. Scarborough, secretary, and Mrs. Leonard Haas, treasurer. Headquarters: 726 Jackson Place, N.W., Washington 6, D.C.

**Lions Clubs, International Association of.**—This organization was founded in 1917 as a nonpolitical, nonsectarian association of service clubs whose purpose was to recognize and meet the needs of the community. During 1947 it completed 85,067 activities which may be classified under 8 classifications: boys and girls; citizenship and patriotism; civic improvements; community betterment; education; health and welfare; safety; sight conservation and blind. Membership in 1947 totalled 350,000 in 6,500 clubs in 19 countries. Publications: *The Lion; El Léon* (Spanish); *Lions International Monthly Letter*. Officers (1947): president, Fred W. Smith, Ventura, Calif.; secretary general, Melvin Jones, Chicago, Ill. Headquarters: 332 S. Michigan Ave., Chicago 4, Ill.

**Music Library Association.**—This organization was founded in 1931 to promote the establishment, growth and use of music libraries and collections in the U.S. and Canada. Membership in 1947 was about 750. It publishes *Notes*, the quarterly journal, and *Music and Libraries*, a collection of essays. One of its projects in 1947 was an index to music periodicals which at that time consisted of 400,000 cards based upon 99 music periodicals. H. Dorothy Tilly, Detroit Public library, was president in 1947; the secretary-treasurer was Mary R. Rogers, Library of Congress, Music Division, Washington 25, D.C.

**National Academy of Sciences.**—A scientific body incorporated by an act of congress in 1863 for the purpose of investigating and reporting upon scientific subjects as called for by any department of the U.S. government. Total membership (as of Aug. 22, 1947) was 407. During the year, the academy issued a number of grants and medals. Officers (1947) included: president, Alfred N. Richards; treasurer, J. C. Hunsaker, and executive secretary, Raymund L. Zwemer. Headquarters: 2101 Constitution Ave., N.W., Washington 25, D.C.

**National Association of Manufacturers.**—Founded in 1895, the N.A.M. is the spokesman of industry before the national government and its congressional and administrative agencies. Membership in 1947 totalled 16,500 manufacturers producing 80% of all U.S. goods and employing 75% of industry's workers. Publications include the *NAM News*, a weekly, a supplement analyzing and digesting labour rulings and a wide variety of booklets on economic and national affairs. Officers (1947): Earl Bunting, president; Robert R. Wason, chairman of the board, and Noel Sargent, secretary. Headquarters: 14 W. 49th St., New York city.

**National Association of State Libraries.**—Founded in 1889, the association has as its objective the providing of the benefits of interstate co-operation in administration of state libraries. Membership in 1947 included 44 state libraries. Publications include: *Check Lists of Session Laws, Statutes, Legislative Journals and Collected Documents* and *Proceedings of Annual Meetings*. Officers (1947) included: president, Dennis A. Dooley of Massachusetts; secretary-treasurer, Alfred Decker Keator of Pennsylvania.

**National Lawyers Guild.**—Founded in 1937, the guild is an association of lawyers who believe that human rights are more sacred than property rights, that civil liberties of all the people must be defended from invasion from any source and that the law should be made a living and flexible instrument of progress and equal justice. Membership in 1947 was approximately 4,000. Publications include: *National Lawyers Guild Review* (bimonthly), *National Guild Lawyer* (quarterly). Officers (1947): Robert W. Kenny, president; Robert J. Silberstein, executive secretary, and Abraham Pomerantz, treasurer. Headquarters (1947): 902 20th St., N.W., Washington 6, D.C.

**Performing Right Societies.**—A world-wide confederation of composers, authors and publishers of musical works whose chief purpose is the licensing to commercial interests of the right to perform publicly the copyrighted work of their members. The largest and most influential member of the confederation is the American Society of Composers, Authors and Publishers (A.S.C.A.P.), which was founded on Feb. 13, 1914, and whose membership in 1947 included about 1,890 composers and authors and 300 publishers. The income of this nonprofit voluntary association is derived from issuing licences to commercial establishments for the public performance for profit of copyrighted musical works of its members. Officers included (1947): Deems Taylor, president; George W. Meyer, secretary. A.S.C.A.P. headquarters: 30 Rockefeller Plaza, New York 20, N.Y.

**Research Libraries, The Association of.**—Founded in 1931, the association includes 45 of the largest research libraries in the United States and Canada. It seeks by co-operative effort to develop and increase the resources and usefulness of research collections in U.S. libraries. Its publications include *Doctoral Dissertations Accepted by American Universities* (periodical); *A Catalog of Books Represented by Library of Congress Printed Cards*. A *Reprint of the British Museum Catalogue* was in the process of publication. Officers in 1947 included: Charles W. David, the executive secretary, and an advisory committee of five members. Headquarters: University of Pennsylvania, Philadelphia, Pa.

**Rockefeller Foundation.**—The foundation was chartered in 1913 and is concerned with problems in the medical, natural and social sciences, the humanities and public health. Except to a limited extent in public health, the foundation is not an operating organization. Its activities are confined to support of other agencies and to the training, through postdoctoral fellowships, of competent personnel in the various fields of knowledge. Publications: *The President's Review* and *The Annual Report*. Officers (1947): Raymond B. Fosdick, president; Thomas B. Appleget, vice-president, and Norma S. Thompson, secretary. Headquarters: 49 W. 49th St., New York city.

**Rosenwald Fund, The Julius.**—The fund was founded in 1917 for the purpose of improving the conditions of disadvantaged groups in the U.S. population, especially Negroes, with the view toward their full participation in U.S. life. It was expected that by June 30, 1948, the fund would have completed its work, having expended about $23,000,000 for education, health and other philanthropies. Officers (1947) were: Edwin R. Embree, president; Will W. Alexander, vice-president, and Dorothy A. Elvidge, secretary and comptroller. Headquarters: 4901 Ellis Ave., Chicago, Ill.

**Rotary International.**—A world-wide organization of Rotary clubs made up of groups of representative men for the purpose of furthering co-operation and good will in business and community life. Membership in Rotary, first organized in 1905, was as follows, on Nov. 3, 1947: 305,000 distributed in 6,301 clubs in 80 countries and geographical regions. Activities in 1947 centred principally on child welfare and student assistance, with special attention given to advancement of international good will and understanding. Publication: *The Rotarian*. Officers (1947–48): S. Kendrick Guernsey, U.S., president; secretary, Philip Lovejoy, U.S.; treasurer, Richard E. Vernor, U.S. Headquarters: 35 E. Wacker drive, Chicago, Ill.

**Russell Sage Foundation.**—This foundation was established in 1907 "to promote the improvement of social and living conditions in the United States." Of the income from the endowment of $15,000,000, disbursements in the fiscal year ending Sept. 30, 1947, amounted to $527,000, of which $150,000 was in the form of grants to organizations in the fields of social work, social research, health, housing and city planning. The foundation maintains a research staff, the results of whose studies are made available through publications, conferences and consultation service. Publications during 1947 included: *The Miners' Case* by Edward A. Wieck; *Social Work Year Book, 1947* (ninth edition), edited by Russell H. Kurtz; *Your Community* by Joanna C. Colcord, revised edition by Donald S. Howard. Officers (1947): president, Morris Hadley; acting general director, Ralph G. Hurlin. Headquarters: 130 E. 22nd St., New York 10, N.Y.

**Spelman Fund of New York.**—The Spelman Fund of New York was incorporated in 1928. The charter provides that the fund "is formed for exclusively charitable, scientific and educational purposes, including the advancement and diffusion of knowledge concerning child life, the improvement of interracial relations and cooperation with public agencies." From 1930 the fund's program had been directed toward co-operation with public agencies for the advancement of public administration. Its interest in this field is expressed through support of activities of public and quasi-public agencies engaged in making significant results of current administrative experience generally available to public officials; in developing improved methods and putting them to practical use and in experimenting with new devices and procedures under actual operating conditions. Charles E. Merriam was chairman in 1947. Headquarters: 783 Fifth Ave., New York, N.Y.

**Theatre Library Association.**—This association, an affiliate of the Ameri-an Library association, was founded in 1937 for the purpose of preserving and making accessible to the public the records of the drama and indred fields of entertainment. Membership in 1947 was 190. The official publication is *Broadside,* issued quarterly; a sponsored publication is *Theatre Annual.* Officers (1947): president, George Freedley, New York Public library; secretary, and editor of *Broadside,* Mrs. Sarah Chokla Gross; treasurer, Mrs. Elizabeth P. Barrett, New York Public library. Headquarters: Theatre Collection, New York Public library, New York 8, N.Y.

**Twentieth Century Fund.**—Organized in 1919 by Edward A. Filene, the oundation serves a threefold purpose: research, policy formation and ublic education on current economic operations. During 1947 the fund continued its efforts to bring about greater public understanding of trouble reas in industrial relations and a more constructive approach in dealing with them. A special research staff and committee produced a survey, *Rebuilding the World Economy,* which detailed the role of the United States in foreign trade and investment. *America's Needs and Resources* was also published during 1947. Officers: John H. Fahey, president; Morris E. Leeds, treasurer; Evans Clark, executive director. Headquarters: 330 W. 42nd St., New York 18, N.Y.

**Woman's Christian Temperance Union, National.**—The union was founded in 1874 to unite the Christian women of the Untied States to rally public opinion to the standard of total abstinence from all alcoholic liquors. Activities during 1947 included two summer schools on alcoholic education, publication and distribution of thousands of pamphlets, circulars and posters and extensive work among young people. Publications include *Union Signal* (weekly) and *Young Crusader,* a monthly for children. Officers (1947): Mrs. D. Leigh Colvin, president; Lily Grace Matheson, corresponding secretary; Violet T. Black, treasurer. Headquarters: 1730 Chicago Ave., Evanston, Ill.

**Women's Clubs, General Federation of.**—Founded in 1890 for the purpose of uniting women's clubs throughout the world for the promotion of education, philanthropy, public welfare, moral values, civics and fine arts. The federation in 1947 was composed of 3,000,000 members in 17,000 clubs. Activities during the year centred on services for children and young people, organization of health institutes, programs to strengthen the U.N., raising of scholarship funds and contributions for foreign relief. Publication: *General Federation Clubwoman,* a magazine. Officers (as of June 1947): president, Mrs. J. L. Blair Buck; recording secretary, Mrs. Earl Shoesmith; treasurer, Mrs. Charles Fuller. Headquarters: 1734 N St., N.W., Washington, D.C.

**Zionist Organization of America.**—This organization was founded in 1897 to further the upbuilding of Palestine as a Jewish commonwealth and to promote the interests of the Jewish renaissance. Among the constituent bureaus of the organization are: membership; Palestine bureau; American Zionist fund; education; radio; films; Hebrew university scholarship; veterans; Unity committee. The organization's president testified before the United Nations hearings in 1947 as a representative of the Jewish people. Membership in 1947 was 232,864. Publications include: *The New Palestine; Dos Yiddishe Folk; Palestine Yearbook.* Dr. Emanuel Neumann was president in 1947. Headquarters: 41 E. 42nd St., New York 17, N.Y. (*See* also PALESTINE.)

## Sociology.

Among the currents in sociology, it was possible to trace the following in 1947: (1) the continuing coalescence of social psychology, social and cultural anthropology and sociology into a more inclusive science of social relations; (2) some evidence of sentimental archaism in the attempted revivals of thinkers recently regarded in some quarters as of historical relevance only; (3) interest in philosophy of history, theory of history, or historical sociology stimulated by Somervell's summary of Arnold J. Toynbee's *A Study of History;* (4) a wide array of books and articles of somewhat *ad hoc* character; and (5) studies in the methods and techniques of the social sciences in general and of sociology in particular. Taking these in order, the outstanding literature included the following:

**Fusion.**—What had been called "the anthropological approach" within the framework of a comprehensive science of social relations was evidenced in a monograph by Leighton and Kluckhohn, *Children of the People,* a follow-up of their earlier work, *The Navaho.* Field observation and a series of tests provided the data, but the integrated theoretical scheme lacked adequate empirical support at several points. A not altogether dissimilar approach, presented under a different name, was represented in the four special symposium issues of the journal *Sociometry,* although the testing apparatus was more elaborate and was focused on a number of additional points.

Single articles of general "social relations" type were very few; the only one of importance was that by Homans, "A Conceptual Scheme for the Study of Social Organization" in the *American Sociological Review;* it derived primarily from Henderson's interpretation of Pareto, and drew heavily on the work of other Henderson-influenced researchers of Harvard. Textbooks in this field were published by Cuber, Hiller and Sorokin. The first two offered little that was essentially new, and Sorokin's textbook was really a treatise systematizing the theoretical framework that pervaded his other writings. Whatever its shortcomings, the volume reached a high level of abstraction, was carefully integrated, and made readily available a number of novel insights and formulations. Overshadowing Sorokin's contribution, however, was the monumental work of Max Weber, *The Theory of Economic and Social Organization,* published in translation by Henderson and Parsons. Here a real foundation for a science of social relations was presented.

**Revivals.**—Revivals of thinkers judged to be of sociological significance were best exemplified by Max Horkheimer's *Eclipse of Reason,* in which Hegelianism was persuasively recommended. Horkheimer's political leanings toward the German Social Democratic tradition, with its reverence for Hegel as interpreted by Marx, accounted in large measure for his special emphasis. In the pages of the Stalinist journal, *Science and Society,* numerous articles of similar type appeared—with, of course, a Communist rather than a Social Democratic orientation. A slashing attack on this general line of analysis which also enjoyed some vogue in Britain although not popular among intellectuals on the continent, was delivered by Lundberg in his "Sociology versus Dialectical Immaterialism" (*American Journal of Sociology*). Lundberg was undoubtedly nettled by Marxist attacks on his positivism, but altogether apart from the intruding personal note, the article was an acute appraisal and rejoinder.

**History and Sociology.**—Historical sociology enjoyed much public interest because of the 1947 Toynbee fad. Dating from 1934–36, his six-volume treatise came to attention in 1947 because of an adroitly advertised one-volume abridgement. The work was hailed as a crushing refutation of Marx, but Marx had been crushingly refuted many times before. Toynbee's real significance lay in his masterly descriptions and analyses of various ethnic and cultural groups such as the Spartiates, the Jews, or the Turks, rather than in his comprehensive but highly speculative theodicy. In the midst of a welter of enthusiastic reviews and commentaries, those by Hicks (*Harper's,* Feb. 1947) and Barnes (*Am. Sociol. R.*) preserved balanced judgment, although Barnes was perhaps too harshly adverse.

**Subjects of Immediate Interest.**—Among publications dealing with contemporary problems having some sociological relevance, probably the most attention-compelling were those having to do with housing. "The American Family and Its Housing" was the title of an entire issue of the *Am. Sociol. R.,* and a similar emphasis was reflected in the programs of several sociological conventions. Juvenile delinquency and family instability brought forth the usual large crop of texts, monographs and articles, among the most interesting of which were Hills's "The American Family: Problem or Solution," (*Am. J. Sociol.*) and Bossard's "The Role of the Guest: A Study in Child Development" (*Am. Sociol. R.*). The one major attempt to integrate theory and research published during the year, Zimmerman's *Family and Civilization,* was severely criticized as nostalgic and theoretically inadequate.

During 1947 ethnic conflicts ("race problems") caused much uneasiness, and the Social Science Research council financed a bulletin entitled *The Reduction of Intergroup Tensions.* A new series of books on "Peoples of America," aimed in a similar direction, was inaugurated by Arnold Mulder's *Americans from Holland.* The traditional melting-pot theme was used to integrate the facts. Frazier's article, "Sociological Theory and Race Relations," was one of the few good guides for analysis. Among the more definitely factual studies, McCormick and Hornseth's "The Negro in Madison, Wisconsin" offered several interesting conclusions. Industrial unrest and related matters, crystallized for the public in the Taft-Hartley act, were scientifically discussed in Warner and Low's *The Social System of the Modern Factory.*

Somewhat belatedly following the wave of general interest, there appeared a study entitled *Public Reactions to the Atomic Bomb and World Affairs.* Almost $25,000 was spent on this by the S.S.R.C.; it consisted essentially of a public opinion poll of 600 individuals interviewed before and after the Bikini bomb tests. There was some attempt at explanation of the answers elicited. Cantril, Herring, Likert, and Cottrell, the last as chairman, formed the research committee. Ogburn, likewise concentrating on matters of current interest, brought out *The Social Effects of Aviation.* Because of security regulations, it was apparently impossible to devote attention to aviation in relation to possible future warfare. The book was well-financed, and was a convenient summary of masses of empirical evidence, although analytically it had little to offer. Some light was thrown on the nature of large-scale research of the kinds just mentioned in Bendix's article "Bureaucracy: The Problem and Its Setting" (*Am. Sociol. R.*).

An article evidencing much individual initiative was Davis's "Some Sources of American Hostility to Russia" (*Am. J. Sociol.*). Abounding in analytic leads, it could readily have been turned into a large-scale research project which might have avoided bureaucratic handicaps.

A study of large-scale type which was markedly successful was the presidential committee report on civil liberties in the United States, *To Secure These Rights.* Prepared by a citizens' committee backed up by a group of social scientists who assembled the data, it had more copies distributed than any other government report in the preceding decade—not excepting Smythe's work on the atomic bomb.

Evidence of widespread uneasiness at the postwar turmoil could be inferentially gleaned from the large number of books and articles extolling the small community, with its presumable neighbourhood cohesion, as a cure-all for a wide variety of symptoms of social disorganization. Although not a professional sociologist, Hicks presented a book along these lines which was widely read and which, with a few reservations, can be strongly recommended. The drawbacks of the small community when it is extremely isolated were interestingly pointed up in an outstanding article by Peter Munch, "Cultural Contacts in an Isolated Community—Tristan da Cunha" (*Am. J. Sociol.*). Studies of other communities in which isolation was in some sense disrupted were to be found in a report covering South Seas natives under U.S. rule, *Economic and Human Resources of Micronesia,* United States Commercial company. Six of the 26 volumes of this microfilmed report were by social scientists; it was made available in its entirety by the Library of Congress. As a mine of empirical evidence and suggestions for further analysis, it had high likelihood of future use. Much the same, *mutatis mutandis,* could be said of the 10 volumes of the *War Relocation Authority Monographs.*

**Methods and Techniques.**—Timasheff's "Definitions in the Social Sciences" (*Am. J. Sociol.*) was a much-needed corrective of the loose practices widely evident, and Adler's "Operational Definitions in Sociology" (*Am. J. Sociol.*) was an amusing and trenchant attack on the basic absurdity of operationism. Winch's "Heuristic and Empirical Typologies" (*Am. Sociol. R.*) was an interesting effort to show that factor analysis might be of value in type construction and use. Showing much more penetration and knowledge of basic literature was Goode's "A Note on the Ideal Type" (*Am. Sociol. R.*). In fact, Goode's discussion had most of the merits called for in Ogburn's "On Scientific Writing" (*Am. J. Sociol.*)—an article, incidentally, which betrayed a marked lack of interest in precise analysis at the level of verbal symbolism. In the several articles by Hart and associates on verifiability ratings in the social sciences (*Am. Sociol. R.* and *Am. J. Sociol.*) only the visual symbolism of mathematics, especially in the ordinary statistical formulas, received adequate attention.

Valuable mathematical innovations, focusing on a highly relevant problem, were presented in Guttman and Suchman's "Intensity and a Zero Point for Attitude Analysis" (*Am. Sociol. R.*). These writers, sociologists as well as statisticians, were keenly aware of the pitfalls as well as the possibilities of polling techniques. Another worthwhile mathematical contribution was Hornseth's constructive criticism (*Am. Sociol. R.*) of Jahn, Schmid, and Schrag's "The Measurement of Ecological Segregation" (*Am. Sociol. R.*).

In Latin America, sociological teaching and research were vigorously prosecuted. The quarterly journal in English edited by Laszlo Radvanyi, *The Social Sciences in Mexico and South and Central America,* made its first appearance in May. The *American Sociological Review* also had a good article on sociology in Peru. Barnes and Becker's *Social Thought from Lore to Science,* containing chapters on sociology in the Iberian peninsula and Latin America, appeared in Spanish translation.

Sociology in France was furthered by the establishment of the Centre d'Études Sociologiques at Paris. The *Cahiers Sociologiques* continued to appear under the editorship of Gurvitch. German sociology made progress through resumption of publication of the *Cologne Quarterly* under Wiese's editorship, and the establishment of a series of sociological sourcebooks and monographs—the *Civitas Gentium* series—edited by Solms of Marburg.

In Britain the year was signalized by the publication of Ginsberg's *Reason and Unreason in Society,* Marshall's *Sociology at the Crossroads,* and the first issue of a new journal, *Human Relations,* published jointly by the Tavistock Institute of Human Relations, London, and the Research Center for Group Dynamics, Massachusetts Institute of Technology. A useful brief survey of the social sciences in the Soviet Union was presented by Barrington Moore, Jr., in the *American Sociological Review.* In Japan, a notable event for sociology was the first postwar number of *Social Research.* In June the sociologists, together with five other social science societies, held their first postwar convention in Tokyo. (H. Bec.)

## Sodality of Our Lady.

The year 1947 brought to the 14,438 sodalities of the United States two new monthly periodicals: *Action Now,* issued for adult sodalists, and the *Junior Sodalist,* for elementary school aged sodalists. *The Queen's Work* was changed in format and its content geared to the "Queen's Teens."

A new department for men's sodalities was set up at the central office (3115 So. Grand Blvd., St. Louis 18, Mo.) under the direction of former chaplain Rev. F. L. Zimmerman, S.J., and a new visual educational department was established under the guidance of Rev. Robert E. Southard, S.J.

International collaboration continued: Revs. J. Roger Lyons, S.J., and Aloysius J. Heeg, S.J., of the central office in St. Louis took part in the international sodality convention in Barcelona, Spain, as the two official delegates from the United States. Dorothy Willmann participated in the first postwar congress of the Section de Jeunesse, Union International des Ligues Feminines Catholiques in Rome, Italy, and was re-elected to the executive council of the organization.

Seven summer schools of Catholic Action were held in St. Louis, Boston, Montreal, St. Paul, San Antonio, New York and Chicago. These drew a record total attendance of 14,257. The Garvey collection, only Catholic collection of interracial and Negro progress, begun in 1914 by Rev. A. J. Garvey, S.J., was onated to the sodality central office. It numbers 26,000 books, rochures and magazines. Renewed activity was concentrated n weekend conventions and institutes throughout the U.S., irected by Rev. Daniel A. Lord, S.J., national organizer, and ther members of the staff.

Along with emphasis on the spiritual aspect of the Sodality f Our Lady (established in 1563) of honouring the Blessed Mother of God and of intensifying the spiritual life of individual members, the central office encouraged a stronger and more militant apostolate along wider spheres of social and economic studies and projects. The theme for World Sodality Day, observed throughout the world on the second Sunday of May, exemplified this through its 1947 slogan: "To Christ through Mary by an intelligent, militant apostolate."

(D. J. W.)

**Sodium Carbonate.** The United States more than doubled its output of natural sodium carbonate in the decade ending with 1946, reaching 215,625 short tons during that year, against 194,045 tons in 1945. There is a minor production of the natural salt in Canada, which dropped from 286 tons in 1945 to none in 1946 and 136 tons in 1947.

(G. A. Ro.)

**Sodium Sulphate.** The production of natural sodium sulphate in the United States rose from 178,196 short tons in 1945 to 198,781 short tons in 1946. In Canada the natural sulphate output increased from 93,068 short tons in 1945 to 105,919 short tons in 1946 and 136,150 short tons in 1947. (G. A. Ro.)

**Softball.** Both the Fort Wayne, Ind., Zollners in the men's and the Jax Maids of New Orleans, La., in the women's division repeated as victors in the finals of the 1947 national amateur softball championship at Cleveland, O. The Jax Maids, however, turned professional immediately after the tournament and the title was awarded to the Phoenix, Ariz., team. In the All-American Girls' Baseball league, the Grand Rapids, Mich., Chicks won the playoff, defeating Muskegon, Mich., in the final. The Parichy Bloomer Girls of Forest Park, Ill., captured both the league and playoff divisions of the National Girls' Baseball league. (M. P. W.)

**Soil Erosion and Soil Conservation.** In 1947 various countries reported a serious lack of trained soil conservation scientists and technicians for adequate staffing of land conservation programs. Especially was this true where programs were well organized and funds available for supplying landholders with technical assistance in planning farms for permanent conservation agriculture. Scientists and officials in many parts of the world therefore were taking steps to interest colleges and universities in setting up basic training courses in soil science and ecology in connection with agricultural engineering.

Governments of many countries continued to send selected agricultural scientists to the United States to be trained to act as leaders in various phases of land conservation. In all, about 400-500 foreign agricultural specialists and executives visited the United States in the period 1943–47 for training in soil conservation.

**United States.**—During 1947 the work of applying all soil and water conservation practices needed for permanent conservation farming and range management was completed on an additional 21,000,000 ac. About 500,000 farmers were carrying out active conservation plans on more than 132,000,000 ac. at the end of the year. Soil conservation surveys, made by the soil conservation service to provide data and information for use in farm planning, had been completed on more than 250,000,000 ac.

As of Dec. 1, farmers and ranchers had organized 1,956 soil conservation districts including 1,041,960,685 ac. and 4,570,655 farms, or more than three-fourths of the agricultural units in the country and its territories.

Strong emphasis was placed by the soil conservation service on perfecting wind-erosion control methods that could be relied on by farmers to prevent serious soil blowing in case of drought. Specialists in wind erosion had concluded, after nearly two decades of study, that soil blowing could be prevented only if precautionary measures were used at all times—in years of adequate rainfall as well as dry years—as an integral part of the farming system. Extensive research over wide acreages had proved that crop-residue management, usually called stubble-mulch farming, was extremely important in controlling soil blowing. By the end of 1947, farmers were using this method on nearly 20,000,000 ac. in soil conservation districts in the great plains grain belt, in the Pacific northwest and elsewhere in the country.

The value of legumes in stubble-mulch farming was demonstrated by experiments carried out in the great plains over a period of years and reported in 1947. Where the soil was provided with nitrogen through growing legumes and subtilling the residue, yields of crops were better than yields from plowing. Corn grown by subtilling sweet clover residue produced five bushels per acre more than corn grown by plowing. On the other hand, on land farmed without legumes, corn yield did not improve by subtilling, a practice especially designed as a precautionary measure against soil blowing. This showed an important connection between legumes in the cropping system in regions where wind erosion was a serious hazard to agriculture.

Studies in South Carolina showed new promise for successful use of crop residues to protect the soils in the southeast. The experiments demonstrated that residues from preceding crops could be maintained on the surface of the soil during growth of corn and oats without depressing the yield of these crops. During a three-year period, average yield of corn per acre following vetch and rye where the surface mulch method was used was 55 bu. Where the residue was plowed under, the average corn yield was 52 bu. per acre. With no cover crop, the yield was 46 bu. per acre. The average per cents of runoff during the corn-growing season were: 3% where vetch and rye residue was retained as a mulch on the surface; 10.7% where it was plowed under and 30.8% where no cover crop preceded the corn. The corresponding soil losses through erosion in pounds per acre were 320; 1,540 and 5,690.

Studies in the corn belt emphasized the importance of maintaining crop rotations, fitted to the land, in corn production. In Iowa land that had been cropped continuously for 15 years yielded only 27 bu. to the acre, while adjoining land which had been farmed during the same period in a rotation of corn-oats-meadow yielded 86 bu. per acre. A part of the low-yielding, nonrotation land was rehabilitated, and the corn yield was raised to 70.6 bu. per acre by one complete three-year rotation. Thus, a single rotation increased corn production threefold on land that had been excessively used for corn production.

In Wisconsin bluegrass pastures renovated with a field cultivator and seeded to alfalfa-brome grass gave a 60% increase in yield. This plowless method of pasture renovation can be carried out with practically no soil loss, although regulated grazing must be practised to prolong the pasture's productive life. Conservation-needs surveys revealed that more than 50,000,000 ac. of pastureland in the northeastern quarter of the United States should be similarly treated to prevent land damage and improve yields.

The soil conservation service carried on flood-control operations on 11 watersheds during 1947. Construction work in cooperation with landowners consisted of gully control, stabilizing waterways and building small dams and other measures designed to prevent flooding of the upper reaches of streams and to protect upland farmland. The drainage basins on which work was in progress comprised nearly 16,000,000 ac. in New York, Pennsylvania, Maryland, Virginia, West Virginia, Tennessee, Mississippi, Texas, Georgia, Iowa, Oklahoma and California.

During 1947 the facilities of the soil conservation service nurseries were used largely for maintaining foundation seed stocks and for quantity production of about two dozen conservation crop plants developed by plant observational studies in the period 1933–46. The total seed production was 422,000 lb., distributed to soil conservation districts for seed increase. In the southeast 730 five-acre seed blocks of one selected grass were established in soil conservation districts in nine states.

Approximately 83 species and strains of erosion-control plants were advanced to the field-trial and seed-increase stage. By 1947, 18 heretofore undomesticated native grasses had been brought into use in the west, with seed available for soil-conservation purposes. They included such important grazing species as blue grama, buffalo grass, western wheat grass, sand love grass and the bluestems.

**Canada.**—A survey to determine the most serious soil conservation problems of both eastern and western Canada was made during 1946 and reported in 1947 by the national committee on soil conservation. Low fertility, poor drainage and soil erosion were revealed as responsible in large measure for the extremely low crop yields of eastern Canada. Soil loss is heavy on rolling land devoted to grain and intertilled crops, and sheet erosion is common in eastern agricultural areas. Wind erosion in eastern Canada is confined to restricted areas used for production of intertilled crops on sandy soils. At the Ontario Agricultural college (Guelph) a soil-conservation farm-planning program was initiated early in 1947. Other soil-conservation activities in eastern Canada included the making of detailed soil surveys, pasture-improvement programs, soil-erosion experiments to determine actual soil losses under different conditions, field demonstrations on private farms and reforestation of eroded lands by provincial governments and paper companies.

In western Canada, soil conservation work under the Prairie Farm Rehabilitation act consisted of soil-drifting control, regrassing, tree planting, water storage and introduction of conservation tillage methods and crop rotations especially designed to prevent both soil blowing and erosion by excessive runoff. Eighty-nine large irrigation projects and 993 small irrigation projects were in progress, to develop or restore irrigation on about 200,000 ac. Forty-nine community pastures having a total of 1,337,320 ac. had been developed and were in use. At the same time, 18,655 dugouts and 4,178 stockwatering dams had been constructed for water storage in dry areas. Nearly 17,000,000 trees had been planted in the prairie provinces in addition to 713 mi. of field-crop shelterbelts.

**Mexico.**—Benefits from soil and water conservation were reported in 7 of Mexico's 12 soil-conservation districts. In the Arroyozarco district, 919 dams had been constructed to control 90 torrents, and soils of certain valleys flooded seasonally were being stabilized by planting grasses and legumes, and by use of crop rotations especially designed to improve fertility conditions and increase food-crop yields. Alfalfa was being used on approximately 247 ac. for the first time in the area. About 120,000 fast-growing trees had been planted in large gullies.

In the Malintzin district, covering 285,779 ac. of the state of Tlaxcala, 2,200 water-control structures were built in the latter half of 1946 and in 1947 to control and divert floor waters descending from high plateau lands to agricultural valleys. Seed production work had begun on 120 parcels of land to develop and increase seed stocks of trees, grasses and legumes for planting in the volcanic soils of the region. At the same time, in an attempt to reforest the severely eroded slopes of La Malintzin volcano, the soil conservation service of Mexico initiated an extensive tree-planting program. Dune control work was begun in 1947 for fixation of a moving dune approximately 30 mi. in length at Puerto de Vera Cruz in La Carbonera-Acultzingo soil-conservation district.

Throughout central Mexico, terracing, strip cropping and contouring were widely adopted by growers of cultivated crops. Badly eroded land in the region of San José de la Cumbre, treated with terraces for water control and planted to beans, clover, wheat and pasture crops in 1945–46 produced at an increase in yields amounting to $400 per acre in 1947.

**Chile.**—An erosion survey revealed that the coastal cordillera of Chile was severely eroded, the province of Concepción being most affected. In the province of Malleco, 60% of the soil had been seriously damaged by erosion after 70 years of cultivation. In the southern regions with semiarid climate, wind erosion was common and had already transformed the mountainous parts into deserts. Much of this land was bared by fire when rich forests were burned to increase production of sheep; hurricane winds starting in the mountains carried the sands and deposited them on the bare slopes surrounding the lakes of the region. In the Chilean Patagonia the excessive overgrazing of sheep and plowing of grasslands had resulted in wind erosion so serious that all topsoil had disappeared, leaving the white subsoil uncovered.

The ministry of agriculture of Chile, through its soil-conservation agency organized in 1946, launched a program of reforestation and regrassing in an attempt to control erosion in the mountainous and semiarid regions.

**Brazil.**—Soil-conservation methods of improving and protecting cultivated lands were greatly extended in the state of São Paulo during 1947. Excellent contour terracing was done over large areas, with gradient, spacing and waterway systems fitted to various types of slopes and crops. Strip cropping, contouring and gully control, both by structures and planting, were adopted by many farmers. Several million acres of cropland were reported to be under complete soil conservation and, in addition, coffee growers had adopted practices such as contour embankments and cover plantings to control erosion on coffee plantations.

**Australia.**—Co-ordination of soil conservation, water control and forestry agencies of Australia was announced in Oct. 1947. Approximately £30,000,000 to be used over a period of years had been allocated for the work, £100,000 being spent during 1947. Works already undertaken included building of roads, catchment dams and diversion weirs with necessary channels to store and divert needed water to farmlands, and complete soil-conservation plans for individual farms and ranches in river valleys being treated with water control and supply structures.

Both wind and water erosion were found to be more serious in South Australia than in any other Australian state. Contour furrowing had been adopted by many farmers in water-eroded areas and was particularly effective on the Calca Soil Conservation station, where large areas were reclaimed in 1946 and 1947. Wind erosion, an even greater problem, was being controlled on demonstration farms by planting cereal crops and grasses for permanent pasture.

A law authorizing farmers to include costs of applying soil-conservation practices in income-tax deductions, passed by the Australian congress in 1946, proved an important impetus to the national soil-conservation program throughout 1947.

**Africa.**—A soil-conservation division was established in the department of agriculture of Belgian Congo in 1947. A program to control erosion by gullying was launched among native farmers, and agriculture students were being trained to act as conservation farm planners in the new agency.

In Southern Rhodesia, an extensive grassland improvement program, embracing the whole province of Mashonaland (more than 50,000,000 ac. in the eastern half of the colony) was started in 1947. Research studies were begun to determine run-off and soil losses with different types of vegetal cover and treatment. Rainfall percolation and soil-moisture studies also were initiated.

**Europe.**—During 1947 agricultural officials from ten European countries visited the United States for soil conservation training and observation of methods adaptable to European cropland. They represented the following countries: Italy, Switzerland, Spain, Sweden, Yugoslavia, Belgium, France, Portugal, Greece and Cyprus. A survey of farming conditions in marginal land areas of Greece, made by specialists of the U.S. soil conservation service at the request of the Greek government, revealed that advanced soil erosion was responsible in large measure for low yields of food crops throughout much of the country. (*See* also AGRICULTURE; AQUEDUCTS; DAMS; IRRIGATION; METEOROLOGY.) (H. H. BE.)

**Solar System:** *see* ASTRONOMY.
**Somaliland, British:** *see* BRITISH EAST AFRICA.
**Somaliland, French:** *see* FRENCH OVERSEAS TERRITORIES.
**Somaliland, Italian:** *see* ITALIAN COLONIAL EMPIRE.

## Sophoulis, Themistocles

(1860– ), Greek statesman, was born on Nov. 25 at Vathy, island of Samos (then belonging to the Ottoman empire). An archaeologist and man of letters by profession, he took a prominent part in local politics, heading the patriotic opposition to the Greek governor appointed by the Porte. After the union of Samos with Greece in 1913, he was elected to the Greek parliament where from that time he continuously represented his native island. In the same year he was appointed minister of the interior. A staunch supporter of the Liberal leader, Eleutherios Venizelos, Sophoulis followed him at the time of the Salonika revolution of 1916, returning to Athens after King Constantine had been removed from the throne. He was elected president of the chamber in 1917, a post which he held till the defeat of the Liberal party at the elections of Nov. 1, 1920. In 1924 after Venizelos' withdrawal from politics and the proclamation of the republic, Sophoulis was for a few months prime minister. During the period from 1924 to 1936 he was repeatedly re-elected president of the chamber. After Venizelos' second withdrawal from politics in 1935, Sophoulis succeeded him as leader of the Liberal party. During the period of the Metaxas dictatorship (1936–40) Sophoulis abstained from politics. In 1944 he was arrested by the Germans on suspicion of being in correspondence with the Greek government-in-exile and was detained in the Haidari concentration camp near Athens. After the liberation, he took office as prime minister of a republican cabinet on Nov. 22, 1945. He resigned after the elections held on March 31, 1946, had given the victory to the Populist (Conservative) party. On Sept. 7, 1947, he again assumed the premiership in a coalition government composed of Liberals and Populists.

## Sorghum.

U.S. production of all sorghum for grain was estimated at 95,609,000 bu., against a total of 106,941,000 bu. in 1946 and the 92,124,000 bu. average for 1936–45. It was the smallest crop after 1940. Most of the decline was in Texas, which ordinarily had amounted to two-thirds of the nation's total; the Texan crop was only 68,313,000 bu. compared with 73,742,000 bu. in 1946.

The total acreage was 5,606,000 in 1947, more than 20% below the 6,773,000 ac. grown in 1946. The yield was 17.1 bu. per acre compared with the average of 15.2 bu., the smaller crop resulting primarily from the smaller acreage. The Arizona crop, while small (2,132,000 bu.), is important because it is mostly used as certified seed. Prices of sorghum grain for feed were around $2 per bushel in January and advanced steadily to $3.29 in August. Exports of sorghum grains amounted to a record of about 25,000,000 bu. in 1946–47. The amount used for alcohol and other nonfeed purposes was small in 1947. (*See* also SYRUP, SORGO, AND CANE.) (J. C. MS.)

**South Africa, British:** *see* BRITISH SOUTH AFRICAN PROTECTORATES.

## South Africa, The Union of.

A self-governing dominion of the British commonwealth of nations. The four provinces of which it consists, the Cape of Good Hope, Natal, the Transvaal and the Orange Free State, extend from the southernmost point of the African continent to the Limpopo in the north. The former German colony of South-West Africa (area 317,725 sq.mi., pop. est. 1941: European 33,600; Bantu and coloured [mixed] 287,700) is administered under mandate as an integral part of the union, but this territory had not been incorporated as a province; the United Nations twice invited South Africa to prepare a trusteeship agreement in respect to it. (*See* TRUSTEE TERRITORIES.) Area: 472,550 sq.mi. (incl. Walvis bay, 574 sq.mi.); pop. (1947 census): 11,391,949 (Europeans 2,372,690; Bantu 7,805,515; mixed 928,484; Asiatic 285,260). Chief towns (pop. census 1946): Capetown (seat of legislature, 454,052); Pretoria (seat of government, 236,367); Johannesburg (727,743); Durban (357,304); Port Elizabeth (146,231). Official languages: English, Afrikaans. Religion: European population: Christian 95.5% (Dutch Reformed Church 55%; Anglican 19%; Methodist 6%; Presbyterian 5%; Roman Catholic 5%, etc.); non-European population: 51% Christian, the remainder Hindu, Mohammedan and Buddhist. Governor General: Maj. Gideon Brand van Zyl; premier: Field Marshal Jan C. Smuts.

**History.**—The outstanding domestic event of 1947 was the visit to South Africa of King George VI, Queen Elizabeth and the Princesses Elizabeth and Margaret. During the early part of the year, the preparations and the tour itself eclipsed all else. The visit was received with tremendous enthusiasm throughout the country, and crowds flocked to see the royal family in every part of the land.

The development of the new gold fields in the Orange Free State, combined with the prosperity of the country, the growth of new industries and the shortage of manpower, intensified immigration, which became sponsored by the government. The South African Immigration council was established early in the year with a target of 1,500 immigrants a month, and special ships were chartered to carry them. Others travelled from Europe under their own arrangements, some making the journey overland. During the year the government announced its intention of deporting from the Union and South-West Africa 236 Germans, whose removal had been recommended by a judicial commission, because of their alleged nazi sympathies.

In common with many other countries, South Africa had its labour troubles; but in spite of strikes, particularly among the gold miners and building artisans, industry forged ahead. The National Housing commission reported 2,200 houses built each month throughout the country. The South African Industries

KING GEORGE VI and an African queen mother exchanging handshakes at Goedegun, Swaziland, during the royal tour of South Africa in Feb.–April 1947. Behind the king, left to right, are: Princess Margaret Rose, Queen Elizabeth and Princess Elizabeth

fair held in Durban in September was the first of its kind restricted to articles made in South Africa and proved that local industries had made great strides in the past few years.

Social security schemes were developed, including the implementation of the Unemployment Insurance act, passed in 1946, though this act still provoked strong criticism. The National War Memorial Health foundation was established as a memorial to South Africa's armed forces during World War II, and a number of health and housing schemes were launched, mainly to benefit non-Europeans.

Non-European problems received much publicity and attention during the year. The increasing industrialization of the towns called for more labour, which in turn increased the influx of natives from the country districts and from neighbouring territories to the north. Lack of housing facilities led to overcrowding, crime and ill feeling between races. The prime minister, Field Marshal Jan Smuts, announced a number of measures designed to increase the responsibility of the Natives Representative council and other native bodies, and further developments were expected to follow the report of the Fagan Native commission, to be made early in 1948.

In the field of arts and culture, a national theatre was founded, and the Afrikaans language theatre reached new heights with its first presentations of Shakespeare and Ibsen in Afrikaans. Discoveries were made of important fossil remains in the limestone caves of the western Transvaal, and of rock-paintings in South-West Africa and various parts of the union.

*Foreign Affairs.*—The status of South Africa's Indians was again brought before the general assembly of the United Nations in 1947. Following the passing of the Asiatic Land Tenure and Representation act, which restricted to certain areas the purchase of land by Indians but at the same time granted them representation in the union parliament and Natal provincial council, India withdrew its high commissioner and imposed economic sanctions against the union. Field Marshal Smuts asked Pandit Jawaharlal Nehru to allow the high commissioner to return for consultation, but was refused. Members of the South African Indian congress demanded immediate equality with Europeans.

The future of South-West Africa was discussed again by the general assembly. Early in the year Field Marshal Smuts announced that, in deference to the United Nations, the Union would not incorporate this territory, but would respect the inhabitants' wishes as far as possible by continuing to administer it under the League of Nations mandate, making an annual report to the United Nations. When the general assembly met, India attacked South Africa for failing to submit a trusteeship agreement for South-West Africa, as requested by the general assembly in 1946.

In October it was announced that South Africa had agreed to lend Britain gold to the approximate value of £80,000,000 to help it to weather the serious postwar economic crisis.

An air service was inaugurated between the Union and the United States and better services were provided to Europe; shipping services between South Africa and most parts of the world improved considerably during the year. (J. Md.)

**Education.**—In 1941: state and state-aided primary and secondary European schools 33,662, scholars 388,925; non-European schools 5,229, scholars 678,161; universities, average number of students 11,801.

**Banking and Finance.**—Revenue (1946–47) £SA133,935,000; expenditure (1945–46) £SA131,358,216; public debt (March 31, 1946) £SA582,855,931; notes in circulation (March 31, 1946) £SA66,000,000; gold reserve (March 31, 1946) £SA123,000,000; exchange rate (1946) £SA1 = £1 sterling = 403 U.S. cents.

**Trade and Communication.**—External trade (1946): exports (including government stores, specie, gold bullion, wool, exported bunker coal and ships' stores) £SA95,482,129; re-exports £SA3,071,142 plus £SA1,263,947 (to South-West Africa and Northern Rhodesia); imports £SA214,437,667. Communication and transport: roads fit for motor traffic (1947) c.100,000 mi.; railways, including South-West Africa (March 31, 1945), 13,483 mi.; airways, including South-West Africa (Dec. 1945–May 1946): passengers carried 7,936; mileage flown 285,559; shipping (March 31, 1945): tonnage cargo landed 3,162,632, shipped 4,213,575, transshipped 207,667. Motor vehicles licensed (Dec. 31, 1940): cars and taxis 317,958; vans and trucks 51,215; tractors 1,044; cycles 21,725; wireless receiving sets, effective licences (end of 1945) 373,411; telephones, instruments in use (1940) 202,753.

**Agriculture, Manufacture and Mineral Production.**—In 1944–45: maize 17,870,000 bags of 200 lb. each; wheat 3,373,430 bags of 200 lb.; potatoes 2,500,000 bags of 150 lb.; oats (purchased) 96,236 bags of 150 lb.; barley (purchased) 448,913 bags of 150 lb.; groundnuts 120,000 bags; deciduous fruit 67,634 short tons; dried fruit (1945) 19,000 short tons; tobacco (1944) 23,500,000 lb. Virginian, 533,000 lb. Turkish; cane sugar refined (1945–46) 553,174 bags of 200 lb.; sheep (1943) 37,888,043; cattle (1943) 13,068,414; wool (1945–46 est.) 650,000 bales. Total agricultural production (1944–45) £SA100,319,000. Industry and labour (1942–43): establishments 9,965; employees (May 1947): European 96,123; native 161,612; employment index (average, 1929 = 100): May 1947 = 151.8; industrial production £SA177,000,000. Mineral production (Jan.–May 1947, monthly average): gold 855,896 oz.; coal 2,207,000 short tons; silver 91,550 oz.; platinum 4,977 oz.; osmiridium 514 oz.; copper 2,678 short tons; tin concentrates 53 short tons.

**South America:** *see* ARGENTINA; BOLIVIA; BRAZIL; BRITISH GUIANA; CHILE; COLOMBIA; ECUADOR; PARAGUAY; PERU; URUGUAY; VENEZUELA.

## South Carolina.

A south Atlantic state of the United States, 8th of the original 13 to ratify the constitution in 1788; known as the "Palmetto state." Area: 31,055 sq.mi.; 461 being inland water; pop. (1940) 1,899,804; white 1,084,308; Negro 814,164; others 1,332; 75.5% rural; 0.3% foreign-born. Capital, Columbia (62,396). Other cities: Charleston (71,275); Greenville (34,734); Spartanburg (32,249). The estimated population of the state on July 1, 1947, was 1,918,000.

**History.**—Gov. J. Strom Thurmond was inaugurated in Jan. 1947, for a four-year term. His proposals for extensive reorganization of the state government passed the house and at the close of the year were before the senate. On July 12, 1947, the U.S. district court in Charleston annulled the rule of the Democratic party denying Negroes the right to vote in its primaries; this was confirmed on Dec. 31 by the U.S. circuit court of appeals, although all laws regulating primaries had been repealed n 1944. The federal district court denied the petition of a Negro to be admitted to the University of South Carolina law chool, but ruled that he must be admitted if by the beginning of the next school year the state had not provided legal educa-ion at its state Negro college, a ruling still awaiting decision on ppeal at the end of the year. The state meanwhile provided aw education at its Negro college, and also paid tuition at medical colleges outside the state for South Carolina Negroes. The appointment of Col. Wyndham M. Manning as superin-endent of the penitentiary led to greatly improved administra-ion, including emphasis on rehabilitation. Concurrently, the overnor stopped the "leaves of absence" for convicts. In May, 28 cab drivers accused of lynching a Negro who had robbed and killed a cab driver were acquitted, despite several written confessions and the earnest efforts of the prosecuting attorney.

**Education.**—Nine months' support annually for public schools was guaranteed by the state (many districts continuing to levy additional axes). Jesse T. Anderson was state superintendent of education. For he year ending June 30, 1947, enrolment in white elementary schools was 178,686 (increase of 815); in Negro elementary schools 179,454 (in-crease of 3,428); in white high schools 71,211 (increase of 1,858); in Negro high schools 27,604 (increase of 2,610); white and Negro teach-ers, respectively, numbered 9,655 and 6,304; expenditures for white schools $22,278,658; for Negro schools $7,349,749, representing in-creases since the school year 1930–31 of 88.75% and 339.88% re-spectively. The salary scale, based on preparation and experience, was he same for all schools.

**Social Insurance and Assistance, Public Welfare and Related Problems.**—In the year ending June 30, 1947, federal allocation for needy persons totalled $4,834,394, to which the state added $3,195,627 (plus $546,608 for the physically and mentally handicapped). A total of $6,199,957 went to 30,176 aged; $1,517,720 to 15,742 dependent children; and $305,343 to 1,199 blind. Total relief disbursements were $8,023,021. Some counties maintain sparsely inhabited alms houses. The state un-employment trust fund, contributed wholly by employers, totalled $46,-472,513. Payments to 16,552 unemployed during the year ending June 30, 1947, totalled $2,113,064. Patients in the state hospital (for the mentally diseased) June 30, 1947, were 4,928; in the school for the feeble-minded 971; prisoners in the state penitentiary and on state farms 1,188; reformatory for Negro boys 197; white girls' reformatory 88; reforma-tory for white boys (June 30, 1947) 191; legal executions during the year ending June 30, 1947, 11.

**Communications.**—Paved highways on June 30, 1947, totalled 8,427 mi.; mileage under the highway department 15,113; funded highway debt $44,815,763 (being steadily reduced); railroads 3,563 mi. Eastern, Delta, National and Southeastern air lines cross the state.

**Banking and Finance.**—On June 30, 1947, there were 23 national banks (plus 17 branches), 96 state banks (plus 5 branches), including 1 private bank, and 90 cash depositories with capital account, deposits and resources, respectively, as follows: national $17,773,000, $389,973,000 and $409,162,000; state banks and depositories $14,412,368, $236,179,526 and $250,811,223. Resources of federal building and loan associations were $54,946,787; of state building and loan associations $20,337,324. The state debt on June 30, 1947, was $48,213,097; total collections in the year ending that date $136,602,434; the estimated surplus on the same date was $4,728,000.

Federal income taxes for the year ending June 30, 1947, totalled $158,-743,937; other federal internal revenues $19,441,563. Exports amounted to $25,652,402; imports $6,270,253; and duties on imports $311,543 for the year ending June 30, 1947.

Farm real estate mortgage debt Jan. 1, 1946, totalled $39,636,000 as compared with $45,948,000 on Jan. 1, 1940.

**Agriculture.**—The 33 principal field and truck crops for the year 1947 were valued at $334,170,000, about $28,000,000 less than for the banner year 1946. Acreage (4,433,000) and 166,000 less than in 1946, and 355,000 less than for the ten-year average of 1936–45.

The value of commercial truck crops was $9,088,000, a sharp reduction from 1946.

**Manufacturing.**—The value of manufactures for the year ending June 30, 1947, was $1,557,240,138 as against $1,111,493,397 for the previous year. Employees numbered 168,091 as against 156,560 the year before.

**Mineral Production.**—Minerals produced (chiefly stone and clays, especially kaolin) during the year ending June 30, 1947, were valued at $2,-931,437 as against $4,570,778 in the previous year. (D. D. W.)

Table I.—*Leading Agricultural Products of South Carolina, 1947 and 1946*

| | 1947 | 1946 |
|---|---|---|
| Corn, bu. | 28,080,000 | 27,493,000 |
| Wheat, bu. | 4,356.000 | 2,706,000 |
| Oats, bu. | 19,630,000 | 20,097,000 |
| Barley, bu. | 624 000 | 546,000 |
| Rye, bu. | 132 000 | 130,000 |
| Hay, tons | 382,000 | 449,000 |
| Irish potatoes, bu. | 2,440,000 | 3,576,000 |
| Sweet potatoes, bu. | 5,940,000 | 6,090,000 |
| Tobacco, lb. | 153,000,000 | 168,200,000 |
| Cotton, bales | 640,000 | 697,000 |
| Cotton seed, tons | 260,000 | 281,000 |
| Peaches, bu. | 6,630,000 | 5,994,000 |
| Pecans, lb. | 2,550,000 | 1,406,000 |
| Peanuts, lb. | 16,900,000 | 16,900,000 |

Table II.—*Products of Principal Industries of South Carolina, 1947 and 1946*

| | Value 1947 | Value 1946 |
|---|---|---|
| Textiles | $1,126,270,630 | $799,525,720 |
| Lumber products (barrels, boxes, baskets, veneering, paper and pulp, furniture, woodwork) | 111,661,207 | 70,951,519 |
| Electricity | 30,397,001 | 26,249,958 |
| Clothing, including knitted | 52,236,860 | 30,932,240 |
| Fertilizers | 27,819,036 | 21,005,869 |

## South Dakota.

A north-central state of the United States, admitted as the 40th state on Nov. 2, 1889, popularly known as the "Coyote state." Area, 77,047 sq.mi., of which 511 sq.mi. are water; population (1940), 642,961, with 158,087 listed as urban and 484,874 as rural; Indian population, 23,347. The federal census bureau estimated the population on July 1, 1947, at 564,000. The state census taken during 1945 revealed a population of 589,802. Capital, Pierre (4,322 in 1940). Principal cities: Sioux Falls (40,832), Aberdeen (17,-015), Rapid City (13,844), Huron (10,843) and Mitchell (10,633).

**History.**—Important legislation enacted during the 60-day legislation session, ending March 8, 1947, raised the governor's salary from $3,000 to $8,500, and provided salary increases for other constitutional officers; prohibited the governor from serving more than two consecutive terms; permitted women to serve on juries; authorized submission of a constitutional amendment which would permit a $30,000,000 bond issue for a veterans' bonus; and placed restrictions on labour unions by outlawing the use of threats in the solicitation of union membership, by permitting unions to sue or be sued for damages and by limiting picketing activities.

State officials in 1947 included: George T. Mickelson, governor; Sioux K. Grigsby, lieutenant governor; Sigurd Anderson, attorney general; Miss Annamae Riff, secretary of state; Clarence Buehler, treasurer; and J. F. Hines, superintendent of public instruction.

**Education.**—The school census, ages 6–21, was 154,928 in 1945–46 as compared with 155,420 in 1944–45. The enrolment was 84,826 in elementary schools and 29,005 in high schools. Total expenditures were $15,926,980.

**Social Insurance and Assistance, Public Welfare and Related Programs.**—During the calendar year 1946 the state department of social security distributed $4,267,280 among 12,685 persons in old-age assistance; $846,134 to 1,696 families as aid to 4,173 dependent children; and $64,290 for the needs of 213 blind persons. Eight penal and charitable institutions were in operation on a legislative appropriation of $1,709,745 for the fiscal year 1947–48.

Unemployment benefit payments were allotted during 1946 to 2,092 claimants for a total of $185,730 at an average weekly rate of $13.13. About 11,000 unemployed veterans received a total of $2,103,000 for readjustment allowance as provided by the Servicemen's Readjustment act.

**Communications.**—The state maintained a highway system of 5,942 mi. which in 1946 included 2,853 mi. of pavement and 2,804 mi. of gravel surface at a cost of $3,146,247. There were 3,966 mi. of railroad in operation in 1946. Telephones reached a total of 108,688 of which 35,716 were classified as rural.

**Banking and Finance.**—There were 35 national banks in operation on Dec. 31, 1946, with total assets of $245,793,000 and total deposits of $234,503,000. The 135 state banks and trust companies on June 30, 1947, had resources of $242,794,187 and deposits of $231,343,970. Nine building and loan associations on June 30, 1947, reported total resources of $4,124,900.

Total receipts for the state treasury for the fiscal year ending June 30, 1947, were $43,699,742; disbursements were $40,753,748. The bonded indebtedness was $20,314,000. Federal internal revenue collections for the same period totalled $51,795,756, of which amount $45,753,067 was derived from the income tax.

**Agriculture.**—Despite unfavourable weather conditions during July and August which resulted in a sharply reduced corn crop, the cash income from farm crops and livestock remained at a high level during 1947.

*Principal Agricultural Products of South Dakota, 1947 and 1946*

| Crop | 1947 (est.) | 1946 | Crop | 1947 (est.) | 1946 |
|---|---|---|---|---|---|
| Corn, bu. | 77,840,000 | 120,300,000 | Flaxseed, bu. | 5,640,000 | 3,440,000 |
| Wheat, bu. | 55,827,000 | 53,197,000 | Potatoes, bu. | 1,610,000 | 2,842,000 |
| Oats, bu. | 96,752,000 | 100,398,000 | Hay (tame and wild), short tons | 3,162,000 | 2,776,000 |
| Barley, bu. | 31,027,000 | 30,294,000 | | | |

**Mining.**—The total value of mineral substances produced in 1946 was $17,968,270. The state ranked second in gold production valued at $10,928,645; second in bentonite valued at $1,143,858; second in mica valued at $72,124; and third in feldspar valued at $583,557.

(H. S. S.)

**Southern California, University of.** This metropolitan university which is operated under a private foundation and which was founded in Los Angeles, Calif. (where it is still located), comprised in 1947 a total of 26 schools and colleges.

The 1947 enrolment exceeded all previous records. The housing situation continued to be acute despite special efforts to meet the problem. The alumni numbered 52,000 with about 7,500 being members of the general alumni association.

The new president of the university, Fred D. Fagg, Jr., previously vice-president of Northwestern university, Evanston, Ill., assumed the administrative and other functions of his office on Sept. 1. Capt. Burnett K. Culver became commanding officer of the Naval Reserve Officers Training corps. Prof. Sheldon D. Elliott of the school of law succeeded William G. Hale as dean of that school. Dr. Lewis F. Stieg became director of the graduate school of library science. The college of dentistry celebrated its 50th anniversary. New departments were organized, namely, biochemistry and nutrition, aeronautical engineering and Slavic studies.

A graduate department was organized in the school of medicine and a similar development was initiated in the school of dentistry. The number of graduate students enrolled in the university exceeded 3,100, with 1,469 being registered in the graduate school and the remainder being distributed among the various professional schools, university college and civic centre divisions. Twenty-nine departments and divisions give the Ph.D. degree and 51 departments and divisions the various masters' degrees. New masters' degrees were authorized in aeronautics, aeronautics and guided missiles, industrial chemistry, industrial design and medicine; new Ph.D. degrees were authorized in mathematics and physical education. Numerous research projects received special financial aid from foundations and government sources. These included projects in the college of engineering, departments of chemistry, biochemistry, philosophy, physics and public administration. Extensive additions were made to the university and departmental libraries. (For statistics of endowment, enrolment, faculty, library volumes, etc., *see* UNIVERSITIES AND COLLEGES.) (E. S. Bs.)

**Southern Rhodesia:** *see* RHODESIA, SOUTHERN.

**South-West Africa:** *see* SOUTH AFRICA, THE UNION OF; TRUSTEE TERRITORIES.

**Sovereigns, Presidents and Rulers:** *see* PRESIDENTS, SOVEREIGNS AND RULERS.

**Soviet Republics:** *see* UNION OF SOVIET SOCIALIST REPUBLICS.

**Soviet Union:** *see* UNION OF SOVIET SOCIALIST REPUBLICS.

**Soybeans.** The U.S. crop of soybeans in 1947 was the smallest since 1941, although about 50% above the ten-year (1936–45) average. The 1947 crop was estimated at 181,362,000 bu., 10% below the record crop of 201,275,000 bu. harvested in 1946. The acreage was increased 11% in 1947 to 11,125,000 ac. but the yield declined to 16.3 bu. per acre compared with 20.5 bu. in 1946 and the ten-year average of 18.2 bu. per acre. Lower yields in Illinois and Iowa, two of the three leading soybean states, reduced their crops sharply. Indiana, second to Illinois in 1947, had yields about equal to those of 1946. The Minnesota crop was better, but that of Missouri declined.

Prices of soybeans ranged higher through the year, advancing from an average of $2.93 per bushel in January to $3.67 in March and then levelled off at $3.00, later advancing again to $3.67 per bushel in December. These prices compared with an average of 95 cents per bushel for the prewar period of 1935–39.

*U.S. Soybean Production by Leading States, 1947, 1946 and 10-Year Average, 1936–45*

(In thousands of bushels)

| State | 1947 | 1946 | 10-yr. Average | State | 1947 | 1946 | 10-yr. Average |
|---|---|---|---|---|---|---|---|
| Illinois | 65,196 | 78,020 | 50,239 | Arkansas | 3,396 | 5,458 | 1,787 |
| Indiana | 28,176 | 26,106 | 16,294 | Kentucky | 1,908 | 1,566 | 583 |
| Iowa | 26,310 | 35,604 | 20,115 | Kansas | 1,887 | 2,178 | 1,070 |
| Ohio | 17,575 | 16,254 | 13,423 | Virginia | 1,425 | 1,106 | 832 |
| Minnesota | 13,800 | 10,675 | 2,025 | Mississippi | 1,330 | 1,050 | 806 |
| Missouri | 9,900 | 14,360 | 4,194 | Michigan | 1,292 | 1,200 | 1,248 |
| N. Carolina | 3,915 | 2,862 | 2,219 | Tennessee | 930 | 810 | 378 |

The government-support price, at 90% of parity, was $2.06 per bushel in October compared with the market price of $3.11 per bushel. No surplus of soybeans or soybean oil was in prospect because of the small world supply of oil seed. The Manchuria crop, which amounted to about 85,000,000 bu. for export in prewar years, furnished less than 2,000,000 bu. surplus during the first nine months of 1947.

The goal for 1948 was set at about the same acreage as was harvested in 1947 and more than 260% of the prewar acreage. (*See* also CHEMURGY.) (J. C. Ms.)

**Spaak, Paul-Henri** (1899– ), Belgian statesman, was born on Jan. 25, in Brussels. A law graduate, he practised in Brussels and was elected to the chamber of deputies on the Socialist ticket. In 1936, when Spaak was foreign minister in the Van Zeeland government, he conducted negotiations to secure Belgium's release from the Locarno pact and the Anglo-French-Belgian agreements; he then believed that Belgium could remain neutral in the event of war.

He fled to England after the German invasion in 1940, joining the government-in-exile as foreign minister and minister of labour. Retained as foreign minister in the Van Acker government established on Belgian soil in Feb. 1945, he headed the Belgian delegation to the United Nations conference in San Francisco and on Jan. 10, 1946, he was elected president of the general assembly.

After the fall of the Huysmans government, Spaak formed a new government March 19, 1947, retaining in addition to the premiership the foreign affairs portfolio. In the summer of that year, he represented Belgium at the 16-nation Paris Economic conference. The following autumn, he attended the United Nations general assembly in New York and joined the western bloc in its demands that a U.N. border-watch committee be set up in the Balkans. Toward the end of 1947, the issue of King Leopold's return to the throne was resurrected in the Belgian parliament; Spaak, however, opposed the king's return and won a vote of confidence on his stand, Dec. 10.

**Spaatz, Carl A.** (1891– ), U.S. army air officer, was born June 28 in Boyertown, Pa. He was graduated from West Point in 1914. During World War I he commanded a pursuit squadron in the St. Mihiel offensive. He was chief of staff to Gen. Henry H. Arnold in 1941, and in July 1942 he was named U.S. air commander in Europe. Early in 1943 he was shifted to the Mediterranean theatre as commander of the 12th U.S. air force and of the Allies' Northwest Africa air forces. On Dec. 24, 1943, Pres. Franklin D. Roosevelt announced the appointment of Gen. Spaatz as commander of "the entire American strategic bombing force operating against Germany" from all directions. During 1944 and 1945, under his command, U.S. air forces brought all points in Europe within range of Allied bombers.

Spaatz was named for promotion to the temporary rank of full general, March 13, 1945. He represented the U.S. at the German surrender ceremonies in Berlin, May 8. The war department announced his appointment July 5 to commander of the newly created U.S. strategic air force in the Pacific to direct uperfortress blows against Japan.

Gen. Spaatz succeeded Gen. Arnold as commander of all army ir forces (Jan. 24, 1946), and after the air force was given entity as a separate branch of the armed services, he was named y Pres. Truman on Sept. 25, 1947, as air force chief of staff. An advocate of a "stronger America," Spaatz was concerned ver the postwar decline of U.S. air strength, and told the President's Air Policy commission, Nov. 18, that the U.S.S.R. had 4,000 military aircraft.

**Spain.** A country of western Europe, bounded on the north by the Bay of Biscay and France, on the west by Portugal and the Atlantic, and on the south and east by the Mediterranean. Area: (including Balearic and Canary Islands) 94,945 sq.mi.; pop. (est. 1946) 27,246,000. Chief towns (pop. st. 1944): Madrid (cap. 1,140,621); Barcelona (1,108,961); Valencia (508,072); Seville (347,997), Zaragoza (Saragossa) (206,488); Málaga (258,598); Bilbao (208,347). Religion: mainly Roman Catholic. Caudillo, or chief of state: General Francisco Franco.

**History.**—At the end of 1947 General Franco was to all appearances entrenched in power more firmly than ever. The United Nations resolution, passed in Dec. 1946, recommending he withdrawal of ambassadors from Spain, caused a strong nationalist reaction there, and the masses, well prepared by months of intensive propaganda, were easily brought to patriotic fervour by the lavish use of such slogans as "Hands off Spain." The demonstrations of Dec. 9–10, 1946, held all over the country, were reinforced by the tumultuous welcome given in Jan. 1947 to Pedro Radio, the newly appointed ambassador from Argentina, a country which did not carry out the U.N. recommendations, to Eva Perón, wife of the Argentine president, who made an official visit to Spain in June, and to the crew of an Argentine training ship, which paid an official visit to Spain in August and conveyed back to Argentina the bodies of the parents of the liberator, José de San Martín. There was possible political significance, too, in the ceremonial transference from Madrid to Jerez de la Frontera of the remains of Gen. Primo de Rivera, dictator of Spain from 1923 to 1930.

Negotiations between General Franco and the Monarchists finally broke down; and, as the "Republican government in exile," reconstructed in February under Rodolfo Llopis, also broke down in August (to be reconstructed again on Aug. 23 under Alvaro del Albornoz) upon the resignation of its Communist member, the chief hope of the emergence of a new regime seemed to lie in the conversations between monarchists and right-wing Socialists led by Indalecio Prieto, which went on at intervals throughout the year. General Franco made the next move, however, by publishing on April 1, the eighth anniversary of his victory over the Republicans, the text of a "Law of Succession" which subsequently was unanimously approved by the cortes, and, in July, by a referendum of the people, 14,145,163 of whom (82.34% of the total electorate) voted in its favour and only 722,650 against it. The document described Spain as a kingdom, with General Franco as chief of state. He was to be "assisted" by a "Council of the Kingdom"; in case of his death or incapacity, he would be succeeded by a "person of royal blood" jointly proposed by the council and the government, who must be accepted by at least two-thirds of the cortes. Failing such a person, Spain would be governed by a council of regency pending the election of a regent. The chief of state might at any time name his successor, who must also have the assent of two-thirds of the cortes.

A week after the publication of the law, the pretender to the throne, Don Juan de Borbón, attacked it, in a manifesto addressed to the Spanish people, as "completely opposed to the system by virtue of which the succession to the Spanish crown has been governed throughout history" and an attempt "to turn the dictatorship of an individual into rule for life." He was ready, when the moment came, to agree to an "unconditional transfer of authority," but regarded the law as "valueless and void by its very origin." It was probably symptomatic of General Franco's feeling of security that he should have allowed this manifesto to be printed by every newspaper in Spain together

SPANISH PAGEANT staged at Madrid to honour Señora Perón, wife of the president of Argentina, during her visit to the Spanish capital in June 1947

with a government-inspired leading article attacking it. In September he announced that he proposed to assume the traditional prerogative of the head of the Spanish state to confer "grandeeships" (*grandezas de España*) and other titles of nobility, and it was believed that the object of this move was to divide the Monarchists by creating a new aristocracy favourable to a Carlist royal house.

Serious strikes, organized by the Basque resistance movement, which took place in northern Spain in May, were admitted by the foreign ministry to have affected 40% of the workers in the Bilbao area—a proportion increased officially to 75% over a much wider region. The strikes began with the observance of May day, despite a government ban, by about 50,000 workers, and were extended by the refusal of the civil governor of the province to agree to their readmittance, except on their special application and with loss of privileges. Eventually the deadlock was solved by the sympathy of many of the employers with the men and within a fortnight all was normal.

Economically there was little change. An exceptionally good olive harvest greatly eased the position with regard to olive oil, but the third-class bread ration (the largest, except that allowed to heavy manual workers) was cut in June, together with the tobacco ration. In August the prices of each class were raised, together with the prices of newspapers throughout the country, and in October it was announced that the daily bread allowances of the three regular classes would have to be reduced from 250g., 150g. and 100g., respectively, to 150g., 120g. and 75g. Gasoline restrictions were imposed in October, in the form of a decree forbidding private cars to be on the road for at least two days a week. In August, probably because of the phenomenal heat, a catastrophe occurred at Cadiz, when about 150 people were killed and 5,000 injured, in a series of explosions in the shipyards and in a submarine defense depot. Early in September a disaster of less magnitude, difficult to explain except as deliberate terrorism, occurred in the explosion of an underground powder magazine at Alcalá de Henares.

On March 28 a new monetary agreement was signed between Spain and Great Britain, each country to hold the other's currency up to £2,000,000 and Spain to hold an additional sum to cover the probable balance of payments in its favour. In July this was supplemented by a further agreement in which Spain undertook not to restrict the acceptance of sterling in the Spanish monetary area as settlement of payments for current transactions by residents outside that area.

In May the International Civil Aviation organization, during its first assembly at Montreal, Que., resolved to expel Spain from membership, subject to ratification of the resolution by two-thirds of the member states, on the ground of Spain's exclusion from the United Nations.

In the year 1947 fell the 400th anniversary of the birth of Miguel de Cervantes Saavedra, and during the year there were celebrations and commemorations throughout Spain. An international Cervantine congress (*Asamblea Cervantine de la Lengua*), attended by many foreign delegates, held its first series of sessions in October. (*See* also FASCISM.) (E. A. P.)

**Education.**—(1945): primary schools 45,148, scholars 2,530,728; secondary, scholars 185,644; commercial, scholars 53,214; technical, scholars 6,334; fine arts, scholars 9,379; trades, scholars 25,745; universities 12, students 43,498.

**Finance.**—Revenue (est. 1947) 12,963,523,857 pesetas; expenditure (est. 1947) 11,358,827,402 pesetas; gold reserve (1947) U.S. $111,000,000; national debt (1946) 43,977,876,800 pesetas. Rate of exchange: 1 peseta = 9.132 U.S. cents.

**Trade and Communication.**—Imports (1945) 869,048,000 pesetas; exports (1945) 880,656,000 pesetas. Communications: railways (1945), length of line 10,878 mi., including 768 mi. electrified; roads open to traffic (1946) 79,672 mi., mileage of regular road transport services 46,857 mi.; airways (1946) planes arrived 8,186, left 8,181, totals arrived, left and in transit: passengers 226,791; mails and newspapers 495 short tons; freight 4,008 short tons. Shipping: total Spanish tonnage (1945) 1,037,938. Number of telephones in service (1946) 451,819; exchanges 3,423.

**Mineral and Agricultural Production.**—Production (1946) in short tons: coal 11,649,200; pig iron and ferroalloys 539,690; steel ingots and castings 659,650; copper 72,610 (nine months); lead 22,778 (nine months); wheat 3,925,460; rice 220,400; beet sugar (1945) 150,540; cane sugar (1945) 10,470; oranges (1945) 928,200; olive oil (1945) 189,300; potatoes (1945) 2,936,000; wine (1944) 56,572,200 U.S. gal.

## Spanish-American Literature.

Latin American books published in 1947 showed that while Mexican and Argentinean novelists were developing powerful new trends, the rest of Latin American writers still did not manage to free themselves from regionalism. Mexico had several talented newcomers. Jesús Goytortúa followed his prize-winning *Pensativa* with another successful novel, *Lluvia Roja,* and received for it the Premio Ciudad de México. Agustín Yañez made a valuable contribution to the history of modern Mexico with his novel *Al filo del Agua* dealing with provincial life at the beginning of the century. Mention should be made of three other novels: Diego Cañedo's *La noche anuncia el día,* Francisco Rojas González' *Lola Casanova* and Manuel Andujar's *Llanura.*

Argentina's A. Arias, winner of several prizes, published a second novel, *La vara del fuego.* Alejandro Magrassi received an award for his *La Caá Yarí,* a representative work of northern Argentina. Editorial Losada introduced two new novelists: Estela Canto, author of *El retrato y la imagen,* and Angel F. Rojas, from Ecuador, author of *El éxodo de Yangana.* The short story was represented by J. Balach's *Motivos sureros,* about country life in Buenos Aires province, and Max Henríquez Ureña's *Cuentos insulares.*

Chile offered a clear example of stagnation. Marta Brunet continued to describe southern landscapes in *Humo hacia el Sur;* Luis Roberto Beza indulged in colourless provincialism in *La Puebla;* Mariano Latorre ventured into juvenile literature with *El Choroy de Oro.* Hernán del Solar was more fortunate in directing and writing for the newly founded Editorial Rapa Nui, publishers of books for children. Del Solar had written several short stories and *Chiu, el Campesino* was one of his best. A collection of miscellaneous prose by the first Chilean *costumbrista,* Alberto Blest Gana, came out under the title of *Costumbres y Viajes.* Ricardo Puelma's *Arenas del Mapocho,* although interesting in content, showed poor form. Two collections of short stories, *El Enigma* by Lucía Richard and *Melodía de Antaño* by Victoria Orjikh, further proved that Chilean fiction needed a quick change before it reached exhaustion. There was an odd item in Chile's output for 1947: a detective novel, *Los minutos acusan,* by Guillermo Blanco.

Central America offered a collection of short stories, *Champaña y Guaro,* by Hugo Lindo; a distinguished first novel, *Manglar,* by Joaquín Gutiérrez from Costa Rica and an anthology of *Cuentos Cubanos Contemporáneos* edited by José Antonio Portuondo.

As usual there was a good amount of miscellaneous and poetic prose published in Latin America. Chile's Benedicto Chuaqui displayed novelty of expression in *La eternidad contigo.* In his *Episodios Históricos,* Lucio Funes gave an interesting picture of colonial Mendoza. Ricardo Saenz Hayes' *Reminiscencias,* undoubtedly one of the outstanding books published in Argentina, is a record of travels, readings and conversations presented with great intelligence. The biographical articles written by Guillermo Sosa Loyola in *Pringles, Retazos de vida y tiempo* showed sound judgment and solid documentation. Mario Lopez Osornio edited *Oro Nativo,* an anthology of legends and popular poetry of the pampas. In *La Chimba,* Carlos Lavin told the story of that famous red-light district in 19th century Santiago which Dictator Diego Portales frequently visited.

Samuel A. Lillo was awarded Chile's national prize of literature (100,000 pesos). In 1947 he published *Espejo del Pasado,* hich summed up his entire career as poet, critic and journalist. illo was undoubtedly a second rate poet, but as a personality e had become an institution, with direct participation in the terary activities of more than three generations.

In Mexico, Isidro Fabela published his *Cartas al Presidente árdenas* which he wrote while Mexican delegate to the League f Nations. Adrián Recinos prepared an edition of the monuental *Popol Vuh, las antiguas historias del Quiché* for *Colecón Tierra Firme.*

Among the books of essays which appeared in Latin America uring 1947, the following deserved special attention: Gabriel errer's *Justo Sierra, el Maestro de América;* Carlos Miró Queada's *Rumbo literario del Perú,* including studies on Garcilaso e la Vega, Ricardo Palma, José S. Chocano and José de la Riva guero; Ulises René Girardi's *El hombre y el Cosmos;* Nicolás lonimsky's *La Música de América Latina,* a vast enterprise overing the history of Mexican, Central and South American usic plus a dictionary of composers, instruments, compositions, songs and dances; Rufino Cuervo's *El Castellano en mérica,* the unpublished articles and essays of a great grammarian; C. R. Centurión's *Historia de las letras paraguayas;* onzalo Picón Febres' *La literatura venezolana en el siglo XIX;* eón Dujovne's *Tomas Mann, las ideas y los seres en su obra;* osé Luis Romero's *Las ideas políticas en Argentina;* Daniel arcárcel's *La rebelión de Tupac Amaru;* Silvio Zavala's *La losofía política en la conquista de América;* and Ramón larés' *Psicogénesis del Arte,* published posthumously.

Latin American poets produced abundantly. A few of their ooks deserve mention: Esmeralda Radaelli, from Argentina, xpressed deep and passionate emotion in *Isla de Soledad;* M. Maples Arce gave importance to death and thoughts of social ignificance in *Memorial de la Sangre;* also from Mexico came uis Alvarez' *Humo,* Eugenio Florit's *Poema Mío* and M. González Flores' *Motivos humanos. Por un caminito así* by Rafael Arévalo Martínez represented the best that Central American oets had to offer. Nicolás Guillén, the great Afro-Cuban poet, gathered his entire poetical production in one volume, *El Son Entero,* published in Buenos Aires. Pablo Neruda's complete works were being published in Santiago by Cruz del Sur with introduction and critical notes by Juvencio Valle. Editorial Losada quickly sold out the first edition of Neruda's *Tercera Residencia.* (F. Aa.)

## Spanish Colonial Empire.

Total area: *c.* 134,763 sq.mi.; population (excluding Spain; est. 1946): 1,392,000.

The accompanying table lists the colonies, protectorates, etc. of Spain (*q.v.*) with certain essential statistics appropriate to each of them.

*Spanish Colonial Empire*

| Country and Area sq. mi. (approx.) | Population Estimated July 31, 1944 (000's omitted) | Capital Status, etc. | Principal Products (in short tons) | Imports and Exports (in pesetas) | Road, Rail and Shipping | Revenue and Expenditure (in pesetas) |
|---|---|---|---|---|---|---|
| Ceuta, Melilla, Alhucemas, Chafarines and Peñon de Velez, 82 | 145 | Madrid, administered as part of Spain | exports (1942)<br>raw materials 610,900<br>manufactures 7,370 | (1942)<br>imp. 169,769,990<br>exp. 54,764,500 | | |
| Spanish Morocco, 17,631 | 1,004 | Tetuan, protectorate<br>*High commissioner:*<br>Gen. Juan Varela | (1944)<br>wheat 40,434<br>barley 150,998<br>maize 6,507<br>sorghum 39,365<br>iron ore 742,556<br>antimony ore 359 | (1945)<br>imp. 494,301,977<br>exp. 143,388,959 | rds. c. 500 mi.<br>rly. 80 mi.<br>shipping (1943)<br>entered 307,379 tons,<br>cleared 307,299 tons | (1938)<br>rev. and exp.<br>111,312,200 pes.<br>1938: 1 peseta= 11.05 U.S. cents |
| Spanish Guinea, including Fernando Po, Rio Muni and four small islands, 10,900 | 171 | Santa Isabel, colony | exports (1943)<br>coffee 4,305<br>cocoa 14,133<br>timber 83,696 | (1943)<br>exp. 99,014,240<br>(imp., in short tons, 23,870) | | (est. 1943)<br>rev. 22,266,400 pes.<br>exp. 23,631,100 pes.<br>(in 1943 1 peseta= approx. 9 U.S. cents) |
| Western Sahara, including Ifni, Rio de Oro and Spanish Sahara, 106,150 | 72* | Villa Cisneros, colonies | fish and dates | | | |

*Ifni =35, Rio de Oro, etc. =37

## Spanish Literature.

Spain's biggest literary event of 1947 was the 400th anniversary of the birth of Miguel de Cervantes Saavedra. García Soriano and García Morales prepared a new edition of *El ingenioso hidalgo don Quijote de la Mancha,* embellished with engravings and lithographs from the more famous earlier editions. Soler Torner in *Algo más sobre el "Quijote"* returned to the classical interpretation of the novel. Cotarelo Valledor's lecture *La Dulcinea de Cervantes* appeared printed in booklet form. García Martí included in *Don Quijote y su mejor camino* a series of essays which treated such topics as Don Quixote and Faust, the innkeeper's daughter, etc. Fuentes Alonso's *Romances cervantinos* drew upon the novel for inspiration.

Substantial additions were made to the collections of Spanish classical and modern writers; in most cases their total literary production was published, but in others only their selected works. Authors represented were: Tirso de Molina, López de Zárate, Jorge Montemayor, García Gutiérrez, Leopoldo Alas, the brothers Joaquín and Serafín Alvarez Quintero, the brothers Antonio and Manuel Machado and Pío Baroja.

The theatre was extremely active with Jacinto Benavente's *La infanzona* attracting wide attention and bringing acclaim to the playwright on the occasion of its one-hundredth performance. Eduardo Marquina, who died in 1946, still figured in the theatre with a homage performance of *La ermita, la fuente y el río* and the publication of *El galeón y el milagro,* a romantic play appealing to Spanish patriotism. José María Pemán (director of the Royal Spanish academy) in *Todo a medio hacer* satirized modern society with its deceit and emphasis on speed and quantity. *Diario intimo de la tía Angélica* unfolded the poetic story of an elderly spinster who kept a romantic diary. Pemán's *Vendimia,* a comedy in verse, was staged by the company directed by the Argentine actress Lola Membrives. His humorous comedy *La verdad* was produced at the Lara theatre. *El pulso era normal,* a comedy by Luca de Tena, related the complications arising when a man suffers from amnesia for a period of several months. Under the title of *Tres comedias optimistas,* Ruiz Iriarte published *Un día en la gloria, El puente de los suicidas* and *Academia de amor.* Calvo Sotelo with his comedy *La cárcel infinita* won the Espinosa Cortina prize. The Lara prize of 10,000 pesetas was bestowed upon Doña Amira de la Rosa, a Colombian living in Spain, in recognition of the merit of her comedy *Piltrafa;* at the suggestion of the judges, the Lara management awarded another prize of a like amount to Claudio de la Torre for his comedy *Clementina.*

Concha Espina in her novel *El más fuerte* developed the thesis that the strongest is frequently routed in life by the weakest. José María Gironella received the Eugenio Nadal prize for his novel *Un hombre,* a work rich in characters and incidents. Eulalia Galvarriato was a finalist for the same prize with *Cinco sombras,* a story concerned with the colourless existence of five girls and their romantic friend Diego. Bartolomé Soler in *La llanura muerta* made manifest the restlessness of his spirit, penetrating into the hidden recesses of the soul. The action of *Romance de estrella y el mar* by Carmen Nonell takes place in the Basque country. Juan Antonio de Zunzunegui's *La quiebra* was a novel inspired in the world of finance, with the collapse in business, politics and faith following World War I. *Cuando los ángeles duermen* by Benítez de Castro was a story with the Barcelona of 1907 to 1942 as its setting. Hernández Navarro wrote a war novel in *Ida y vuelta. El golpe de estado de Guadalupe Limón* by Torrente Ballester was a vigorous novel with a South-American background.

*Memorias inmemoriales,* a collection of essays by Azorín, gave expression to spiritual reflections, incorporating many personal experiences and ideas. *El artista y el estilo* contained some of his other essays, collected and arranged by Cruz Rueda, who in the prologue included a biography and study of Azorín's works. Jesús de Lucas' *Pedazos de una vida* brought out how events had influenced his mind. *Smouldering Freedom* by Isabel de Palencia recorded the experiences of Spaniards living in exile. Pío Baroja's fourth volume of *Memorias,* entitled *Galería de tipos de la época,* conveyed his impressions of many acquaintances.

The Adonais Poetry prize for 1947 was awarded to José Hierro for his book *Alegría;* more than 100 works were submitted in the contest. The Juan Valera prize, given for the best ten sonnets on characters from Valera's works, was won by Molina Tenor. Ginés de Albareda's book of poetry *Seis sonetos de Mallorca y un poema de amor* was selected by the Royal Spanish academy for the Fastenrath prize.

Salvador de Madariaga's *The Rise of the Spanish American Empire* was rich in factual information about Spanish America. In *El declinar de la monarquia española,* José Deleito y Piñuela studied the process of decadence during the reign of Philip IV. Fernando Díaz-Plaja gathered interesting information about 18th century customs in *La vida española en el siglo XVIII.* José Llampayas stressed the monarch's human qualities and misfortunes in *Alfonso X* (*El hombre, el sabio*). José M. Doussinague in *Fernando el Católico y el cisma de Pisa* included 155 documents in a study of the years 1511–13. Gregorio Marañón y Posadillo objectively laid bare the character of Philip II's secretary in his *Biografía de Antonio Pérez.* Ramón Serrano Suñer, who played an important rôle in world affairs (1940–42), brought out much that transpired during World War II in his book *Entre Hendaya y Gibraltar.* (H. L. Jn.)

**Spanish Possessions in Africa:** *see* Spanish Colonial Empire.

**Spelman Fund of New York:** *see* Societies and Associations.

**Spices.** During 1947 the world's two largest storehouses of spices, Indonesia and India, were torn by civil strife. Bitter fighting prevailed. Occasionally a port in Java or Sumatra was opened, when good quantities of pepper, nutmegs and mace were sent, preferably to the U.S. for useful dollars. The price of black pepper fluctuated erratically. From 55 cents per pound landed at New York in January, the market declined gradually to 23 cents, moving unevenly as supplies arrived or famine impended, again touching 53 cents during October. The pepper harvest in the Malabar region of India was bountiful. Distribution was by export licences granted by the new Indian government, solely to native sellers. English firms previously had merchandised these famous Tellicherry and Alleppey black peppers. India was intensively cultivating its pepper plantations for a maximum crop in Jan.–March 1948. Prices during 1947 were two or three times those received in prewar years.

Chinese liquidation of accumulated stocks of cassia (cinnamon) continued from Hong Kong, almost all of the tonnage being shipped to the U.S. Prices fell to but 20% of the V-J day level for the standard varieties, and another harvest was almost ready.

Hungarian paprika was again offered in the world's big city markets, after a lapse of seven years. Spain again produced the largest crop. Paprika was cultivated by Morocco and Chile, finding markets readily against government monopoly prices of Europe.

Most of the war-substitute spices disappeared from international trade. The herbs, thyme and marjoram from France, again appeared. Costs were high because of manipulation of the franc.

In New York the American Spice Trade association established a research committee of scientists to raise the quality of spices as prepared and packed for consumers. Purity is so well maintained under better selection and processing of raw materials and under the food laws of most countries, that improvement must be sought by expert study of the constituents of each spice, to increase the content of natural strength and flavouring elements.

Mustard maintained leadership as mankind's most popular condiment. The seeds were cultivated in China, India, Europe and North and South America. North American 1947 production was curtailed by hail storms when the growth, heavy with ripened pods, was about to be harvested. An official (U.S. department of agriculture) estimate of the loss was 16,000,000 lb. During the year the U.S. produced 38,000,000 lb. of mustard seed, insufficient to satisfy that country's record-breaking demand. Imports offset the shortage.

Until such time as trading with Indonesia could be resumed, Grenada, one of the British West Indies, continued to hold a nutmeg monopoly. Instead of 10 cents per pound, as in 1939, the 1947 crop brought nearly 50 cents per pound.

Ginger was plentiful, more of the buying than usual being done in Sierra Leone, Africa. There the crop was heavy and the quality remarkably better than ever. Jamaica and the Indian gingers were neglected, being substantially more expensive.

Sage, genuine *Salvia officinalis,* again became obtainable from Yugoslavia. The U.S. requires about 500 tons annually, principally for seasoning pork sausage.

Large-scale production of caraway and poppy seeds in the Netherlands was welcomed by bakers who require them for certain kinds of bread and rolls.

Red peppers were plentiful throughout 1947 from Africa. In the U.S., California harvested good crops of the milder varieties, including the Pasilla or "Mexican" chilies indispensable for chili con carne.

The Levant exported more aromatic food seeds than usual. Its large crops of anise and cumin brought good prices.

(C. A. T.)

**Spirits:** *see* Liquors, Alcoholic.

**Sports and Games:** *see* Angling; Archery; Badminton; Baseball; Basketball; Billiards; Bowling; Boxing; Chess; Cricket; Curling; Cycling; Fencing; Football; Gliding; Golf; Gymnastics; Hand-ball; Horse Racing; Ice Hockey; Ice Skating; Lacrosse; Motor-boat Racing; Polo; Rowing; Skiing; Soccer; Softball; Squash Racquets; Swimming; Table Tennis; Tennis; Track and Field Sports; Trap-shooting; Wrestling; Yachting.

**Squash Racquets.** Charles W. Brinton of Philadelphia, Pa., again dominated the squash racquets scene in 1947, topping his rule with the national championship in an all-Philadelphia final with Stanley Pearson, Jr. Brinton won, 15–12, 15–9, 9–15, 18–16. Pearson and David McMullen, also of Philadelphia, won the national doubles, while Mrs. Charles Homer, Jr., of Merion, Pa., captured the U.S. women's singles.

In international team competition, Canada won the Lapham International trophy and the U.S. retaliated by winning the Grant trophy for doubles play. Ed Reid of Hartford, Conn., won the professional division.

J. Richard Leonard of Cedarhurst, N.Y, defeated Richard A. Holt of England in the national amateur racquets final. Holt, however, won the Pell cup over Leonard.

Squash tennis honours were generally cornered by F. Barry Ryan, Jr., of New York, who won both the national and veterans' championships. (M. P. W.)

**Stalin, Joseph Vissarionovich** (1879– ), soviet statesman, was born on Dec. 21 in Georgia in Transcaucasia and succeeded Lenin as virtual dictator of the Soviet Union in 1924 (see *Encyclopædia Britannica*). On May 6, 1941, shortly before the German invasion, Stalin assumed the premiership of the U.S.S.R.

During World War II, the necessity for defeating their common enemy forced the Big Three's leaders to synchronize their politico-military actions and Stalin, in his meetings with Winston Churchill and Franklin D. Roosevelt at Tehran and Yalta, and later with Clement R. Attlee and Harry S. Truman at Potsdam, was able to reach agreement with the Allies on many issues. After the war, however, the grand alliance disintegrated and latent antagonisms between the wartime partners soon came to the surface. East-west disputes in the major international conferences engendered fears of a new world war. Stalin asserted several times, however, that neither the nations nor the peoples of the world wanted war, but declared that the most serious threats to peace were the "incendiaries of a new war," naming Churchill as the foremost "incendiary."

His views on U.S.-soviet relations were expressed in his interview with Harold Stassen on April 9, 1947, when he told Stassen that despite their differing economic systems, the U.S. and the Soviet Union could exist together in harmony if there was a will to co-operate, adding that the U.S.S.R. "wants to co-operate."

To Secretary of State George C. Marshall (who visited the soviet prime minister during the Moscow conference of the Big Four foreign ministers) Stalin was quoted as saying he thought compromises were possible on all the major issues before the council but that "it was necessary to have patience and not become pessimistic."

In Feb. 1947, Stalin was unanimously elected as deputy to the supreme soviet of the Russian Soviet Federative Socialist Republic. The following month, he resigned as minister of the armed forces and handed the job to Gen. Nikolai A. Bulganin. He also was elected to the Moscow city soviet on Dec. 21, his 68th birthday. (*See* also UNION OF SOVIET SOCIALIST REPUBLICS.)

**Stamp Collecting:** *see* PHILATELY.

**Standards, National Bureau of.** Deriving authority from act of U.S. congress March 3, 1901, this bureau is the principal agency of the federal government for fundamental research in physics, mathematics, chemistry and engineering. During 1947 it consisted of 13 scientific and technical divisions, 1 concerned with commodity standards, and 4 concerned with administrative and plant matters. The scientific divisions were electronics, applied mathematics, atomic physics, radio propagation, mechanics and sound, electricity and optics, metrology, chemistry, organic and fibrous materials, mineral products, heat and power, building technology and metallurgy.

The present structure represents a reorganization that became effective July 1, 1947, and involved a regrouping of established sections to form the atomic physics and building technology divisions, the expansion of the work in mathematics into a division of four sections, and a consolidation of the old simplified practice and commercial standards divisions into a single commodity standards division to which are assigned co-ordinating functions of the bureau's work in federal specifications.

Coinciding with the range of the physical sciences, the activities of the bureau during 1947 were extremely diversified and extensive. Three broad types of activities were pursued in these fields: research and development; test, calibration and standard samples; and advisory and co-operative functions. In general, each of the divisions and sections of the bureau was engaged in all of these activities.

Normal investigations were continued in atomic physics. An important advance in this field was the development of an electronic method of focusing electrons emitted by radioactive atoms, called tracer micrography. This new method permits higher resolution in observing tracer atoms—radioactive isotopes introduced into substances to observe the behaviour of individual atoms. Beta-ray standards were developed and calibrated; microgram gamma-ray standards were prepared; disintegration schemes and nuclear energy levels were investigated; atomic energy levels were compiled; radiation hazards of low-energy radiations were studied; an extensive program to determine the absorption and scattering characteristics of concrete barriers for broad X-ray beams up to 1,500,000 volts was under way; and a co-operative program with the Carnegie institution on the fundamental action of penetrating radiation on biological matter was in progress.

The creation of a division of applied mathematics, the National Applied Mathematics laboratories, represented a major co-operative effort of the bureau, the office of naval research and other federal agencies. Four sections were activated: the Institute of Numerical Analysis, located at the University of California, Los Angeles; the Computation laboratory, incorporating the long-established Mathematical Tables project of the bureau in New York city; the Statistical Engineering laboratory; and the Machine Development laboratory. Instrumental in supporting the program and in recognizing the need for a centralized national computational facility equipped with high-speed automatic machinery, the office of naval research provided funds for the first two units. The office of naval research and the bureau of the census contracted for high-speed electronic automatic computers. The machine development group completed the design phase of this work, in close co-operation with the electronic component group of the bureau, and construction was to begin in 1948. Highly specialized mathematical tables were prepared during the year, including tables of spherical scattering functions for complex arguments, of spherical Bessel functions, of the exponential integral for both complex and real values of the parameter, and tables of intensity functions for complex indices of refraction.

Two major problems confronted the bureau in its basic research. First, the demands of contemporary science and technology for greater precision and additional data on scientific standards, the properties of materials, and physical constants required intensified activity in the established branches of the physical sciences. For example, new standards of direct capacitance for units below 5 micromicrofarads were developed and investigations of plain ring gauges cylindrically accurate to 0.000005 inch were in progress. Second, new fields of science demand new standards. Thus radar extended the radio frequency spectrum a hundredfold during World War II, and this extension required much basic research of the nature of propagation, in the development of instruments and methods of measurement, and in the preparation of standards. As a result of the year's work, the bureau could certify the accuracy of practically all radio measuring instruments and components of frequencies up to 30 megacycles; attenuators and voltmeters of conventional design and range could be standardized up to 100 megacycles; and frequency meters or cavity resonators up to 20,000 megacycles.

Representative projects included the following: thermionic and secondary emission, electron microscopy, ultra-small electronic circuits, electronic components for digital computing machines, printed electronic circuits, basic radio propagation predictions, microwave and frequency utilization research, research in cosmic and atmospheric noise, oscillation of quartz plates, liquid oxygen for aircraft use, sound insulation, turbulent boundary layer research, flood waves, electrical surge measurements, underground corrosion, batteries and dry cells, transmissometer for control of approach lights, telescopic pointing, end standards, high-temperature specific heats, hydrocarbon research, gas turbine pyrometers, conventional heating devices, warm air panel heating, new secondary standards of mass, precision angle gauge blocks, surface strains in plastic dentures, benzoic acid thermometric standard, electrodeposition, high polymer research, properties of synthetic and natural rubbers, water repellent fabrics, permanence of plastics, concretes containing admixtures, new optical glasses, and various studies in ferrous and nonferrous metallurgy.

Nearly 150,000 tests and calibrations were made for other government agencies and the public. The activity embraced the furnishing of 20,000 standard samples, the testing of about 2,500 light bulbs (a sampling of nearly 3,000,000 purchased by the government), the sample testing of 3,000,000 bbl. of cement, the testing of more than 22,000 clinical thermometers, measurement and calibration of all the radium sold in the United States, and tests and calibrations of thousands of materials, devices and instruments.

The results of research and development at the bureau, typified in the preceding representative projects, are made available to the nation through official publications. Three periodicals, the *Technical News Bulletin*, the *Journal of Research* and *Basic Radio Propagation Predictions* are issued monthly in addition to nonperiodicals like the Applied Mathematics Series, the Building Materials and Structures Series, circulars, handbooks and miscellaneous pamphlets and books. All of these publications are available from the superintendent of documents, U.S. government printing office, Washington, D.C. (H. OD.)

**Stanford University** (THE LELAND STANFORD JUNIOR UNIVERSITY), an independent institution of higher education near Palo Alto, Calif.

The enrolment in the autumn of 1947 was approximately double the prewar peak. Although classroom, library and laboratory facilities were strained, a new schedule distributing both classes and laboratory work throughout the day made it possible to accommodate the increased load. Stanford Village, a reconverted army hospital located two miles from the campus, housed more than 2,000 students.

A school of mineral sciences bringing together the departments of geology and mining was organized under the direction of Dean A. I. Levorsen. With the appointment of ten scholars made possible by a grant from the Rockefeller foundation, the Hoover institute inaugurated a program in Slavic studies. Work in creative writing was given a special impetus by a pledge of $75,000 from Dr. Edward H. Jones to guarantee for five years six annual $2,000 fellowships and prizes for excellence in writing the short story, the novel, the drama and poetry. With the aid of the National Theater conference, five junior artists-in-residence were appointed in the speech and drama department.

In the physics department Professor William Hansen designed and constructed an electron linear accelerator which was less elaborate and expensive than the cyclotron and offered dramatic possibilities for greatly increased energy through a simple extension of its length. And in bacteriology under the direction of Professor Hubert Loring significant advances were made on the identification and cultivation of strains of poliomyelitis virus.

Professor George Polya's election as a foreign member of the mathematics section of the French Academy of Sciences made him one of three living Americans so honoured. An unusual honour came likewise to Professor Stephen P. Timoshenko when he was designated the second American to be awarded the James Watt international medal by the Council of the Institute of Mechanical Engineers of Great Britain.

Gifts for the year totalled $1,696,000. From the estate of Mrs. Lucie Stern, funds were made available for the construction of an undergraduate men's dormitory. Near the end of the year construction was started on Crothers hall, a dormitory for graduate students in law. (For statistics of endowment, enrolment, faculty, library volumes, etc., *see* UNIVERSITIES AND COLLEGES.) (A. C. EU.)

**Stars:** *see* ASTRONOMY.

**Stassen, Harold Edward** (1907– ), U.S. politician and naval officer, was born April 13 in West St. Paul, Minn. He studied at Minnesota university and law school, Minneapolis, Minn., 1923–29, and was admitted to the Minnesota bar in 1929. He first ran for political office in 1930 when he was elected county attorney, a post he held for eight years. He was elected governor of Minnesota on the Republican party ticket in 1938 and was inaugurated in Jan. 1939, one of the youngest governors in the U.S. He was re-elected governor for the 1941–43 term. Stassen was temporary chairman and keynoter of the Republican national convention in 1940 and was national chairman of the Governors' conference and of the Council of State Governments, 1940–41. He resigned as governor in 1943 to join the U.S. navy. A commander and flag officer to Adm. William F. Halsey, Jr., Stassen saw action in four battles. On Feb. 20, 1945, he accepted Pres. Franklin D. Roosevelt's appointment as delegate to the San Francisco conference of the United Nations. Stassen, who was promoted to the rank of captain in October, was released from the navy on Nov. 15, 1945, and he returned to the political arena. On Dec. 17, 1946, Stassen became the first of the G.O.P. aspirants to announce his candidacy for the 1948 presidential nomination. A former Wendell L. Willkie backer, Stassen and his "liberal" platform was looked upon with misgivings by the conservative wing of the party. Toward the close of 1947, Stassen led the assault on commodities speculators, and his charge, Dec. 10, that administration "insiders" profiteered in food led to a senatorial probe of grain speculators.

**State, U.S. Department of:** *see* GOVERNMENT DEPARTMENTS AND BUREAUS.

**State Guard:** *see* NATIONAL GUARD.

**Steel:** *see* IRON AND STEEL.

**Stellar System:** *see* ASTRONOMY.

**Stock Exchanges:** *see* STOCKS AND BONDS.

HAREHOLDER of the U.S. Steel Corp. addressing the 46th annual meeting stockholders and directors which was held at Hoboken, N.J., on May 5, 1947

## tocks and Bonds.

The U.S. stock market in 1947 was exceptionally inactive in volume of ading, remarkably steady in price level and slightly bearish as ompared with the closing price level of 1946.

With the exception of railroad stocks, the three alternate bull nd bear movements of 1947 were comparatively minor in xtent. The drastic bear market of 1946 apparently had spent s force, and the 1947 price level seemed to indicate primarily backing and filling procedure.

During 1947, corporate earnings were regarded as more or ss uncertain because of the large wage increases granted toard the end of 1946 and in the first months of 1947, although orporations within most groups of shares, with the exception f rails, managed to make a fairly satisfactory adjustment. In his they were aided by price increases in either products or ervices. Unfortunately the rate of adjustment was spotty in ifferent fields and much slower than had been anticipated. oreover, the entire year was marked by a psychology of inflaion and a rapid rise in most basic commodities. Markets also eemed to reflect the view that neither a high postwar boom nor serious business depression was likely.

Toward the close of 1947 observers emphasized the followng problems as causing most of the stock market's unsettleent: (1) extremely high and sensitive commodity markets, 2) rising inventories of retailers with increasing sales resistance nd declining sales, (3) absence of needed skilled labour, (4) radual stiffening in long-term oney rates, reflected by many ew lows among preferred tocks as well as bond issues, 5) inflation at a high point, nd (6) adverse developments n the foreign situation.

On Dec. 1, 1947, the market alue of all listed shares on the ew York Stock exchange tood at $67,026,000,000, with n average market price per hare of $47.13. On Nov. 1, 1946, this market value stood at $66,115,000,000, with an average price of $51.63. A depreciation in value of approximately 8.7% was thus shown for the year.

According to the New York Stock exchange's compilation, the total stocks listed on that exchange on Dec. 1, 1947, stood at 1,896,000,000 shares, with a total market value of $67,026,000,000. This value compared with $66,115,000,000 on Nov. 1, 1946, $69,560,000,000 on Nov. 1, 1945, and $53,087,000,000 on Nov. 1, 1944. Of the 1947 total (as of Dec. 1), U.S. stocks aggregated 1,843,000,000 shares valued at $65,970,000,000, and stocks of other countries 53,427,000 shares valued at $1,056,000,000. The total of shares was distributed over 1,354 separate U.S. issues and 19 issues of other countries, representing a total of 992 issuing corporations.

Total shares traded on the New York Stock exchange during 1947 amounted to only 253,623,894 shares, as compared with 363,709,000 shares during 1946, 377,564,000 shares during 1945, 263,074,000 shares during 1944, 278,742,000 shares during 1943, 125,678,000 shares during 1942, 170,534,000 shares during 1941 and 1,124,991,000 shares during 1929, the largest yearly total on record. The New York curb market had sales during 1947 of only 72,380,000 shares, as compared with 137,220,000 shares during 1946, 143,337,000 shares during 1945, 71,062,000 during 1944, 71,382,000 during 1943 and 22,328,000 during 1942.

**Bonds.**—According to the New York Stock exchange's record, stock, bond and note flotations of U.S. corporations during the first nine months of 1947 totalled $2,681,000,000; but exclusive of refunding issues, investment trusts and holding companies,

**Table I.—*U.S. Security Market Prices***

| | Railroads 20 stocks | | Industrials 50 stocks | | Public Utilities 20 stocks | | *Copper 7 stocks | | Stocks 90 stocks | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1947 | 1946 | 1947 | 1946 | 1947 | 1946 | 1947 | 1946 | 1947 | 1946 |
| Jan. | 46.8 | 66.7 | 146.3 | 172.8 | 79.7 | 88.5 | 118.3 | 132.2 | 120.8 | 143.1 |
| Feb. | 48.7 | 66.3 | 152.5 | 173.1 | 80.9 | 89.5 | 121.0 | 136.3 | 125.5 | 143.5 |
| March | 44.6 | 62.7 | 146.8 | 167.8 | 77.6 | 88.8 | 118.8 | 131.4 | 120.4 | 139.2 |
| April | 41.3 | 63.7 | 141.7 | 179.5 | 74.7 | 93.7 | 114.1 | 139.1 | 116.0 | 148.2 |
| May | 38.8 | 63.6 | 139.7 | 179.8 | 72.5 | 94.3 | 109.7 | 142.8 | 113.9 | 148.5 |
| June | 39.9 | 66.1 | 145.2 | 177.8 | 73.1 | 94.5 | 108.1 | 139.7 | 117.9 | 147.6 |
| July | 44.5 | 62.8 | 154.2 | 173.5 | 76.2 | 90.2 | 115.3 | 138.8 | 125.2 | 143.4 |
| Aug. | 43.0 | 59.9 | 150.9 | 170.5 | 75.8 | 88.4 | 114.4 | 133.9 | 122.7 | 140.6 |
| Sept. | 41.7 | 48.3 | 147.0 | 145.9 | 74.5 | 75.5 | 113.0 | 109.2 | 119.6 | 119.9 |
| Oct. | 42.5 | 45.1 | 151.4 | 142.9 | 74.5 | 74.3 | 115.6 | 109.7 | 122.7 | 117.2 |
| Nov. | 40.7 | 46.6 | 150.9 | 141.5 | 69.9 | 76.0 | 118.7 | 115.1 | 121.3 | 116.7 |
| Dec. | 41.7 | 48.4 | 148.7 | 145.3 | 66.7 | 79.5 | 116.9 | 123.8 | 119.3 | 120.2 |

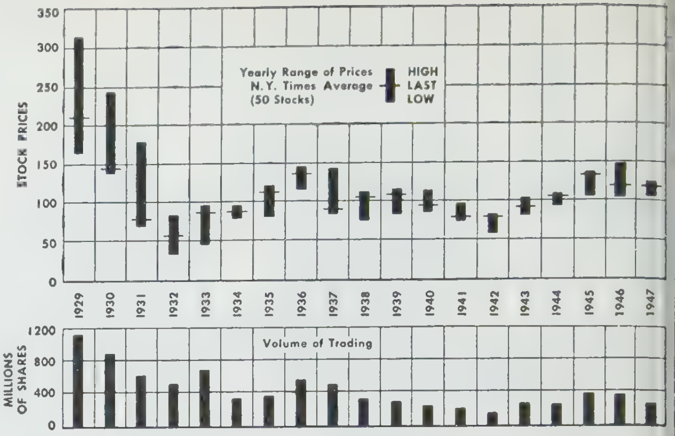
*1935–39 base period; all other figures use 1926 as a base period.

The above figures are an average for the month based on daily closing prices, except for copper, which are weekly closing prices.

Source of data, *Trade and Securities, Current Statistics*, Standard and Poor's Corporation.

Table II.—*1947 Price Range of 25 Leading Representative U.S. Common Stocks*

| Stock | Close 1946 | High 1947 | Low 1947 | Close 1947 |
|---|---|---|---|---|
| Allied Chemical & Dye | 171 | 202 | 164 | 189½ |
| American Car & Foundry | 49¾ | 54⅞ | 36 | 41⅜ |
| American Smelting & Refining | 58⅜ | 70½ | 48½ | 56¼ |
| American Telegraph & Telephone | 171½ | 174¾ | 149¾ | 151⅜ |
| American Tobacco | 81 | 84¾ | 61⅛ | 68½ |
| Anaconda Copper | 40⅜ | 42 | 30⅞ | 34 |
| Bethlehem Steel | 91 | 105½ | 76½ | 103 |
| Chrysler Corporation | 91½ | 66⅞ | 56¼ | 63¾ |
| Douglas Aircraft | 71⅝ | 76 | 45¼ | 47½ |
| E. I. du Pont de Nemours | 190¾ | 197 | 173 | 187 |
| General Baking | 11¾ | 13¼ | 9¾ | 10⅜ |
| General Electric | 35⅞ | 39⅞ | 32 | 35¾ |
| General Motors | 52½ | 65⅞ | 51⅞ | 58¼ |
| Goodyear Tire & Rubber | 54⅞ | 61⅜ | 41½ | 43½ |
| Great Northern Ry. (pfd.) | 45⅝ | 49⅝ | 34½ | 41 |
| Illinois Central Railroad | 25⅛ | 32¼ | 18⅛ | 31⅛ |
| International Harvester | 72 | 95 | 70 | 89 |
| Montgomery Ward | 60⅛ | 64⅝ | 49 | 53⅜ |
| National Dairy Products | 36⅞ | 38 | 26⅝ | 29 |
| New York Central Railroad | 18⅛ | 22⅜ | 12 | 14¼ |
| Pennsylvania Railroad | 25½ | 26⅞ | 15½ | 18⅛ |
| Standard Oil of Indiana | 41 | 44¼ | 37¼ | 42⅞ |
| Standard Oil of New Jersey | 69¼ | 80 | 63 | 79⅜ |
| Union Pacific Railroad | 130⅛ | 164½ | 120 | 164½ |
| United States Steel | 71¾ | 80 | 61⅜ | 78⅛ |



TRADING IN STOCKS on the New York Stock exchange: yearly range of prices and number of shares sold, exclusive of odd-lot and stopped sales

the total flotation amounted to only $1,414,000,000. These figures compared with similar totals during the corresponding ten months of 1946 of $3,331,000,000 and $1,080,000,000, respectively.

The total par value of bonds listed on the exchange at the beginning of Nov. 1947, stood at $136,711,000,000, with a market value of $136,336,000,000. This value compared with $136,880,000,000 and $124,802,000,000 for the corresponding years of 1946 and 1945. The increase in value during 1945 and 1946, as was the case also for a number of previous years, was largely attributable to the issue of large amounts of U.S. government securities, while during 1947 this important factor ceased to be a continuing one. Of the 1947 total, U.S. corporation bonds (at the beginning of November) amounted to $14,636,000,000, with a market value of $13,367,000,000; company bonds of other countries with a par value of $603,783,000 and a market value of $541,107,000; U.S. government bonds (inclusive of corporations and subdivisions) with a par value of $119,710,000,000 and a market value of $123,200,000,000; and other governments (inclusive of subdivisions) with a par value of $1,511,000,000 and a market value of $979,721,000. The total listed bonds of U.S. corporations were distributed over 584 issues with 316 issuers; of U.S. government bonds with 79 issues and 3 issuers; and other governments with 188 issues and 44 issuers. The total bonds traded on the New York Stock exchange during 1947 amounted to $1,075,541,000 as compared with $1,364,000,000 during 1946.

**Stock Exchange Rules.**—Alterations in the rules, practices and recommendations of the New York Stock exchange during 1947 included:

*Permissive Incorporation.*—On Jan. 16, 1947, the board of governors again disapproved amendments to the constitution which would permit corporations to hold memberships, and refused to have the amendments submitted to the membership for a vote. Following this action the proposed amendment was again submitted, on Nov. 7, to a vote on a petition bearing 340 names. By a vote of 835 to 344 the membership disapproved the proposed amendment. The proposition this time was submitted for balloting to the membership without the governing board's approval or disapproval.

Table III.—*U.S. Bond Prices for 1947*

Composite Bonds
Dollars per $100
(Standard and Poor's Corporation)

| Month | High | Low |
|---|---|---|
| Jan. | 116.7 | 115.8 |
| Feb. | 117.1 | 116.5 |
| March | 117.0 | 116.2 |
| April | 116.9 | 116.2 |
| May | 116.3 | 113.6 |
| June | 114.7 | 113.9 |
| July | 116.1 | 114.6 |
| Aug. | 116.2 | 116.0 |
| Sept. | 115.6 | 114.5 |
| Oct. | 114.4 | 113.3 |
| Nov. | 113.7 | 112.9 |
| Dec. | 113.1 | 111.7 |

*Margin Requirements.*—In January the federal reserve board ruled that, effective Feb. 1, 25% credit could be extended on transactions in registered securities listed on national securities exchanges. The board had prohibited such extension of credit since Jan. 21, 1946. On Sept. 26, 1947, the margin rules of the exchange were amended by the board of governors to provide that effective Oct. 1, securities selling above 5 could be purchased on the same credit terms as previously applied only to securities selling above 10.

The president of the New York Stock exchange declared that ill-advised use by the federal reserve board of its credit authority had contributed to unsatisfactory conditions in the securities markets and that an appropriate credit basis would be 50%.

*Commission Increases.*—On Oct. 17 the board of governors approved an amendment to the constitution of the exchange providing for the calculation of commissions on a money-involved basis and an estimated over-all increase in gross commission income by approximately 20%.

The amendment was approved by the membership on Oct. 31 and the new rates became effective Nov. 3. It was vigorously opposed by many, and a record 1,131 votes were cast in the balloting, with 756 approving the new measure and 373 in opposition.

*Exchange Procedures.*—The board of governors approved an amendment to the constitution of the exchange "which would enable members of the exchange, by petition with 175 signatures, to present Constitutional amendments to the Board which

Table IV.—*1947 Price Range of 25 Leading U.S. Domestic Bond Issues*

| Name | High | Low | Last (Dec. 31) |
|---|---|---|---|
| American Telegraph & Telephone 2¾s 80 | 103¼ | 88 | 90¾ |
| American Tobacco 3s 62 | 105½ | 100¼ | 101⅜ |
| Atchison, Topeka & Santa Fe 4s 95 | 132 | 115¼ | 116 |
| Bethlehem Steel 2¾s 70 | 103½ | 95 | 96½ |
| Chesapeake & Ohio 3½s 96D | 107 | 100¼ | 100¼ |
| Chicago, Burlington & Quincy gen 4s 58 | 114⅝ | 107 | 107⅛ |
| Commonwealth Edison 3s 77 | 109⅜ | 101⅜ | 103 |
| Erie 3⅛s 2000 G | 94 | 78¾ | 78¾ |
| Great Northern Railway 3⅛s 90 N | 104¾ | 89⅞ | 90 |
| Illinois Bell Tel. 2¾s 81 | 105⅝ | 94¼ | 96 |
| Illinois Central 4s 52 | 102 | 96 | 98 |
| Louisville & Nashville 2⅞s 2003 | 98¼ | 83 | 83 |
| National Dairy 2¾s 70 | 104¼ | 97⅛ | 97½ |
| Northern Pacific 4s 97 | 113⅜ | 98⅛ | 99 |
| Ohio Edison 3s 74 | 107½ | 99½ | 100 |
| Pennsylvania Railroad gen 5s 68 | 125½ | 101¾ | 107¾ |
| Philadelphia 2¾s 67 | 105⅜ | 98¼ | 99⅛ |
| Reading Railroad 3⅛s 95 | 99½ | 81½ | 83½ |
| Southern Pacific 4½s 81 | 100 | 83¼ | 87⅜ |
| Southern Railway gen 4s 56 | 103¼ | 91 | 93¼ |
| Standard Oil of New Jersey 2⅜s 71 | 99¾ | 91½ | 93½ |
| Swift & Company 2⅝s 72 | 103¾ | 98 | 98¼ |
| Union Pacific 2⅞s 76 | 106⅜ | 96½ | 96½ |
| Western Union 5s 51 | 95½ | 76⅛ | 87½ |
| Westinghouse El. & Mfg. 2⅝s 71 | 103 | 97 | 98 |

Table V.—*Stock Indexes, 1947: Monthly Highest and Lowest Points*

| | Fixed Interest Share | | Industrial Ordinary Share | | Government Securities | | Gold Mines | | Stock Exchange Dealings Marked in Official List | |
|---|---|---|---|---|---|---|---|---|---|---|
| onth | High | Low | High | Low | High | Low | High | Low | High | Low |
| an.. | 149.5 | 148.5 | 140.6 | 133.8 | 120.94 | 120.55 | 134.56 | 128.68 | 19,438 | 9,143 |
| eb. | 148.7 | 145.9 | 134.2 | 124.4 | 120.90 | 119.28 | 135.28 | 127.85 | 13,041 | 10,222 |
| arch | 145.7 | 141.2 | 132.6 | 126.8 | 119.75 | 116.38 | 134.95 | 123.26 | 16,136 | 10,012 |
| pril | 143.8 | 141.8 | 134.5 | 128.6 | 118.25 | 117.60 | 125.34 | 119.48 | 13,226 | 8,801 |
| ay | 145.0 | 143.8 | 137.2 | 134.2 | 118.85 | 118.28 | 121.84 | 114.73 | 14,869 | 9,478 |
| une | 144.7 | 142.8 | 137.1 | 133.1 | 118.52 | 116.87 | 121.79 | 115.16 | 12,169 | 9,071 |
| uly | 142.5 | 135.8 | 134.5 | 119.5 | 116.84 | 113.09 | 119.17 | 113.42 | 15,597 | 7,219 |
| ug. | 135.1 | 131.7 | 121.8 | 110.4 | 113.81 | 111.89 | 134.71 | 113.16 | 10,033 | 5,838 |
| ept. | 132.8 | 131.4 | 116.9 | 104.2 | 113.61 | 111.82 | 128.06 | 120.84 | 9,369 | 5,691 |
| ct. | 135.4 | 132.2 | 117.9 | 110.4 | 114.58 | 112.85 | 126.44 | 121.90 | 8,245 | 5,895 |
| ov. | 136.2 | 134.2 | 119.9 | 113.1 | 115.24 | 113.68 | 127.06 | 122.94 | 9,536 | 6,520 |
| ec. | 134.8 | 134.2 | 129.0 | 118.9 | 113.58 | 112.88 | 123.59 | 118.69 | 13,434 | 5,684 |

Bases are 100 as at the following periods: fixed interest, 1928; industrial ordinary, July 1, 1935; govt. securities and gold mines, ct. 15, 1926.

The indexes shown in the above table are those calculated each day by the *Financial Times*, and are reproduced by permission of the *inancial Times.*

would be referred to the membership for vote whether or not approved by the Board." The amendment was approved by the membership on March 20 by a vote of 739 to 122.

An increase in the capital requirements for firms carrying commodity accounts was placed into effect on April 18.

*Informative Reports.*—A survey of the geographical origin of all orders in stocks executed on the floor of the exchange during the period of March 24 through March 29 disclosed that 75.18% of total share trading originated in the east; 16.30% from the central time zone: .82% from the Rocky mountain zone; and 7.70% from the Pacific coast zone.

A specific detailed breakdown of the regular monthly short position report in listed stocks as of June 17 disclosed that, of the total short interest, "of 1,539,638 shares, 88.9% or 1,369,186 shares reflected positions of nonmembers, compared with 170,452 shares or 11.1% for members. Of 11,165 short accounts, nonmembers accounted for 10,731 or 96.1%, compared with 434 member accounts or 3.9%."

The Securities and Exchange commission reported that during the violent bear market of 1946 on the exchange, it did not appear that "the over-all market action resulted from planned or concerted action by any group; nor do the activities of any group seem to have amounted to more than the free play of different opinions as to when to buy and when to sell"; and that it "found no evidence that market prices depended at any moment on manipulative activities." (*See* also BUSINESS REVIEW.)

(S. S. H.)

**Great Britain.**—The year 1947 was critical for the London market in stocks and bonds. The long bull market in industrial ordinary shares which had begun in 1940 was stemmed by the fuel crisis in February, which brought large sectors of British industry to a temporary standstill, and finally broke when the running out of the U.S. loan and suspension of sterling convertibility underlined the gravity of Britain's economic position.

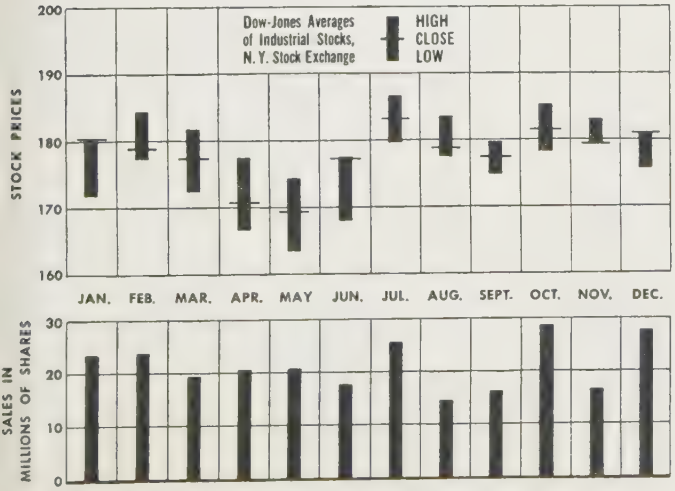
At the same time, the growing dangers of fostering an already inflationary situation by the policy of cheap money appeared to have impressed themselves upon the government advisers, and the market for British funds was allowed to find its own level. Yield on long-term government securities rose from about 2½% to 3%, and the newly-issued 2½% treasury stock ("Daltons"), redeemable in 1975 or after at government option, at one time fell to 20% discount. Yields on other securities were adjusted accordingly.

A major influence in bringing down gilt-edged prices was the substantial discount on "take-over" prices at which home rails were standing for most of the year. These securities, to be replaced by a £1,000,000,000 government guaranteed British transport stock on Jan. 1, 1948, provided a means of buying a gilt-edged stock at prices cheaper than gilt-edged themselves, and exchanges into home rails tended to depress gilt-edged prices. The basis for issuing transport stock depended on the level of gilt-edged at the date of issue, and it was probably the desire of the government to issue the stock as cheaply as possible that impelled Hugh Dalton, before he resigned the chancellorship, to speak hopefully of the market's prospects in the autumn, with the sequel that a good recovery ensued, which was partly lost when Sir Stafford Cripps became chancellor.

There was no doubt that the hope of a U.S. plan of aid for Europe helped stave off a more drastic break in market prices. Other developments tending to aid markets included the agreement to sell the British-owned railways in Argentina for £150,000,000, conclusion of financial agreements with a number of countries, the high prices of commodities, and the swing of political opinion to the right in local elections.

The full impact of the export policy had yet to be seen, and public activity in markets declined as the year wore on.

(H. PN.)



SALES AND PRICES on the New York Stock exchange, 1947

**Stomach Disorders:** *see* ALIMENTARY SYSTEM, DISORDERS OF.

**Stone.** The table lists the production of the various types of stone in the United States in 1945 and 1946.

The outputs of the types of stone used in building construction show clearly the effects of the postwar building revival. In addition to the dimension stone listed below, 69,660 tons of slate were sold in 1945, and 96,250 tons in 1946, while crushed stone was increased by 482,200 tons of slate granules and flour in 1945 and 663,500 tons in 1946. These figures also do not

*Production of Stone in the United States, 1945 and 1946*

(In thousands of short tons and thousands of dollars)

| | 1945 | | | 1946 | | |
|---|---|---|---|---|---|---|
| Name of Stone | Dimension | Crushed | Total | Dimension | Crushed | Total |
| Basalt | 204 | 14,707 | 14,911 | 50 | 16,350 | 16,400 |
| Granite | 362 | 7,378 | 7,740 | 535 | 10,584 | 11,119 |
| Limestone | 334 | 112,240 | 112,574 | 504 | 134,213 | 134,717 |
| Marble | 60 | 112 | 172 | 77 | 128 | 205 |
| Sandstone | 64 | 4,323 | 4,387 | 161 | 4,093 | 4,254 |
| Others | 35 | 13,587 | 13,622 | 47 | 12,109 | 12,156 |
| Total | 1,059 | 152,347 | 153,406 | 1,375 | 177,478 | 178,852 |
| Value | $17,849 | $161,459 | $179,308 | $32,972 | $201,367 | $234,239 |

cover outputs of stones for special uses, which in 1946 included 43,887,000 tons of limestone used in making cement and 11,985,000 tons used in making lime. Including these additional items with the totals for dimension and crushed stone gives a grand total of stone output of 235,374,100 tons in 1946, as compared with 193,129,400 tons in 1945.

**Canada.**—Stone production in Canada increased from 6,205,555 short tons in 1945 to 8,056,260 tons in 1946 and 8,758,364 tons in 1947. (G. A. Ro.)

**Straits Settlements:** *see* MALAYAN UNION AND SINGAPORE.

## Strategic Mineral Supplies.

Definite progress was made in 1947 toward the building up of a national stock pile in the United States of those materials declared to be strategic or critical. Stockpiling activity was of two types: (1) The taking over of those stocks of raw surplus war materials which had been declared to be strategic or critical by the Munitions board, and storing them for use in the event of future emergency demand. (2) The purchase and stocking of new materials designated as strategic or critical.

The Munitions board set up a list of more than 100 commodities divided into three major groups. Group A included materials for which stockpiling was considered the only satisfactory means of assuring an adequate supply for a future emergency. Group B included materials practicable for stockpiling, but recommended for acquisition only to the extent available as war surplus. Group C included materials not at the time recommended for stockpiling.

Previous to the passage of the Stock Piling act on July 23, 1946, and its implementation with an appropriation on Aug. 8, stockpiling activities were confined to materials in Group B. With funds available from the appropriation, a purchase program was initiated for a limited number of materials in Group A.

At the end of Dec. 1946 funds had been encumbered only to the extent of about $35,000,000, out of an appropriation of $100,000,000, but the act had been in force for less than five months, much of which time had been expended in building up an operating force, and the results were not considered unfavourable.

During the remaining six months of the fiscal year, to June 30, 1947, the rate of placing contracts was increased somewhat, but not by enough to use up the available funds. Commitments during these six months amounted to about $45,000,000, leaving at the end of the fiscal year an unencumbered balance of about $19,000,000.

The volume of stockpiling to the end of 1947 involved the use of 55 different military reservations, about 6,000,000 sq.ft. of outside storage area, and 700,000 sq.ft. of warehouse storage. To supplement existing covered storage there was erected a number of surplus steel fuel tanks, as a substitute for shed or bin storage.

For the fiscal year ending June 30, 1948, congress authorized an appropriation of $100,000,000 plus $75,000,000 in contract authority, for stockpiling purposes.

The other phase of the stockpiling operations is that of taking over from other government agencies the stocks of surplus strategic and critical materials that were on hand at the close of World War II, less any amounts that must be turned into industrial channels to make up current shortages in civilian supply. It was estimated that the value of the total surplus that would eventually be turned over to the stockpile would be of the order of $275,000,000.

The amount and character of the information that can be made public concerning stockpiling operations must be greatly limited, for security reasons. Data on what specific materials are being purchased, how much is being contracted for, how much is being sought, and where and in what amounts it is being stored are all considered confidential information. The information in the above review was abstracted from nonconfidential extracts from reports made to congress by the secretary of war and the secretary of the navy.

**Strawberries:** *see* FRUIT.

**Streptomycin:** *see* CHEMOTHERAPY; MEDICINE; NERVOUS SYSTEM; TUBERCULOSIS; UROLOGY.

## Strikes and Lock-outs.

The United States, Canada and Great Britain published, for many years, current statistics of strikes and lock-outs, their causes and results, together with detailed reports on the more important strikes of each year. After 1942 the statistics on strikes gathered by these countries were less complete because of the wartime conditions.

During 1946 (Table I) there were 4,985 strikes in the United States; 235 more than in 1945, but involving the loss of 116,000,000 man days, more than three times the number lost in 1945 or in 1937, the previous peak years in time lost. In 1947, on the other hand, strike activity was at a much lower level; approximately 3,000 strikes during the first nine months caused the loss of fewer than 30,000,000 working days. While official figures for the last three months of 1947 were not available when the table was compiled, news releases indicated that strikes in the last quarter were at an equally low level, lower than during the first nine months of the year.

**Table I.**—*United States: Number of Strikes, Workers Involved and Man-days Lost: 1941–1947 (9 months)**

| Year | Number of strikes | Number workers involved | Man-days idle during year |
|---|---|---|---|
| 1941 | 4,288 | 2,362,620 | 23,047,556 |
| 1942 | 2,968 | 839,961 | 4,182,557 |
| 1943 | 3,752 | 1,981,279 | 13,500,529 |
| 1944 | 4,956 | 2,115,637 | 8,721,079 |
| 1945 | 4,750 | 3,470,000 | 38,000,000 |
| 1946 | 4,985 | 4,600,000 | 116,000,000 |
| 1947 (9 mo.) | 3,000 | 2,250,000 | 29,825,000 |

*Compiled from *Monthly Labor Review*, United States Bureau of Labour Statistics.

All known work stoppages, arising out of labour-management disputes, involving six or more workers and continuing as long as a full day or shift were included in reports of the bureau of labour statistics. Figures on man-days idle and workers involved covered all workers made idle in establishments directly

**Table II.**—*Analysis by Industries of Work Stoppages Arising from Industrial Disputes in Great Britain: First Nine Months of 1947 and Corresponding Months in 1946*

| | January-September 1947 | | | January-September 1946 | | |
|---|---|---|---|---|---|---|
| Industry | Number stoppages beginning in period | Number working people involved | Aggregate number working days lost | Number stoppages beginning in period | Number working people involved | Aggregate number working days lost |
| Fishing | 3 | 2,600 | 13,000 | 2 | 6,600 | 63,000 |
| Coal mining | 806 | 243,500 | 747,000 | 1,029 | 176,400 | 347,000 |
| Other mining and quarrying | 11 | 700 | 2,000 | 8 | 600 | 1,000 |
| Brick, pottery, glass, chemical, etc. | 21 | 1,800 | 7,000 | 25 | 2,000 | 8,000 |
| Engineering | 55 | 11,500 | 74,000 | 148 | 90,700 | 489,000 |
| Shipbuilding | 91 | 62,400 | 300,000 | 84 | 15,100 | 181,000 |
| Iron, steel and other metal | 71 | 12,900 | 35,000 | 135 | 32,400 | 214,000 |
| Textile | 16 | 2,200 | 9,000 | 29 | 6,200 | 34,000 |
| Clothing | 14 | 2,600 | 11,000 | 30 | 14,300 | 101,000 |
| Food, drink, tobacco | 14 | 2,200 | 12,000 | 15 | 6,900 | 47,000 |
| Woodworking, furniture | 12 | 1,200 | 6,000 | 15 | 900 | 6,000 |
| Paper, printing, etc. | 5 | 1,200 | 9,000 | 7 | 3,400 | 4,000 |
| Building, etc. | 28 | 3,600 | 18,000 | 49 | 4,800 | 10,000 |
| Gas, water and electricity supply | 3 | 400 | 1,000 | 10 | 4,800 | 18,000 |
| Transport | 73 | 114,400 | 562,000 | 76 | 33,200 | 74,000 |
| Public administration services | 7 | 3,200 | 51,000 | 5 | 1,200 | 8,000 |
| Distribution, commerce, etc. | 19 | 18,200 | 72,000 | 16 | 8,800 | 64,000 |
| All other industries | 28 | 8,700 | 34,000 | 24 | 3,200 | 15,000 |
| Total | 1,277 | 493,300 | 1,963,000 | 1,707 | 411,500 | 1,684,000 |

**STRIKING MEMBERS** of the Conference of Studio Unions in Hollywood, Calif., assembled at one of the morale meetings held weekly during the mass picket trials of 1947

involved in a stoppage. Figures for 1947 were preliminary and subject to revision.

Table II compares the number and severity of work stoppages in Great Britain during the first nine months of 1947 and 1946. Strike idleness in 1947 through September was not quite as bad as during the corresponding months of 1946; the principal difference was in the smaller strike idleness in coal mining and transport industries. Shipbuilding and transport were the only major industries more seriously affected by strikes in 1947.

During the first nine months of 1947 there were 1,277 strikes in Great Britain, which compared with 1,707 in the corresponding months of 1946. There were 493,300 workers idle in the strikes of 1947, compared with 411,500 in the nine-month period of 1946, the increase being in the numbers of men who struck in the shipbuilding and transport industries. In man-days lost the 1947 strikes were more serious: 1,963,000 com-

**Table III.**—*Relative Frequency and Size of Labour Disputes in Great Britain in 1947 (nine months) and 1946*

| Month | Strikes in progress 1947 | Strikes in progress 1946 | Number of work people involved 1947 | Number of work people involved 1946 | Number of working days lost 1947 | Number of working days lost 1946 |
|---|---|---|---|---|---|---|
| January | 171 | 212 | 114,100 | 40,900 | 412,000 | 120,000 |
| February | 151 | 207 | 50,000 | 50,700 | 158,000 | 183,000 |
| March | 190 | 225 | 53,200 | 56,000 | 113,000 | 274,000 |
| April | 251 | 213 | 68,500 | 42,100 | 240,000 | 157,000 |
| May | 129 | 231 | 70,200 | 85,400 | 182,000 | 208,000 |
| June | 169 | 219 | 58,200 | 51,900 | 210,000 | 224,000 |
| July | 106 | 183 | 52,700 | 47,400 | 170,000 | 164,000 |
| August | 123 | 184 | 46,600 | 44,000 | 121,000 | 169,000 |
| September | 114* | 205 | 85,100 | 42,500 | 354,000 | 185,000 |
| October | ... | 238 | ... | 70,700 | ... | 289,000 |
| November | ... | 209 | ... | 44,600 | ... | 133,000 |
| December | ... | 97 | ... | 40,900 | ... | 120,000 |

Compiled from *The Ministry of Labour Gazette* (London).
*Figures for Sept. 1947 are provisional and subject to revision; those for earlier months have been revised where necessary in accordance with latest information.

**Table IV.**—*Analysis of Principal Causes of Industrial Disputes in Great Britain in 1946*

| Principal causes | Number begun during 1946 Number | Number begun during 1946 Per cent | People directly involved Number | People directly involved Per cent |
|---|---|---|---|---|
| Wage Increase | 254 | 11.5 | 82,000 | 20.3 |
| Other wage disputes | 707 | 32.0 | 88,000 | 21.7 |
| All wage disputes | 961 | 43.5 | 170,000 | 42.0 |
| Hours of labour | 63 | 2.9 | 15,000 | 3.7 |
| Employment of particular classes or persons | 287 | 13.0 | 74,000 | 18.3 |
| Other working arrangements and discipline | 778 | 35.3 | 78,000 | 19.2 |
| Trade unionism | 81 | 3.7 | 47,000 | 11.6 |
| Sympathetic action | 16 | 0.7 | 8,000 | 2.0 |
| Other causes | 19 | 0.9 | 13,000 | 3.2 |
| Total | 2,205 | 100.0 | 405,000 | 100.0 |

*The Ministry of Labour Gazette* (London).

**Table V.**—*Number* and Time Loss in Canadian Labour Disputes, 1947 (nine months) and 1946, by months*

| | 1947 | | | | 1946 | | | |
|---|---|---|---|---|---|---|---|---|
| Month | No. of strikes | No. of employees involved | Time loss in working days | Per 1,000 available work days | No. of strikes | No. of employees involved | Time loss in working days | Per 1,000 available work days |
| Jan. | 12 | 2,203 | 28,519 | 0.38 | 13 | 2,957 | 18,948 | 0.25 |
| Feb. | 13 | 17,219 | 199,679 | 2.67 | 16 | 3,594 | 11,891 | 0.16 |
| March | 10 | 792 | 378,057 | 5.05 | 22 | 4,299 | 45,846 | 0.61 |
| April | 21 | 3,151 | 363,886 | 4.86 | 22 | 4,924 | 45,764 | 0.61 |
| May | 32 | 18,053 | 365,424 | 4.89 | 29 | 46,681 | 566,410 | 7.57 |
| June | 19 | 2,844 | 166,370 | 2.22 | 25 | 31,556 | 933,876 | 12.49 |
| July | 18 | 1,707 | 24,355 | 0.33 | 33 | 28,226 | 915,911 | 12.25 |
| Aug. | 21 | 5,755 | 52,314 | 0.70 | 20 | 5,180 | 870,694 | 11.64 |
| Sept. | 25 | 5,202 | 276,859 | 3.69 | 18 | 2,036 | 657,714 | 8.79 |
| Oct. | .. | ... | ... | ... | 10 | 6,881 | 393,296 | 5.43 |
| Nov. | .. | ... | ... | ... | 12 | 2,221 | 33,890 | 0.47 |
| Dec. | .. | ... | ... | ... | 5 | 839 | 23,804 | 0.33 |
| Total | 171 | 56,926 | 1,855,463 | ... | 225 | 139,394 | 4,518,044 | ... |

Compiled from *Canadian Labour Gazette*. All 1947 figures are preliminary.
*These figures relate only to the actual number of strikes and lock-outs in existence and the workers involved during the year, not being a summation in each case of the monthly figures.

pared with 1,684,000 in 1946.

In Great Britain wage questions accounted for 43.5% of the total number of stoppages in 1947 and 42.0% of the total number of workpeople directly involved.

The few disputes which arose on questions of hours of labour accounted for only 2.9% of the total number of workpeople directly involved. Disputes in connection with the employment of particular classes of persons, working rules and discipline made up more than half of the total number of stoppages (Table IV).

The number of strikes in Canada, and particularly in the numbers of workpeople involved and man-days lost (Table V) decreased to an extent comparable with the decline in strikes in the United States.

(*See* also LABOUR UNIONS; NATIONAL LABOR RELATIONS BOARD; NATIONAL MEDIATION BOARD; UNITED STATES.)

(D. D. L.)

## Strontium Minerals.

Celestite production in the United States declined from 2,784 short tons in 1945 to 243 tons in 1946, and supply was maintained by increasing imports from 3,691 tons to 4,507 tons. (G. A. Ro.)

**Submarines:** *see* NAVIES OF THE WORLD.
**Subsidies:** *see* AGRICULTURE.
**Sudan:** *see* ANGLO-EGYPTIAN SUDAN; FRENCH OVERSEAS TERRITORIES.

## Sugar.

The U.S. sugar supply for 1946–47 was the largest in several years. Production in areas supplying the United States increased to about 10,500,000 tons, compared with 9,500,000 tons average prior to World War II. Price guarantees to domestic sugar producers and higher prices for Cuban sugar under terms of the Cuban Purchase agreement improved the supply. A record Cuban crop more than offset a loss in Philippine production.

Total sugar production in the United States proper was estimated for 1947 at 2,056,000 tons of beet and cane, compared with 1,820,000 tons in 1946 and an average of 1,818,000 tons during 1936–45. The 1947 crop included 1,705,000 tons of beet and 351,000 tons of cane sugar. The sugar beet crop set a new record in 1947, amounting to 12,248,000 tons compared with 10,562,000 tons in 1946 and an average of 9,617,000 tons during 1936–45. Acreage planted was 11% above that of 1946—887,000 compared with 802,000; the average for 1936–45 was 781,000. The yield was also high—13.8 tons per acre compared with an average of 12.3 tons. Approximately 1,824,000 tons of raw sugar were manufactured from the crop—19% above the output of 1946.

Sugar cane for sugar and seed in 1947 was reported at 5,353,000 tons compared with 5,967,000 tons in 1946 and an average of 6,049,000 tons during 1936–45. The acreage was higher but the yield was only 16.6 tons per acre compared with 19.5 tons in 1946 and a 10-year average of 20.6 tons. A hurricane destroyed much of the crop in Louisiana and Florida in Sept. 1947.

Table I.—*U.S. Sugar Beet Production*
*1947, 1946 and 10-Year Average 1936–45*
(In thousands of short tons)

| State | 1947 | 1946 | 10-yr. average | State | 1947 | 1946 | 10-vr. average |
|---|---|---|---|---|---|---|---|
| California . . . | 2,792 | 2,076 | 1,939 | Utah . . . . | 766 | 568 | 553 |
| Colorado . . . | 2,450 | 1,920 | 1,887 | Michigan . . . | 469 | 814 | 803 |
| Idaho . . . . . | 1,782 | 1,274 | 846 | Wyoming . . | 454 | 421 | 489 |
| Montana . . . | 893 | 891 | 839 | Ohio. . . . . | 158 | 234 | 291 |
| Nebraska . . . | 806 | 825 | 805 | Other states. . | 1,728 | 1,536 | 1,164 |

Table II.—*U.S. Sugar Cane Production*
*1947, 1946 and 10-Year Average 1936–45*
(In thousands of short tons)

| State | 1947 | 1946 | 10-yr. average |
|---|---|---|---|
| Louisiana . . . . . . . . . . . . . | 3,870 | 4,488 | 4,812 |
| Florida . . . . . . . . . . . . . . | 1,030 | 1,037 | 784 |

TRADING CIRCLE at the New York sugar exchange as it reopened on July 1, 1947, following the removal of price controls on sugar futures. Trading was discontinued in 1942 with the imposition of price controls

Maple sugar production was estimated at 305,000 lb. in 1947 compared with 372,000 lb. in 1946. Honey production was put at 210,039,000 lb. compared with 213,814,000 lb. in 1946. The Cuban sugar cane crop was about 6,400,000 tons in 1947—almost 2,000,000 tons above the previous year's production. The Puerto Rican crop was above the prewar level and about the same as in 1941.

The total supply of sugar for the United States in 1947 provided about 94.9 lb. per capita, almost 25% more than in 1946, and only 2 lb. less than the prewar average. The supply was allocated by the International Emergency Food council (I.E.F.C.), which gave an allotment of 7,150,000 tons to the United States. Following the end of rationing July 12, 1947, distribution of sugar rose. On Aug. 30 all controls were removed and consumption increased. Price controls ended Oct. 30 but no general advance in prices resulted since consumers had apparently been getting ample supplies. Annual consumption was estimated at about 95 lb. per capita in 1947, 75 lb. in 1946, and about 96.5 lb. in the prewar years. Supplies were low in some areas early in 1947, and rations were held to 25 lb. per person for domestic use; industrial use was also controlled at 60% of the 1941 base.

The Sugar Control Extension act passed in March 1947 transferred the control of sugar to the U.S. department of agriculture. It also extended rationing and price control to Oct. 31, 1947, and inventory control to March 1948, but these controls were discontinued in June and August as the supply increased. Steady improvement in the Cuban crop led the I.E.F.C. to in-rease the U.S. allotment in June by 350,000 tons.

The Sugar act of 1948 which replaced the act of 1947 on Dec. 1, 1947, authorized the secretary of agriculture to determine he amount of sugar needed to meet requirements for the enuing year, and to fix quotas for domestic and imported sugar. The 1948 act also authorized the secretary of agriculture to make payments to growers on a basis of 80 cents per 100 lb. of aw sugar.

Payments to beet growers in 1946 amounted to $28,200,000, o cane growers $6,600,000; Hawaii $6,574,000; Puerto Rico 15,200,000 and Virgin Islands $75,000, total $55,038,000. The verage price to growers in 1946 for beets was $13.70 per ton, ane $7.92 per ton. Retail prices ranged from $5.71 per 100 lb. n 1941 to about $10 per 100 lb. in 1947.

On Nov. 28, 1947, the president issued a proclamation reestablishing quotas which had been suspended since April 1942; he new quotas were scheduled to become effective in 1948 after ublic hearings.

The sugar quota law became a subject of vigorous controversy in the International Trade organization meetings because f the charge that it conflicted with the general policy of the United States to ask for the reduction of trade barriers of ll types.

World sugar production in the 1946–47 crop year was estimated at 31,231,000 tons, 19% above the 26,283,000 tons of 1946 but below the prewar (1935–39) average of 34,783,000 ons. The increases were in Cuba, with a crop more than twice he prewar level, Puerto Rico, Brazil and the United States. France's crop was one-fourth below the prewar level, Germany's about one-half and India's almost normal. Both Formosa and the Philippines were down to less than 10% of prewar production. Recovery was expected to continue rapidly, however, and Europe had 40% more sugar production in 1947 than a year earlier; South America had 17% more.

The goals for sugar beets and cane for 1948 were the same as for 1946—beets 966,000 ac. and cane 320,000 ac. A guarantee of $14.50 per ton for beets was offered in 1946 but there was no support price for 1947 sugar cane. (*See* also BEEKEEPING; MAPLE PRODUCTS; PRICE ADMINISTRATION, OFFICE OF; SYRUP, SORGO AND CANE.) (J. C. Ms.)

**Suicide Statistics.** The death rate from suicide in the United States during 1947 was practically at the level of that for 1946, according to provisional estimates by the Metropolitan Life Insurance company. Final figures for the number of deaths from suicide in the United States during 1946 were not yet available at the end of 1947; the latest estimate was 15,174, a rate of 10.8 per 100,000 population. In Canada, the number of deaths from suicide during 1946 was 985, the rate being 8.0 per 100,000 population. During the same year, England and Wales recorded 4,493 deaths from suicide and a rate of 10.5 per 100,000 population.

It had been observed that death rates from suicide were high in those areas of the United States where the death rates from homicide were low. Thus, in 1945, the death rates from suicide in the south Atlantic, the east south central, and the west south central states were at the relatively low levels of 8.7, 6.5, and 7.5 per 100,000. The homicide death rates in the same areas were quite high, namely 10.0, 11.3 and 8.9, respectively. This situation reflected, in large degree, the low mortality from suicide and the high mortality from homicide among the Negro population of these areas. On the other hand, in the northern tier of the country, with a small proportion of Negro population, the death rates from suicide averaged a little over 12 per 100,000, while the homicide rate was, in most states, well under 4 per 100,000.

Mortality from suicide in 1945 was highest in the Pacific coast states, where the rate was 16.0 per 100,000 population; for the mountain states, the rate was 11.5.

A survey of the methods of suicide among white industrial policyholders of the Metropolitan Life Insurance company showed in some instances striking changes over the period from 1921 to 1946 (*Statistical Bulletin*, May 1947). Among white males, firearms were the leading means of suicide, being used in about one-third of the cases throughout this period. Hanging, however, increased in importance as a means of suicide among white males, from 17% of the total in 1921–25 to 27½% in 1946. There was relatively little change in the proportion using either asphyxiation or drowning; the former accounted for 17½% of the total in 1921–25 and 15½% in 1946, while the latter was used in a little under 6% of the cases for the period as a whole. The use of poisons decreased from 14½% of all means in 1921–25 to 7% in 1946, and the use of cutting or piercing instruments from 7⅓% to 4½%. On the other hand, jumping from high places and crushing increased in importance as a means of suicide. On the whole, the trend in the means of suicide among white females followed that among white males, although the importance of the various means differed between the two sexes.

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**Sullivan, John Lawrence** (1899– ), U.S. government official and lawyer, was born on June 16 in Manchester, N.H., and attended Dartmouth college and Harvard university. Admitted to the New Hampshire bar in 1923, he began practising law the following year. He soon became senior partner in law firms both in his native city and in Washington, D.C. Sullivan was assistant secretary of the treasury (1940–44), assistant secretary of the navy for air, 1945–46, and undersecretary of the navy, 1946–47. His appointment as secretary of the navy was announced Aug. 21, 1947, although, like the secretaries of the army and air under the new national defense organization, he was not given cabinet rank.

Sullivan appeared before the president's Air Policy commission on Nov. 30 and denied that air power was the prime need of U.S. security, citing as evidence the performances of the naval branch of the service in World War II. He did, however, recommend a program to strengthen the navy's air arm.

**Sulphur.** The United States normally produced about 80% of the world output of sulphur, Italy 12% and various minor countries the remaining 8%. War conditions seriously curtailed the Italian output, increased that of the United States, and brought in Mexico and Argentina as new producers.

**United States.**—The salient data of the sulphur industry of the United States are shown in the table below, in thousands of short tons.

| | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|
| Production | 3,876.0 | 2,843.5 | 3,604.4 | 4,203.6 | 4,322.8 |
| Shipments | 3,504.0 | 3,308.3 | 3,941.4 | 4,293.3 | 4,623.6 |
| Imports | 25.6 | 18.7 | ... | ... | ? |
| Exports | 655.5 | 764.4 | 756.2 | 1,055.8 | ? |
| Available supply | 2,877.2 | 2,562.6 | 3,185.2 | 3,237.5 | ? |
| Consumption | 2,768 | 2,836 | 3,270 | 3,316 | ? |
| Stocks (Producers') | 4,800 | 4,997 | 4,600 | 4,484 | 4,221 |

Production in the first three-quarters of 1947 was 3,596,749 short tons, 14% over the same period of 1946, while shipments advanced 24%, to 4,046,728 tons. The increased activity was to be attributed mainly to the expanding exports. (G. A. Ro.)

**Sumatra:** *see* NETHERLANDS INDIES.

## Sunday Schools.

The most conspicuous world event of 1947 relating to the Sunday school was the meeting of the World Council of the World's Sunday School association in Birmingham, Eng., on Aug. 18–22. About 100 persons from more than 40 countries attended this business meeting of the governing body of the association.

Sunday-school attendance in some countries of Europe had returned to prewar figures by 1947. Shortage of teachers, however, was still a serious problem; it resulted in part from the fact that many teachers discontinued teaching during World War II and had not returned to all their former activities, and in part to the fact that young people who grew up during the disturbed war years did not develop the practice and habit of working in the Sunday school.

Significant forward-looking actions were taken in the Birmingham meeting, among which were the following: (1) To change the name of the World's Sunday School association to World Council of Christian Education; (2) To establish a department of audio-visual aids and a department of children's work; (3) To co-operate with the World Council of Churches in youth work and (4) To hold the 1950 World's convention in North America.

A Joint Commission on Christian Education representing the International Missionary council, the World Council of Christian Education and the World Council of Churches was established, the World Council of Christian Education to carry major administrative responsibility.

Several national Sunday school conventions were held, among which were these: The first postwar convention of the Finnish Sunday School association; the first postwar convention of the Sunday School Association of Czechoslovakia; and the International (U.S. and Canada) Sunday School convention of the International Council of Religious Education in Des Moines, Ia.

The International Council of Religious Education published a significant report of a special committee of which Prof. Paul H. Vieth was chairman, entitled "The Church and Christian Education." (*See* also CHURCH MEMBERSHIP.) (F. L. KP.)

## Superphosphates.

The more important features of the superphosphate industry in the United States are shown in the following table, in thousands of short tons.

| | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|
| Production | 6,293.0 | 6,692.4 | 7,372.1 | 7,847.6 |
| Shipments | 3,935.3 | 3,951.4 | 4,333.0 | 4,421.7 |
| Stocks | 791.4 | 794.8 | 808.0 | 646.3 |
| Exports | 268.6 | 205.9 | 207.2 | 270.3 |
| Imports | 2.8 | 1.3 | 2.0 | 2.8 |
| Phosphate rock used | 4,067.6 | 4,123.0 | 4,419.8 | 5,157.0 |

About two-thirds of the phosphate rock output goes into the production of superphosphates. (G. A. RO.)

## Supreme Court of the United States.

Frederick M. Vinson of Kentucky, appointed by President Truman to be the 13th chief justice of the United States, presided over a session of the court for the first time Oct. 7, 1946, the day on which the court convened for its 1946–47 term, known as the October term, 1946. The term continued through June 23, 1947, the latest date on which the court had adjourned its annual term during the 20th century.

Associate Justice Robert H. Jackson returned to the court after a year's absence during which time he was engaged as chief prosecutor for the United States at the trial of the major nazi war criminals before the International Military tribunal in Nuernberg, Ger.

The court disposed of 1,366 cases, the greatest number at any one term in its history. Largely responsible for the size of the court's docket was the fact that an unprecedented number of petitions, 528, were filed by indigent persons, mostly prisoners. Of these 60% came from inmates of prisons in the state of Illinois. Of the 142 cases disposed of by written opinion as distinguished from disposition by mere denial of petitions for review and by memorandum opinion, the federal government was a party in 84, and of these approximately 72% were decided in its favour. As had been the case during the past several terms, controversies concerning federal regulation of business including those affecting labour relations predominated.

Dissenting votes were cast in 84 of the cases decided by written opinion.

**Members of the Court.**—The United States supreme court was composed in 1947 of the following members (dates indicate year appointment was confirmed by the senate): chief justice, Frederick M. Vinson (1946); associate justices, Hugo L. Black (1937), Stanley F. Reed (1938), Felix Frankfurter (1939), William O. Douglas (1939), Frank Murphy (1940), Robert H. Jackson (1941), Wiley B. Rutledge (1943) and Harold H. Burton (1945). (*See* also LAW.) (H. B. WY.)

## Surgery.

In the surgical treatment of cancer of the oesophagus Richard H. Sweet showed that of the patients surviving the operation 77% were alive at the end of 6 months, 50% alive at the end of 12 months, and 37.5% at the end of 24 months. Alton Ochsner, Michael E. DeBakey and J. Leonard Dixon demonstrated that the surgical treatment of cancer of the lung which previously gave extremely poor results now offered a much better outlook, even though these cases were seen relatively late because diagnosis had usually not been made early. Slightly more than half of the patients surviving the operation for cancer of the lung lived for six months; 40% for one year, and 23% for five years or longer. In addition to the curative treatment of cancer either by surgical removal or by destruction *in situ* by X-ray or radium, much was accomplished in 1947 by the palliative use of substances which tend to retard the growth of tumours. (*See* CANCER.)

In order to prepare a patient with a large hernia of the abdominal wall for operation, particularly an extremely fat individual, Goni Moreno of Buenos Aires advocated introduction of air into the abdominal cavity as a preliminary procedure. In this way, the patient gradually becomes accustomed to increasing pressures within the abdomen, making it possible for him to tolerate these pressures when the hernia is repaired. The method has been found to be particularly valuable in older people who are obese and who have other conditions, such as heart disease and diabetes.

Francis D. Moore, Waltman Walters and associates, K. S. Grimson and F. H. Lahey critically analyzed their results following treatment of ulcer of the duodenum with vagotomy—cutting the vagus nerve—and became much more conservative in their indications for advising this procedure. They emphasized the large number of undesirable symptoms which persist after the operation.

Cirrhosis of the liver associated with varicose veins of the oesophagus and stomach frequently causes severe haemorrhage from the stomach and may even result fatally. As previously reported, an attempt to relieve this condition consisted of anastomosing the vascular system of the liver with the systemic vascular system in order to short-circuit around the obstructive cirrhosis in the liver. Dallas B. Phemister and Eleanor M. Humphreys removed those portions of the oesophagus and stomach in which these varicose veins are located in order to prevent recurrences of haemorrhage. Another extremely undesirable complication of cirrhosis of the liver is an accumulation of fluid within the abdomen, which formerly had required repeated aspirations in order to empty the abdominal cavity. Roy C. Crosby and Edward A. Cooney successfully used a glass button inserted into the abdominal wall, permitting the escape of fluid within the peritoneal cavity into the subcutaneous tissues, where it can be absorbed. In this way repeated aspirations of the fluid was obviated.

Considerable work was done in 1947 on the use of drugs to produce dilatation of the vessels and thus increase the blood supply to the extremities. R. H. Lyons and associates, D. Chess and F. F. Yonkmann, and K. S. Grimson emphasized the value of the systemic administration of these drugs in order to produce dilatation. Although apparently of value in the treatment of severe arterial disease, as shown by M. E. DeBakey, George Burch, Thorpe Ray and Alton Ochsner, such administration may actually do harm in the treatment of a patient with disease of the vessels of the extremity, because by producing a generalized dilatation of the vessels the pressure within the entire vascular system becomes decreased. In this way that portion of the body in which blood vessels are diseased and in which there is the greatest demand for blood will receive less blood than if local dilatation of the diseased vessels is accomplished and contraction of the other vessels is maintained. Normally, in order to produce dilatation of the vessels in a particular area, a lending-borrowing mechanism is set up whereby the blood is shunted from the rest of the body into that area in which it is most needed. George E. Burch and associates demonstrated that the systemic use of vasodilator drugs in the treatment of diseases of the arteries of the extremity is not rational and should not be used. It had been generally agreed that in the younger persons with diseased blood vessels of the extremities in which the spasm of the artery is largely responsible for the decrease in the blood supply, the removal of the sympathetic nerves is of value. This procedure, however, was not used a great deal in older persons with hardening of the arteries. Gaza deTakats and M. H. Evoy showed that even in the older persons with arteriosclerosis sympathectomy is of value in relieving symptoms caused by diminished blood flow. Not only were the patients able to walk better, but pain was relieved in a large majority of cases. The results obviously were not as good as could be obtained in younger persons.

Not infrequently it is necessary to use tubes and plates in the body in order to conduct fluid or to fill defects. Whereas previously rubber and other types of material had been used, F. D. Ingraham and associates suggested a plastic substance which can be easily handled and produces practically no reaction in the body. It had the great advantage over some of the metals, such as vitallium, in that it could be moulded and cut.

In order to cure relatively simple congenital cysts and sinuses difficult to treat, P. Jacobson suggested the destruction of such cysts by means of electrocoagulation. Because the persistence of the sinuses in these conditions is caused by the persistence of the secreting membrane, Jacobson believed that the best and simplest result could be obtained by destruction of the secreting cells by the electric cautery.

L. A. Grossman and associates, G. J. Strean and associates and E. E. Muirhead and associates advocated and used irrigation of the peritoneal cavity with various fluids to remove waste products resulting from kidney shutdown associated with certain surgical procedures. (*See* also ANAESTHESIOLOGY; MEDICINE.)

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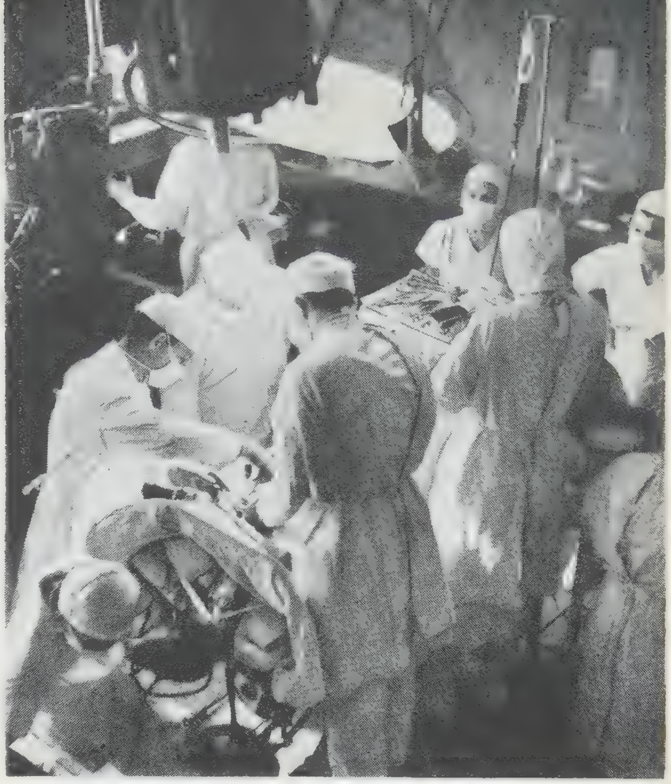
(A. O.)


SURGEONS operating on a "blue baby" at Johns Hopkins hospital, Baltimore, Md., in March 1947, as a television camera (upper left) carried the scene to an audience of doctors elsewhere in the hospital

## Surinam

(DUTCH GUIANA). A Netherlands colony in northeastern South America, bounded on the east, south, west and north, respectively, by French Guiana, Brazil, British Guiana, and the Atlantic ocean. Area, 54,291 sq.mi.; pop. (Jan. 1, 1942, official figure), 183,730 (1945 est., 178,000). The capital is Paramaribo (pop., 60,723). The governor in 1947 was Dr. J. C. Brons.

**History.**—A widely publicized colonization scheme was advanced by the Freeland league, an organization for resettlement of Jewish *emigrés,* providing for settlement of from 50,000 to 100,000 Jewish displaced persons in Surinam within two years. A committee representing the league went to Surinam in mid-April to discuss the plan with Gov. Brons and other officials, and the colonial legislature voted on July 7 to admit up to 30,000 Jewish displaced persons.

Six soldiers and police were seized at Paramaribo on Nov. 15 in an alleged revolutionary plot. The colonial legislature during the year approved the immediate undertaking of an aerial photographic survey of the rugged and largely unexplored interior by Royal Dutch Airlines (K.L.M.) planes.

**Education and Religion.**—Approximately 122 schools (4 ranking as colleges) had an enrolment of more than 22,000 in 1947. About 75 of the schools were operated by missionary societies. Religious adherents in Surinam were classified as follows: Protestants, 42,027; Catholics, 29,124; Jews, 1,069; Mohammedans, 41,300; Hindus, 32,000; Confucians, 13,000; animists, fetishists, etc., 22,000.

**Finance.**—The monetary unit is the guilder (or florin) of 100 cents, exchanging at 53.33 cents U.S. currency. Preliminary budget estimates of income for 1947 were 12,533,398 guilders; expenditures, 12,515,932 guilders. Inflation continued to be a serious problem during the year, and shortage of dollar exchange complicated the economic picture. The Netherlands government announced plans during 1947 for a five-year program of economic development for Surinam to cost 40,000,000 guilders.

**Trade.**—Exports for the first six months of 1947 were valued at 10,914,546 guilders as against 4,401,206 guilders for the same period in 1946. Imports for the first half of 1947 totalled 13,999,245 guilders as against 6,714,049 guilders in the same period of 1946. Exports of bauxite, by far the most important export product, were almost as large in the first half of 1947 as for the entire year 1946. Total exports for 1946 were valued at 11,513,612 guilders and imports at 15,710,868 guilders. The chief export items in 1946, with value in guilders, were bauxite, 8,489,320; lumber, 831,902; balata, 703,365; rice, 513,736; coffee, 434,854; fruits, 127,002. Principal imports in that year were mineral oils and derivatives, 1,661,788; cotton goods, 1,369,965; grain meal, 957,781; butter, 412,572; cut tobacco, 379,112; piece goods, 375.799; machines and electrotechnical articles, 356,693; miscellaneous machines and machine tools, 349,665; motor and other vehicles, 306,906.

**Agriculture.**—Sugar production in 1946 was 5,456 short tons. Production of citrus fruits in 1946 was 30,000,000 units as against 15,500,000 in 1945. Paddy rice production in 1946 was 114,639,200 lb. as against 77,601,920 lb. in 1945. Sugar workers had to be imported temporarily from Barbados, St. Lucia, and other West Indian islands. Coffee production also increased in 1946.

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## Surplus Property Disposal.

Original estimates of the maximum amount of government property expected to be declared surplus to the War Assets administration and other U.S. domestic disposal agencies were revised downward in 1947 with the receipt of new information from owning agencies. At one time it was expected that this total would be in the neighbourhood of $34,000,000,000. Later estimates indicated that the amount to be acquired was approximately $29,500,000,000. Amounts in addition to existing inventory expected to be declared surplus totalled only $1,300,000,000.

This revision of estimates brought closer to finality the job of disposing of surplus left over from World War II. By the end of Sept. 1947 the total in inventory amounted to $7,600,000,000. The disposal of personal property was expected to be completed by June 30, 1948. After that date, the principal disposal problem would be that of real property, which would comprise approximately three-fourths of total inventory by June 1948.

Real property was expected to be a program of long duration in view of national security considerations, legislative restrictions and the difficulties of marketing hard-to-sell property.

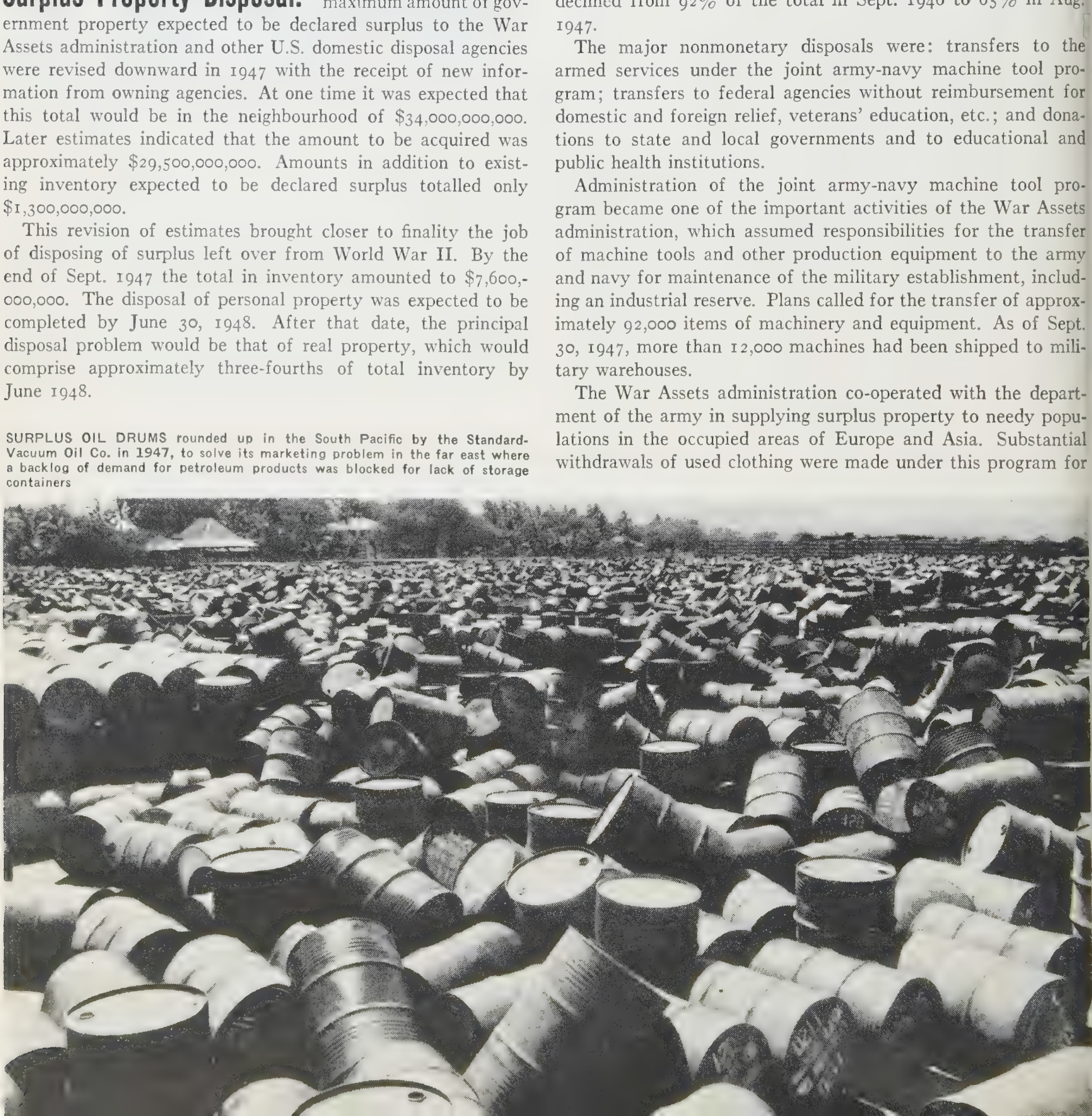
The inventory of surplus property available for disposal by the designated selling agencies had been declining since June 1946, because of decreasing acquisitions, the large excess of disposals over acquisitions, and the diminishing marketability of the types of property left in inventory. Increasingly larger portions of available inventory consisted of consumer and producer goods of poor quality, special purpose machinery and "hard-to-sell" properties. The effect of these factors was shown by decreased sales, increased nonreimbursable transfers and other miscellaneous disposals, increased disposals of scrap and residual materials and decreased rate of return on sales.

Nonmonetary disposals accounted for an increasing proportion of the total by the War Assets administration in the field of consumer and producer goods. These disposals increased from about $23,000,000 in Sept. 1946 to a peak of $82,000,000 in Aug. 1947. The share of total disposals represented by sales declined from 92% of the total in Sept. 1946 to 65% in Aug. 1947.

The major nonmonetary disposals were: transfers to the armed services under the joint army-navy machine tool program; transfers to federal agencies without reimbursement for domestic and foreign relief, veterans' education, etc.; and donations to state and local governments and to educational and public health institutions.

Administration of the joint army-navy machine tool program became one of the important activities of the War Assets administration, which assumed responsibilities for the transfer of machine tools and other production equipment to the army and navy for maintenance of the military establishment, including an industrial reserve. Plans called for the transfer of approximately 92,000 items of machinery and equipment. As of Sept. 30, 1947, more than 12,000 machines had been shipped to military warehouses.

The War Assets administration co-operated with the department of the army in supplying surplus property to needy populations in the occupied areas of Europe and Asia. Substantial withdrawals of used clothing were made under this program for



SURPLUS OIL DRUMS rounded up in the South Pacific by the Standard-Vacuum Oil Co. in 1947, to solve its marketing problem in the far east where a backlog of demand for petroleum products was blocked for lack of storage containers distribution through army channels. Provision also was made for release of surplus property to other war-torn countries.

The use of surplus property to alleviate distress from flood and other catastrophes was authorized by congress and a "mercy" priority was established overriding all other priorities under the Surplus Property act. The new procedures were used by the War Assets administration in making surplus property available for the alleviation of damage wrought in Florida, Mississippi and Louisiana by hurricanes and by fires in Maine.

Important transfers of property were made to the Federal Works agency for the use of educational institutions providing courses for veterans. Machine tools and other classes of property were donated in large amounts to educational institutions, state and local governments and health and welfare agencies, for the costs of handling and transportation.

Procedures for the sale of surplus property to veterans were further simplified. Under new procedures it no longer was necessary for veterans to apply for preference certificates in order to purchase surplus property, with the exception of aircraft, commercial laundry equipment and railroad transportation equipment. The only requirements were that the veteran present evidence of his honourable discharge and, for other than "set-aside" items, to make a statement that the property was being purchased for his own small business, professional or agricultural enterprise. This change in procedure made it easier for the veteran to exercise his priority and greatly increased the number of potential buyers. It also eliminated certain War Assets administration expenses by reducing the size of the certification staff.

*Disposals of Surplus Property*

(All disposal agencies, cumulative through Sept. 30, 1947, in thousands of dollars)

| | |
|---|---|
| Total | $20,557,018 |
| Real property | 4,806,431 |
| Consumer and producer goods | 7,609,723 |
| Aircraft | 6,250,637 |
| Aircraft components | 601,395 |
| Electronics | 443,552 |
| Food and agricultural products | 106,411 |
| Marine property | 110,545 |
| Farm land | 74,177 |
| Housing properties | 89,876 |
| Community facilities | 99,826 |
| Land (continental and territories) | 44,496 |
| Patrol vessels | 106,950 |
| Domestic activity by Office of Foreign Liquidation commissioner | 44,540 |
| Property in territories and possessions (WAA) | 168,459 |

Under an expansion of the program for disposal of surplus at nominal prices to nonprofit schools and public health institutions, more than 200 items were added in Sept. 1947 to the list of property available at a discount of 95% from fair value. Approximately 80% of all surplus consumer and producer goods became subject to this discount when disposed of for health or educational purposes. All other types of personal property were available at a discount of 40%. (J. S. Cs.)

**Swains Island:** *see* SAMOA, AMERICAN.

**Swaziland:** *see* BRITISH SOUTH AFRICAN PROTECTORATES.

## Sweden.

A democratic monarchy of northern Europe. Area, 173,390 sq.mi.; pop. (Dec. 31, 1946) 6,763,685. Capital, Stockholm (pop., Dec. 31, 1946), 690,108. Other principal cities (Dec. 31, 1946), were Göteborg (Gothenburg) (325,563), Malmö (176,659), Norrköping (80,228), Hälsingborg (69,051), Örebro (61,492). Religion, Lutheran Christian. Ruler in 1947: King Gustavus V. Prime minister: Tage Erlander.

**History.**—During 1947 Sweden's main difficulty centred around the problems of international finance. The country's gold reserves dwindled rapidly as the people bought from abroad goods long desired but unobtainable during World War II. In the spring Minister Ernst Wigforss asked for authorization to pay Swedes in Swedish crowns for their holdings abroad in "hard-money" countries; in the fall the measure was applied and Swedish reserves were strengthened temporarily. In November the government announced its determination to reduce imports by 420,000,000 kr. in 1948.

Supplies of food were short, although far from desperate, and a disastrously dry summer added to the complications. Only the potato crop was really sufficient for food needs. Fodder crops were dangerously low, and also grains. Sweden reduced the bread ration to 5.04 oz. per person per day, claimed to be the lowest in the world. Butter was set at 1.26 oz. and sugar 1.81 oz.

The 1946 trade agreement with the U.S.S.R. was increasingly attacked, but it could not be held responsible for any of Sweden's shortages. Actually Sweden's imports from the Soviet Union were several times its exports to the Soviet Union, both in normal trading, and in the slight beginnings of trade under the five-year agreement. It was repeatedly emphasized in Sweden that the much-castigated billion kronor credit was not a guarantee to sell the Soviet Union that value of goods; it was an agreement by the Swedish government to advance up to that amount to Swedish industry for its sales to the U.S.S.R. Some 200,000,000 kr. of such purchases had been contracted for, but in many cases delivery was not due for three or four years. The soviets were buying rather slowly because of a hesitancy to pay the high prices demanded.

Sweden had extended large loans or credits to many European countries; it was not selling enough goods to potential cash customers like the United States. Instead it was buying from the United States, and thus its gold reserves of 1,600,000,000 kr. on Jan. 1 had sunk to 375,000,000 kr. by the end of October.

Almost no time was lost by industrial strife in 1946 or 1947: labour disturbances of all kinds caused only 26,425 working days to be lost in 1946. War neglected highways were being rebuilt. Ship construction was at a high level: in December 284,000 gross tons of shipping were under construction, more than half of it on Norwegian order. A great power plant was being built at Hårspranget falls on Lule river, with three generators of 105,000 kw. capacity each.

**Education.**—In 1943–44 there were 533,890 pupils in the regular elementary schools, and 99,253 in continuation schools. In 1946 in the middle schools there were 8,035, and in secondary schools, 63,826. In 1946, 4,154 took the "studentexamen," and 9,132 were registered in the 5 institutions of university grade. The number of pupils in Stockholm schools had doubled in the past ten years, with the offering of free meals, books, medical and dental examination. Space became a serious problem. The state provided also a large number of special industrial and continuation schools.

**Defense.**—Plans were made for scrapping 28 naval vessels of a total of 17,000 tons, several of them very old, but called into coastal patrol service during World War II.

**Finance.**—The monetary unit is the krona (worth 27.85 U.S. cents in 1947).

The government financial picture must be given in two separate accounts.

Table I.—*Data of Finance in Sweden*

*(In millions of kronor)*

| | | 1944–45 | 1945–46 | 1947–48 estimate |
|---|---|---|---|---|
| Ordinary account: | revenue | 2,875 | 3,173 | 3,862 |
| | expenditures | 3,632 | 2,764 | 2,998 |
| Capital account: | revenue | 3,250 | 3,528 | 4,174 |
| | expenditures | 4,103 | 3,328 | 3,406 |
| Public debt | | 10,953 | 11,383 (Dec. 31, '46) | |

| | 1945 | End of Aug. 1946 |
|---|---|---|
| Notes in circulation | 2,782 | 2,534 |
| Gold reserve | 1,062 | 1,046 |
| Commercial bank deposits | 6,847 | 7,199 |
| Savings bank deposits | 5,468 | — |

**Trade.**—General trade statistics, mentioning only the chief countries concerned are shown in Table II. During Jan. to June of 1947 Great Britain held first place as Sweden's customer, buying 180,000,000 kr. worth of goods; the U.S. was second with 134,500,000 kr.; then came Norway (96,000,000 kr.), Belgium (82,500,000 kr.), France (75,500,000 kr.), and Argentina (71,000,000 kr.). Sweden's imports before World War II came in large part from Germany, but in the first part of 1947 the U.S. led as supplier to Sweden with 702,000,000 kr. worth of goods; next came Great Britain (201,000,000 kr.), Belgium (115,500,000 kr.), Switzerland

Table II.—*Imports and Exports, Sweden*
(*In 1,000 kronor*)

| | 1939 | 1944 | 1945 |
|---|---|---|---|
| Imports (total) | 2,498,700 | 1,677,382 | 1,084,341 |
| From Germany | 619,800 | 798,466 | 88,342 |
| Switzerland | 45,800 | 138,606 | 123,705 |
| Argentina | 48,100 | 120,928 | 107,707 |
| United States | 414,300 | 44,500 | 175,523 |
| Exports (total) | 1,888,600 | 853,396 | 1,758,073 |
| To Germany | 369,000 | 345,350 | 61 |
| Switzerland | 17,800 | 87,511 | 53,315 |
| Argentina | 34,100 | 72,211 | 90,573 |
| United States | 178,600 | 2,100 | 232,993 |
| United Kingdom | 417,500 | 5,600 | 277,874 |
| Norway | 137,500 | 30,500 | 331,400 |
| Finland | 93,900 | 71,000 | 149,745 |

(113,500,000 kr.), Italy (105,000,000 kr.), and Argentina (100,000,000 kr.). Iron ore exports were well up: from 2,600,000 in the first seven months of 1946 to 4,200,000 tons in the same period of 1947.

**Communications.**—Railroads in 1945 measured 16,711 km. There were 1,168,100 telephones, an average of 177 per 1,000 inhabitants. There were 95,967 automobiles. Air lines flew 2,926,797 mi., carrying 81,000 passengers; length of established air routes was about 16,500 mi.

The merchant fleet in 1946 numbered 2,065 ships with a gross tonnage of 1,708,171.

**Agriculture.**—Agricultural area and crop yields for 1945 are shown in Table III. The floods of 1946 and the drought of 1947 considerably reduced these figures.

The livestock census for 1946 included 593,000 horses, 2,869,000 cattle, 482,000 sheep, 1,165,000 swine, 7,609,000 chickens and 28,000 goats.

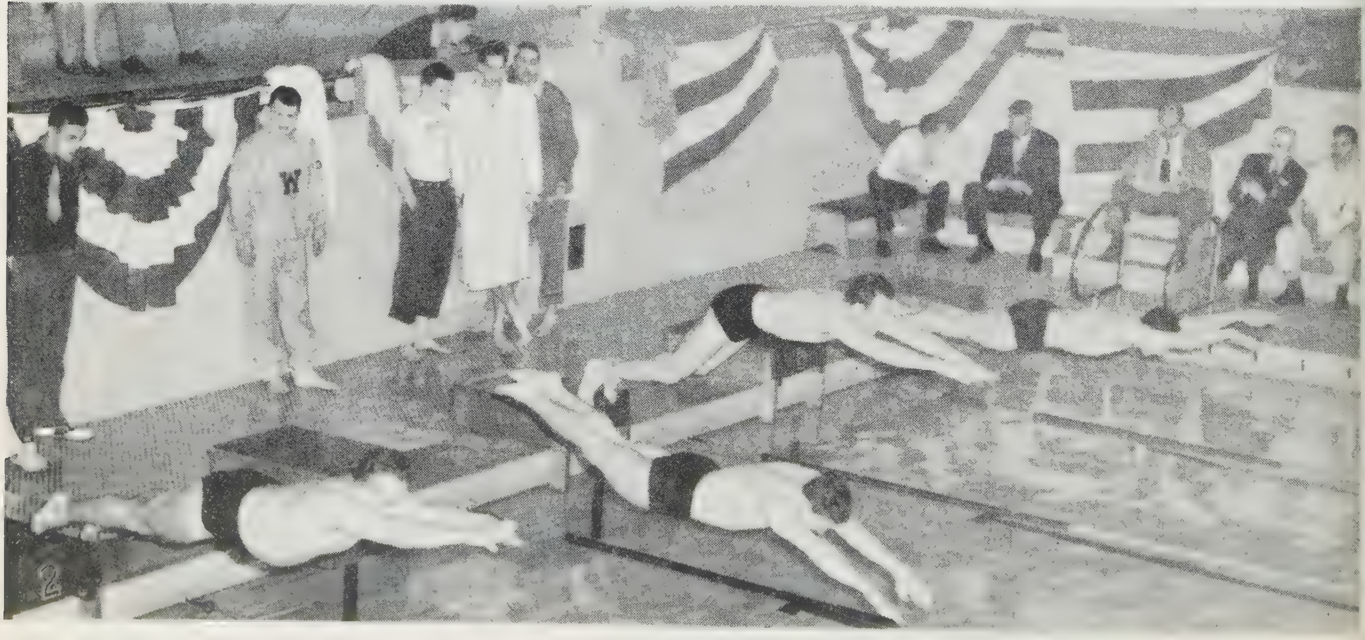
**Forestry.**—In the period 1940–44 more than 6,000,000,000 cu.ft. of timber was cut for fuel, against a normal cut of about 3,000,000,000 cu.ft. Much of the excess cut was useful thinning, but the labour burden was heavy. Export of wood products was down in 1944 to 324,635,000 kr., but climbed in 1945.

**Manufactures.**—Industrial establishments in 1943 numbered 20,907 and workers 598,165. Values of chief manufactured products (figures for 1941 and 1943) are shown in Table IV.

**Mineral Production.**—Production of the leading minerals in 1945 (in long tons) was as follows: iron ore 3,929,662 (a drop from 10,819,997 in 1943); pig iron 761,357; coal 615,366; copper ore 50,846; gold ore 107,302; silver ore 26,718.

Table III.—*Agricultural Production in Sweden, 1945*

| | Hectares | Yield in metric tons |
|---|---|---|
| Area of meadows | 942,139 | |
| Total cultivated area | 3,717,179 | |
| Wheat (winter) | 203,891 | 454,452 |
| Wheat (summer) | 87,105 | 133,811 |
| Rye (winter) | 162,824 | 270,326 |
| Rye (summer) | 5,358 | 5,946 |
| Corn | 93,286 | 168,750 |
| Oats | 542,727 | 754,895 |
| Mixed grains | 277,378 | 462,660 |
| Peas | 25,791 | 32,996 |
| Beans | 345 | 538 |
| Potatoes | 145,252 | 1,658,874 |
| Sugar beets | 54,633 | 1,813,661 |
| Hay | 1,342,671 | — |



TAKEOFF in the second heat of the 1,500-metre free style race at the National Collegiate Athletic association meet in Seattle, Wash., March 28, 1947. Stephen Grimm (second from right) of Ohio State university, won the heat

Table IV.—*Values of Principal Manufactures of Sweden*

| | 1941 kr. | 1943 (or 1942) kr. |
|---|---|---|
| Machinery | 1,359,063,000 | 1,761,958,000 |
| Ships | 206,242,000 | 242,368,000* |
| Automobiles, etc. | 225,293,000 | 246,661,000 |
| Electrical apparatus | 322,101,000 | 400,918,000 |
| Milling | 204,102,000 | 190,688,000 |
| Wood pulp | 276,578,000 | 307,337,000 |
| Paper | 210,206,000 | 292,300,000 |
| Wood | 229,167,000 | 423,908,000* |
| Furniture, etc. | 194,341,000 | 250,049,000* |
| Yarn, etc. | 204,942,000 | 225,045,000 |
| Textiles | 330,326,000 | 330,326,000 |
| Breads | 185,659,000 | 233,147,000 |
| Tobacco products | 248,055,000 | 326,280,000 |

*1942

**Fisheries.**—In 1945 there were 16,034 professional fishermen in salt-water fishing, nearly half from the Gothenburg region. Fishing boats numbered 21,924. The total catch was worth 113,435,000 kr. and weighed 152,641 metric tons.

BIBLIOGRAPHY.—*See* "Swedish Books for American Libraries," in *American Scandinavian Review* (Sept. 1947 and Dec. 1947). (F. D. S.)

**Sweet Potatoes:** *see* POTATOES.

## Swimming.

Of chief interest in swimming during 1947 were the first championships of Europe held since 1940; the striking feats of 18-year-old Alex Jany, of France, which stamped him the greatest speed swimmer to date; and the affiliation of the Soviet Union with the Fédération Internationale de Natation Amateur, governing body in world aquatics.

The European title gala, staged in a 50-m. pool at Monte Carlo, was brilliantly successful. Sixteen nations took part, the competition was keen and surprisingly fine performances attested to the progress made in most of the war-torn countries.

Hungary outscored favoured France for the European cup awarded to the nation gaining most points in the men's events, and the Danish women swimmers lifted the Bedius cup. Italy provided an upset in capturing the water polo title.

Individual laurels went to Jany and Karen Harup, of Denmark, the only double winners. The young Frenchman took his heat of the 100-m. free-style sprint in 56.2 sec., the final in 56.9 sec., and won at 400 m. in 4 min. 35.2 sec., smashing the world's record of 4 min. 38.5 sec. Miss Harup swam the 400-m. free style in 5 min. 18.2 sec. and 100-m. back stroke in 1 min. 15.9 sec. Jany, in possession of the 200-m. standard since 1946, later shaded the marks for 100 m. from 55.9 to 55.8 sec. and 300 m. from 3 min. 21.6 sec. to 3 min. 21 sec., raising his ecord holdings to 4.

Admission of the U.S.S.R. to membership in the F.I.N.A. was voted by the executive bureau at a meeting in Monte Carlo. The soviet swimmers, credited with many exploits, now became eligible for the 1948 Olympic events in London.

Nel van Vliet, of the Netherlands, holder of all breast-stroke ecords for women, maintained her leadership and broke 3 listed marks, clipping the figures for 100 yd. from 1 min. 11.1 sec. to min. 9.2 sec., 100 m. from 1 min. 19.8 sec. to 1 min. 18.2 sec. and 200 m. from 2 min. 51.9 sec. to 2 min. 49.2 sec. She also helped Mrs. Van Feggelen Koster and Hannie Termeulen to ower the medley relay standards for 300 yd. from 3 min. 25.6 ec. to 3 min. 19.6 sec. and 300 m. from 3 min. 46.3 sec. to 3 min. 42.4 sec.

In the United States, Joseph Verdeur cut the breast-stroke records for 200 yd. from 2 min. 19.5 sec. to 2 min. 16.4 sec., 200 m. from 2 min. 35.6 sec. to 2 min. 35 sec., and Donald De Forrest that for 100 yd. from 1 min. 0.6 sec. to 1 min. 0.5 sec. Harry Holiday lowered the time for 400-m. back stroke from 5 min. 10.9 sec. to 5 min. 9.6 sec., besides teaming with Robert Sohl and Richard Weinberg to drop the marks for the 300-yd. medley relay from 2 min. 55.5 sec. to 2 min. 50.5 sec. Ann Curtis sliced the record for 440-yd. free style from 5 min. 11.5 sec. to 5 min. 7.9 sec. and equalled that of 59.4 sec. for 100 yd.

(L. de B. H.)

## Switzerland.

A country of central Europe bounded on the west by France, on the north and northeast by Germany, Austria and Liechtenstein, and on the south by Italy. Area: 15,940 sq.mi.; pop. (est. 1946) 4,450,000; chief towns (pop. est. 1946) Berne (cap. 136,700); Zürich (360,500); Basle (170,300); Geneva (137,600); Lausanne (99,300). Languages: German, French, Italian and Romansh; religion: Christian (in 1941, 57.6% Protestant; 41.1% Roman Catholic; 0.5% Jewish; and 0.8% other denominations). President (1947) Dr. Philip Etter.

**History.**—On March 20, 1947, Dr. Max Petitpierre, head of the Swiss political (foreign) department, defined the Swiss attitude to the United Nations in a speech stating that Switzerland was ready to become a member if at the same time its traditions of complete neutrality could be maintained. The government made the same reservations in accepting on July 10 the invitation to the Paris conference on the Marshall plan of aid to Europe, insisting on its right to enter into economic agreements with the countries not attending the conference.

Elections for the Swiss national council were held on Oct. 27 and resulted in a majority for the Radical Democrats with 52 members in a house of 194. The Social Democrats, who had been in the majority from 1943, lost seven seats and retired once more to second place with 48 members. The Party of Labour (Communist) increased its seats from one to seven, but on the whole the results showed a slight strengthening of the traditionally antilabour parties.

The economic situation reached hitherto unknown levels: exports in 1946 had been to the value of 2,675,000,000 Swiss francs, twice as high as in 1938. On April 26 the federal council appealed for a check to be made on the rise in prices and wages, pointing out the danger of inflation. The sale of gold coins, which had led to the accumulation of great quantities of them by private persons, and in some cases to smuggling activities for speculation abroad, was suspended as from Sept. 9. An Argentine-Swiss trade agreement, to serve as a model treaty for all future trade agreements, was signed on Jan. 20; trade agree-

OLYMPIC BOBSLED RUN at St. Moritz, Switz. Ski enthusiasts of many nations continued to flock to the fashionable winter resort in the Swiss Alps during 1947 despite currency regulations ments were also concluded with France, Denmark, Norway, the Netherlands and Spain.

On July 6 a law was passed to introduce an old age insurance system. The rationing of tea, coffee, cereals and gasoline was abolished in March, that of meat and fats in October; the daily bread ration was cut on April 17 from 250 to 225 grams, in order to help meet the greater needs of other European countries.

On Dec. 11, Dr. Enrico Celio, federal councillor (minister) for posts and railways, was elected president of the Swiss confederation for 1948. (T. Hr.)

**Education.**—(1945–46) Primary: teachers 13,529, scholars 431,132; secondary: teachers 2,045, scholars 50,413; advanced schools: teachers 2,181, scholars 37,602; professional schools 248, teachers 1,661, scholars 32,022; universities (1946–47) 7, students 12,760; technical high schools 1, students 4,046; commercial universities 1, students 373.

**Finance.**—Revenue (est. 1947) 1,612,600,000 Swiss francs; expenditure (est. 1947) 1,709,200,000 Swiss francs; public debt (1946) 14,678,458,000 Swiss francs; note circulation (July 1947) 3,867,000,000 Swiss francs; gold reserve (1947) 5,119,000,000 Swiss francs; exchange rate: (1947) 1 Swiss franc = 23.36 U.S. cents.

**Trade and Communication.**—Foreign trade: imports (1946) 422,534,000 Swiss francs; exports (1946) 2,675,506,000 Swiss francs. Communications: roads (1945) 9,244 mi.; railways (1945) route mileage, normal gauge 2,262 mi.; narrow gauge 977 mi.; funiculars 102 mi.; streetcar lines 252 mi.; airways (1946) passengers carried 61,366; mails, baggage and freight 2,243 short tons; motor vehicles licensed (1946): cars 62,972; buses 1,304; trucks 27,029; motorcycles 28,815; radio receiving sets (1946) 769,352.

**Agriculture.**—(1946) production in short tons: wheat 224,250; spelt 36,900; rye 31,730; mixed corn 26,780; barley 70,300; oats 98,500; maize 11,000; potatoes 1,189,900; sugar beets 188,200; tobacco 3,195; milk 2,380,320; meat 115,350; wine 19,304,970 U.S. gal.

**Symington, William Stuart** (1901– ), U.S. government official, was born on June 26 in Amherst, Mass. He joined the army during World War I and attended Yale university from 1919 to 1923. He worked with the Symington company, a railroad equipment plant owned by his family, and later entered the radio manufacturing field, becoming in 1938 president of Emerson Electric Manufacturing company in St. Louis, Mo.

On June 7, 1945, President Harry S. Truman named Symington chairman of the Surplus War Property board. After the senate approved Truman's proposal to place surplus property disposal under supervision of a single man, Symington was appointed surplus property administrator. On Jan. 18, 1946, the president named him assistant secretary of war for air. (During World War II, Symington built what the army called the world's largest aeroplane armament plant as part of his Emerson company.) In this post, he became one of the numerous advocates of co-equality of the air force with the other armed services.

When a separate department of the air forces was created under the new national defense system, Symington became the first secretary of the air forces on Aug. 21, 1947. After his appointment he told the President's Air Policy commission that the U.S. must have no less than 630 heavy bombers in widespread bases to safeguard national security.

**Symphony Orchestras:** *see* Music.

**Synthetic Products:** *see* Agricultural Research Administration; Chemistry; Plastics Industry; Rayon and Other Synthetic Fibres; Rubber; Standards, National Bureau of.

**Syphilis:** *see* Venereal Diseases.

**Syria and Lebanon.** Independent republics, formerly administered under French mandate, bordering on the eastern Mediterranean. *Syria.*—Area 72,560 sq.mi.; pop. (est. 1943) 2,860,411; capital, Damascus (225,000). Language: mainly Arabic; religion (in Syria and the Lebanon): approximately 66% Moslem, mainly in Syria; 33% Christian. President: Shukri el Quwatli. *The Lebanon.*—Area 3,470 sq.mi.; pop. (est. 1947) 1,200,000; capital, Beirut (233,970). Languages: Arabic, French, Hebrew, Armenian and Greek. President: Sheikh Bishara al-Khuri.

**History.**—At the end of Feb. 1947 it became known that the Syrian and Lebanese governments had offered to mediate in the deadlock which had arisen between Great Britain and Egypt over revision of the Anglo-Egyptian treaty of 1936. The prime ministers of Syria and the Lebanon, Jamil Mardam Bey and Riyad bey al-Sulh, stated on March 15 that they were willing to continue mediation if the Egyptian government desired. Four days previously Mahmoud Fahmy el-Nokrashy Pasha, the Egyptian premier, had announced his intention to place the dispute before the United Nations.

The Lebanese chamber of deputies, elected in Aug. 1943, was dissolved on April 8, and the first general elections were held on May 25. The elections were carried out under military supervision; less than half of the electorate voted and there were few disorders. The manner in which the elections had been conducted was severely criticized in the press, and the editors of the leading daily papers, with the exception of the semiofficial *Le Jour,* wrote to the president of the republic, appealing for an immediate dissolution and declaring their intention of boycotting the sittings of the assembly. The first results gave the government 49 out of 55 seats, with 5 undecided.

The Lebanese foreign minister, Hamid Frangié, in presenting the Arab league case to the United Nations Special Committee on Palestine in Beirut in July, stated that the only possible settlement was the formation of an independent state with every Jew who lawfully obtained Palestine citizenship equal to every Arab.

The political committee of the Arab league met at Sofar, in the Lebanon, Sept. 16–19, to discuss the report of the United Nations Special Committee on Palestine, and the Arab League council met at Aley, near Beirut, Oct. 8–15. After the meeting of the political committee a statement was issued, declaring that Arab questions generally and particularly those of Palestine had been discussed. The meeting pronounced the United Nations report to be flagrantly prejudicial to Arab rights and violated all promises given to the Arabs.

At the United Nations general assembly the representatives of Syria and the Lebanon continuously supported the Arab states in opposing the plan for partition. After the final vote had been taken, the leader of the Syrian delegation declared that it was "an illegal and unjust decision," and that the Arab delegates reserved their freedom of action.

On Oct. 8, the Mufti of Jerusalem, Haj Amin el-Husseini, arrived at Beirut, where he was received by the president and the prime minister. On the following day it was announced that the British legation in Beirut had protested at his presence in the Lebanon, in view of an undertaking previously given that he would not engage in political activities.

The Syrian prime minister signed an agreement on Sept. 1 with the Trans-Arabian Pipeline company for the construction of a new 1,100-mi. pipe line from Saudi Arabia to the Mediterranean coast. The income from the pipe line was to be shared between the governments of the Lebanon and Syria by an agreement signed on April 1. (*See* Palestine.)

**Education.**—In Syria, 1947—government schools: primary 821, scholars 114,549; secondary schools 30, scholars 10,021; arts and crafts schools and teachers' training college 10, students 1,210; colleges 9, students 1,722. Private schools: Moslem primary 62, scholars 13,731; secondary 17, scholars 1,922; Christian schools primary 226, scholars 28,690; secondary 22, scholars 1,350; Israelite schools primary 6, scholars 1,406; other schools primary 7, scholars 892; secondary, scholars 142.

In the Lebanon, 1944–45—state schools 308, scholars 30,112; private schools 963, scholars 71,526; foreign schools 326, scholars 45,065.

**Trade and Communication.**—Foreign trade: imports (1946) £S266,400,000; exports (1946) £S85,200,000. Roads (1939) *c.* 1,900 mi. (Lebanon only, 1945, surfaced roads 1,371 mi.) Railways (1939) 690 mi. Motor vehicles in the Lebanon, 1944: cars 5,401; buses 210; trucks 1,867. Shipping (Lebanon tonnage only, 1945) entered 522,515; cleared 146,181 with cargo.

**Finance.**—Syria: estimated revenue and expenditure for 1947 balanced at £S125,820,000 (the Syrian budget does not include the general independent administrations nor the expenses of customs administrations); notes in circulation (Oct. 1947) £S189,000,000; gold reserves £S2,471,085.

The Lebanon: estimated revenue and expenditure for 1947 balanced at £S58,900,000; notes in circulation (1946) £S157,000,000.

The unit of currency in both countries is the Syrian or Lebanese pound (£S), divided into 100 piastres; rate of exchange (Dec. 1947) £S1=45.35 U.S. cents.

**Agriculture.**—Production (1945) in short tons: wheat 429,100; barley 272,700; maize 20,500; sorghum 83,600; grapes 186,000; olives 175,000; melons and watermelons 603,000; cotton 4,700; silk (Lebanon only) boxes prepared for incubation 21,000; number of fresh cocoons 600,000.

In Syria only (1946, in short tons): wheat 62,567; barley 310,612; corn 8,411; beans 14,985; lentils 21,437; white maize 64,869; yellow maize 30,421; potatoes 16,594; carrots 3,715; onions 442,860; garlic 9,700; cotton 15,578; linen 176; hemp 2,962; olives 46,170; vines 188,040; apricots 23,512; apples 6,246; pears 1,638; cherries 2,197; pistachionuts 1,297; almonds 2,338; walnuts 6,409; raw wool 8,193.

**Syrup, Sorgo and Cane.** U.S. production of sorgo syrup in 1947 was estimated at 9,885,000 gal. compared with 11,934,000 gal. in 1946 and an average of 11,537,000 gal. during 1936–45. The acreage was up 4.5% in 1947 but the yield declined. Heavy spring rains and high, late summer temperatures hampered production.

Table I.—*U.S. Cane Syrup Production 1947, 1946 and 10-yr. Average 1936–45*

(In thousands of gallons)

| State | 1947 | 1946 | 10-yr. Average | State | 1947 | 1946 | 10-yr. Average |
|---|---|---|---|---|---|---|---|
| Louisiana . . . | 8,460 | 11,825 | 7,671 | Alabama . . . | 2,160 | 2,430 | 2,777 |
| Georgia . . . | 4,070 | 4,025 | 4,200 | South Carolina | 300 | 420 | 424 |
| Mississippi . . . | 2,600 | 3,500 | 3,209 | Texas . . . . | 280 | 270 | 611 |
| Florida . . . . | 2,400 | 1,980 | 1,850 | | | | |

Table II.—*U.S. Sorgo Syrup Production 1947, 1946 and 10-yr. Average 1936–45*

(In thousands of gallons)

| State | 1947 | 1946 | 10-yr. Average | State | 1947 | 1946 | 10-yr. Average |
|---|---|---|---|---|---|---|---|
| Mississippi . . . | 1,875 | 1,400 | 1,750 | Georgia . . . | 944 | 689 | 1,097 |
| Alabama . . . | 1,680 | 1,827 | 1,911 | Tennessee. . . | 930 | 1,520 | 1,115 |
| Kentucky . . . | 962 | 1,360 | 829 | Arkansas . . . | 672 | 1,200 | 924 |
| North Carolina . | 949 | 1,245 | 774 | South Carolina. | 441 | 580 | 536 |

Cane syrup production declined in 1947 to 20,270,000 gal., compared with 24,450,000 gal. in 1946 and an average of 20,835,000 during 1936–45. The yield per acre, 181 gal., was below the 204-gal. yield of 1946. (*See* also BEEKEEPING; MAPLE PRODUCTS.) (J. C. Ms.)

**Table Tennis.** After an eight-year hiatus because of World War II the International Table Tennis federation in 1947 resumed the world championship matches inaugurated in 1926. The matches, played in Paris, resulted in these winners: men's singles, Bohumil Vana (Czechoslovakia), the 1938 champion; women's singles, Gizi Farkas (Hungary), a new star; men's doubles, Vana and Adolf Slar (Czechoslovakia); women's doubles, Miss Farkas and Trude Pritzi (Austria); mixed doubles, Ferenc Soos (Hungary) and Miss Farkas; men's singles consolation, H. Anderson (Sweden); Swaythling cup for men's teams, Czechoslovakia (Vana, Slar, Tokar, Tereba); Corbillon cup for women's teams, England (Elizabeth Blackbourn, Vera Dace). The 14th I.T.T.F. congress, composed of 23 nations, initiated a reorganization; divided the world into five zones, each under a vice-president; adopted the no-spin palm service used in the U.S.A. and scheduled the 1948 championships in Wembley stadium, London, Feb. 4–11. (C. Z.)

**Taft, Robert Alphonso** (1889– ), U.S. senator and son of William Howard Taft (27th president of the United States), was born on Sept. 8 in Cincinnati, O. He was graduated from Yale in 1910 and received his law degree at Harvard in 1913. During World War I, he was rejected for military service because of poor vision and served as an assistant counsel on the U.S. Food administration.

Ohio Republicans elected him to the senate in 1938; he was re-elected in 1944.

Taft had strong support for the presidential nomination in both the 1940 and 1944 national conventions, but lost out first to Wendell Willkie and later to Thomas E. Dewey.

In the 80th congress, Taft became undisputed G.O.P. leader of the upper house. He was the principal architect of the Taft-Hartley Labour act, which was passed by congress over the presidential veto in the summer of 1947. In defending the bill, he disclaimed antilabour prejudice, insisting it was designed principally to reduce union "abuses."

In June 1947, he had a sharp debate with President Harry S. Truman over inflation. Delivering the first broadside, Truman declared on June 5 that Taft was an advocate of a "boom and bust" philosophy; the senator rejoined vigorously the following day that the administration itself was to blame for high prices.

On international issues Taft took the stand that the administration's foreign policy was a failure, asserting (Sept. 25) that it had "brought the world to a state of economic collapse."

In September, Taft toured seven western states to test sentiment regarding his candidacy for president in 1948. The tour was marked by his forthright statements on controversial issues.

On Oct. 24, it was disclosed that Taft had announced his candidacy in a letter to the chairman of the G.O.P. state committee of Ohio.

**Taft-Hartley Act:** *see* LABOUR UNIONS; LAW; NATIONAL LABOR RELATIONS BOARD; UNITED STATES.

**Tahiti:** *see* PACIFIC ISLANDS, FRENCH.

**Taiwan:** *see* FORMOSA.

**Talc.** The sales of minerals of the talc group (talc, pyrophyllite and ground soapstone) are grouped together because of similarity of characteristics and a considerable degree of interchangeability of uses. The basic data of the industry in the United States are as follows, in thousands of short tons:

| | 1937 | 1939 | 1941 | 1943 | 1945 | 1946 |
|---|---|---|---|---|---|---|
| Mine production . . . . . . | ? | ? | 414.5 | 436.2 | 414.5 | 460.6 |
| Sales . . . . . . . . . . . . | 230.0 | 254.0 | 416.4 | 412.9 | 398.4 | 457.1 |
| Crude. . . . . . . . . . | 11.1 | 15.7 | 43.8 | 30.2 | 36.0 | 37.0 |
| Sawed . . . . . . . . . | 1.1 | 1.9 | 4.2 | 1.7 | 0.7 | 0.8 |
| Ground . . . . . . . . . | 217.8 | 236.4 | 368.4 | 381.0 | 361.7 | 419.3 |
| Imports . . . . . . . . . . | 26.9 | 26.2 | 18.6 | 6.6 | 6.7 | 18.4 |
| Used in | | | | | | |
| Paint . . . . . . . . . . | 59.7 | 67.9 | 120.3 | 129.2 | 103.6 | 103.8 |
| Paper. . . . . . . . . . | 32.1 | 30.2 | 37.9 | 34.4 | 28.1 | 32.3 |
| Ceramics . . . . . . . . | 29.8 | 38.4 | 79.0 | 47.9 | 37.9 | 62.4 |
| Rubber . . . . . . . . . | 26.9 | 31.1 | 58.1 | 49.0 | 63.8 | 66.0 |
| Roofing . . . . . . . . . | 23.6 | 30.5 | 40.6 | 47.5 | 46.8 | 54.6 |
| Toilet preparations . . . . | 4.3 | 9.7 | 21.1 | 17.7 | 21.5 | 17.1 |
| Insecticides . . . . . . . | ? | ? | 10.3 | 24.5 | 37.0 | 65.0 |

Both mine output and sales made new record highs in 1946.

**Canada.**—Productions of 14,439 short tons of talc and 14,914 tons of soapstone in 1945 decreased to 13,500 tons of talc and 11,421 tons of soapstone in 1947. (G. A. Ro.)

**Tanganyika:** *see* BRITISH EAST AFRICA; TRUSTEE TERRITORIES.

**Tangerines:** *see* FRUIT.

**Tangier.** An international and demilitarized territory on the southern shore of the Straits of Gibraltar. Area: 232 sq.mi.; pop. (1941 est.) 100,000 (including 36,500 Moslems, 16,509 Europeans). Languages: French, Spanish, Arabic. Legislative power was vested in an international assembly following the Convention of Paris of Dec. 18, 1923. The regime is autonomous, under the nominal sovereignty of the sultan of Morocco. Administrator: Vice Admiral Luis Magalhaes Correia.

**History.**—On April 9, 1947, the sultan of Morocco paid the first visit to Tangier made by a sultan since 1889; he was received by his representative, the Mendub Haj Mohamed Tazi, and thousands of Moors came in from the Spanish zone to welcome him. While there he made a speech on April 11 containing a friendly reference to the Arab league and a claim for Moroccan independence. He left on April 14. A demonstration was held on April 15 in memory of the Moors killed in the Casablanca riots.

**Finance.**—Revenue and expenditure (1947) estimated to balance at Fr. 430,000,000. The monetary unit in the territory is the Moroccan franc equal to the French franc.

**Trade and Communications.**—Foreign trade (1944): imports Fr. 181,357,400; exports Fr. 14,630,000. Motor vehicles licensed: about 8,000.

## Tariffs.

Nontariff controls over international trade continued to be more important throughout 1947 than were tariffs in the commercial policies of the world's leading trading nations. In fact, because of the halting recovery in many countries following World War II, together with the acute worldwide shortage of industrial equipment and essential supplies and the accompanying dollar crisis, the latter half of 1946 and most of 1947 were characterized by an intensification of nontariff controls over imports throughout many parts of the world.

Insofar as tariffs and related instruments of commercial policy were concerned, the most noteworthy events and trends during the year were: (1) the United Nations Conference on Trade and Employment at Geneva, Switzerland (and later at Havana, Cuba), where many reciprocal trade agreements were negotiated and a charter for the proposed International Trade organization was formulated; (2) the further deterioration in the balance-of-payments position of many countries and the increasing shortage of free exchange throughout the world (*see* Exchange Control and Exchange Rates.)

Dominating everything else in world tariff policies during 1947 was the negotiation of the Geneva trade pacts. For more than six months beginning in April 1947, nearly 1,000 delegates from 23 countries were occupied in negotiating reciprocal trade agreements for the reduction of tariffs and the removal of other barriers to world trade. Never before had multilateral negotiations been attempted on so large a scale to obtain so broad a degree of international economic co-operation.

Ultimately, trade negotiations were carried on by 106 individual pairs of nations, bargaining simultaneously for reciprocal reductions in duty. Thus, at Geneva there emerged agreements granting tariff concessions affecting more than 45,000 individual items in world trade. The signatory countries generally accounted for three-fourths of the value of world trade, and the items on which concessions were granted had ordinarily accounted for two-thirds of the total trade of the participating countries themselves. The many concessions were safeguarded by additional provisions to prevent restrictive trade practices and various types of discrimination. Moreover, the signatory countries agreed to extend most-favoured-nation treatment to one another.

Thus, an important stride had been taken toward re-establishment of the multilateral trading system. The concessions, ultimately requiring approval by the respective governments, were combined in a composite trade agreement—a multilateral instrument—signed by each government represented at Geneva. The composite agreement comprised 20 individual schedules setting forth the concessions which signatory countries extended to one another. It was planned (subject to ultimate decisions at Havana) that for a transition period, at least, all of these concessions would be generalized to nonsignatory countries on a most-favoured-nation basis. Ultimately, however, after a date to be established, other nations presumably would benefit from the Geneva concessions only after they adhered to the I.T.O. charter and granted more or less equivalent concessions to other signatories.

However restrictive nontariff import controls may have been during 1947, the motive for their adoption or increased utilization was less that of economic nationalism and protectionism than that of conserving foreign exchange and husbanding available supplies of free currency, especially dollars. By the close of 1946, there was a marked trend toward the adoption or more intensified use of import licensing systems, exchange controls, and bilateral compensation-clearing arrangements. Import restrictions, including licensing systems, quota arrangements, and the like, were often employed in conjunction with official exchange-control operations. Such restrictions were usually designed to curtail or prohibit the importation of nonessential commodities or to assure that the available foreign exchange would be directed into the most useful channels.

Newly adopted quantitative restrictions of imports were probably most far-reaching in Canada, Brazil, Colombia and the United Kingdom. Controls were also employed with increasing intensity in many other countries, most notably perhaps in Argentina, Chile, Ecuador, Mexico, Nicaragua, Peru, Uruguay, Norway, Sweden, China, India, Australia, New Zealand and Southern Rhodesia. Bilateral barter-type agreements, which had increased markedly during 1946, were equally if not more apparent during 1947. Most of these agreements appeared chiefly to have been stop-gap arrangements to tide nations over during the shortages of free exchange. By means of bilateral clearing arrangements and the mutual facilitation of balanced trade in specified commodities, numerous countries attempted to maintain markets for their export industries and sought to assure a continued supply of essential raw materials and industrial supplies. Bilateral clearing arrangements were most prominent in Europe, where during the year they were used most frequently by countries more or less in the following order: Czechoslovakia, Poland, Bulgaria, France, Netherlands, Norway, Switzerland, Austria, Yugoslavia, U.S.S.R., Finland, Belgium and Denmark.

Except for the reciprocal trade pacts negotiated at Geneva, few countries made extensive revisions in their tariff schedules and even these changes related chiefly to tariff classifications and nomenclature and hence did not make extensive alterations in the prevailing rates of duty. Piecemeal modifications affecting individual import commodities or tariff items were also made in various countries. More or less general revisions in tariff schedules were made in Belgium, Netherlands, France, Czechoslovakia, the Dominican Republic, Mexico and Peru. Probably the most important of the new schedules originated in the agreement to establish the Belgium-Netherlands-Luxembourg customs union (Benelux). This agreement, signed in March 1947 and effective in Jan. 1948, added one more schedule to the broadening list of tariff systems employing the classification and nomenclature recommended by the League of Nations. An attempt was made to fix the rates of duty in the new schedule at a point midway between the former Belgium and Netherlands duties. It would thus appear that the new tariff provided slightly more protection to domestic industries than did the Netherlands tariff and perhaps slightly less than did the Belgian-Luxembourg duties. Rates of duty were predominantly of the ad valorem type. In Aug. 1947, Bulgaria and Yugoslavia announced that a customs union between those two countries was contemplated.

During the latter part of 1947, France also modernized its tariff schedule by making its nomenclature conform more closely to the model prescribed by the League of Nations. At the same time ad valorem duties were substituted in most instances for the specific rates which generally had applied. Although it was announced that the new duties were designed to have approximately the same ad valorem equivalent as the old, it appeared that their effective burden was somewhat higher. A revised tariff in Czechoslovakia, effective in July 1947, provided for a horizontal increase in most specific duties; it was indicated that this action was undertaken largely to compensate for the decreased foreign purchasing power of the national currency. At the same time, various Czechoslovakian rates involving double duties, surtaxes, and the like were substantially simplified. Apparently, the general level of tariffs was not raised; in fact, the duties on many important noncompetitive products were reduced. The new customs tariff of the Dominican Republic, adopted in July 1947 and effective in Jan. 1948, was designed principally to favour importation of agricultural supplies and equipment and other materials essential to domestic industries. In Nov. 1947, Mexico raised most of the duties in its import schedule, except, of course, those bound by conventions with other countries. Where the latter was true, relief under the "escape clause" was sought in a substantial number of instances. At the same time, Mexico altered most of its specific duties to compound rates (specific and ad valorem) and simplified a number of tariff classifications. Government spokesmen indicated that the new tariff was necessary to stabilize revenue, assure protection to domestic industries, and correct the country's adverse balance of payments. The new tariff schedule in Peru, instituted in June 1947, was officially described as designed to introduce improved nomenclature, provide a substantial increase in revenue, and afford more protection to domestic enterprises.

Although piecemeal tariff changes affecting individual import items or groups of items were less frequent in 1947 than in many preceding years, measures providing for lower duties apparently were more frequent than those establishing higher tariff rates. The most extensive increases in duty; *i.e.*, those affecting the widest range of commodities, seem to have been made in Chile, Mexico, Martinique, Spain, the United Kingdom, Turkey, the Netherlands Indies and Tunisia. The increased duties in the United Kingdom were limited chiefly to imports of tobacco and motion picture films. The action in Turkey and Tunisia seemed motivated principally by the desire to compensate for depreciation in the currency and involved chiefly duties levied on a specific basis.

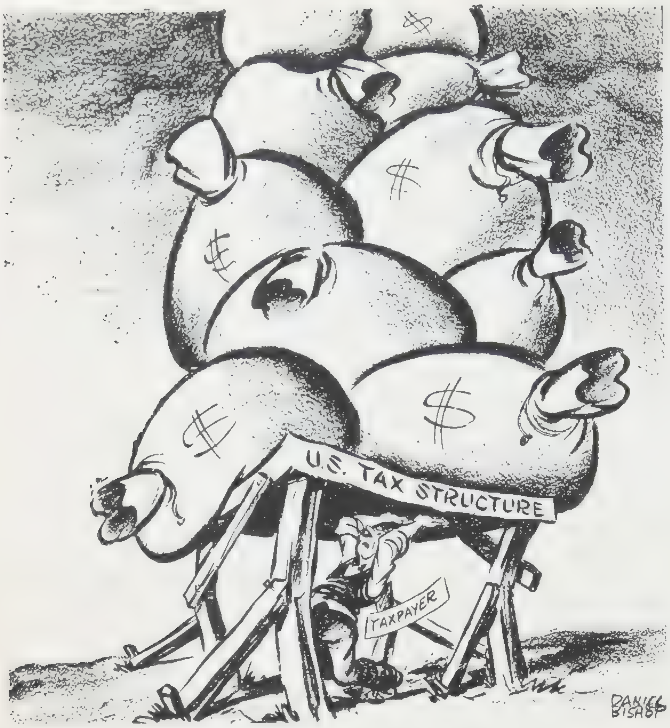
Probably the most comprehensive reductions in 1947 were those made in Paraguay and South Africa, but even here the changes were moderate. By and large, unilateral reductions in duty on individual items were granted most frequently to alleviate particular supply situations or to facilitate the importation of materials and equipment essential to domestic industrialization programs. Many such reductions were either temporary in character or applicable only to specified quantities of imports. (*See* also INTERNATIONAL TRADE.) (D. LH.)

## Taxation.

The year 1947, like 1946, ended without important U.S. federal tax legislation in the literal sense. Some stop-gap measures and certain minor amendments went through, but that was all. In a real sense, however, an important increase in tax burden resulted from advancing inflation. As the dollar lost buying power, not only did the value of exemptions shrink but income tax brackets stated in terms of dollars became narrower and narrower in terms of economic value, and the progression of tax rate effectively steepened. Despite this, and despite the large budgetary surplus for the fiscal year ended June 1947, the Republicans could not exert firm enough legislative control to redeem their pre-election promise of large and quick reduction in personal income tax. Twice congress passed tax-reduction bills, twice Pres. Harry S. Truman interposed vetoes, and twice the vetoes were upheld. In Dec. 1947 the congressional majority was returning to the charge with revised plans for tax cutting. Also, throughout 1947, sweeping and detailed proposals for ultimate tax revision were being offered. Their general trend was toward lightening and more comfortably adjusting the tax burden. Yet the administration seemingly maintained determination to go slow on tax relief, both to restrain inflation and to lower the national debt and meet currently the costs of effective aid to Europe and other suffering regions. So at the opening of 1948 a sharp struggle between White House and Capitol Hill was in prospect.

**Tax Revision Plans.**—Some of the plans for federal tax revision originated, as in previous years, outside the government itself. In mid-November the Committee for Economic Development (*q.v.*) proposed a long-range "program for prosperity" involving a number of immediate changes. The program aroused wide comment, much of it favourable. Representatives of the section of taxation of the influential American Bar association in June presented extensive recommendations to the house committee on ways and means. The association discussed tax problems at its annual meeting in September, thereafter conferring with and conveying recommendations to appropriate public officials. The ways and means committee continued its examination of need for revision of internal revenue laws, in particular appointing a special tax study committee of skilled persons under the chairmanship of Roswell Magill. From this committee came in early November a majority report and a largely dissenting minority report by Matthew Woll, one of the ten committee members. In the closing months of the year the ways and means committee conducted hearings as to various aspects of tax revision. The technical staff of the joint committee on internal revenue taxation worked continually on matters germane to revision. The treasury department, engaged in reexamination of the whole tax system, issued in June and later months at least ten important studies of leading revenue problems. The commerce department's advisory committee on small business in October recommended modification of federal tax policies "in the interests of business." Topics mentioned by the following paragraphs are among those most vigorously stirred in the reports and inquiries just indicated.

*Taxation of Married Couples.*—When 1947 opened, nine southern and western states and also Hawaii had community property systems which gave married couples the great advantage of splitting income between husband and wife for federal tax purposes. These jurisdictions had successfully resisted efforts by noncommunity (that is, common law) states for nationwide equalization of personal income tax burden. Up to 1942 they had also successfully resisted such efforts with respect to estate and gift taxes. In 1942, however, congress more than equalized the estate and gift situation; it made these two taxes more burdensome to community property spouses than to spouses in common law jurisdictions. Those seeking income tax equality used the 1942 disparity as a bargaining point in 1947. A working agreement resulted under which the interested parties with practical unanimity pressed a single adjustment proposal to level out the effect of all three taxes—income, estate and gift—by giving husbands and wives throughout the U.S. the same tax advantages enjoyed prior to 1942 only by spouses in community property jurisdictions. Widening adoption of community property plans, obviously for tax-saving, increased the likelihood that congress would effectuate this adjustment proposal. During 1947 Michigan, Nebraska and Oregon made themselves community property states; Pennsylvania tried to, but the state supreme court held the statute invalid. As of the beginning of 1947 the treasury estimated that general interspousal income splitting would have the substantial effect of benefiting 4,900,000 married couples at an annual revenue cost of $744,000,000.



"ANOTHER VETERAN IN NEED OF NEW HOUSING," a cartoon by Bishop which appeared in the *St. Louis Star-Times* on May 20, 1947, when the U.S. house of representatives sustained Pres. Truman's veto of a $4,000,000,000 income tax reduction bill

*Taxation of Corporate Dividends.*—Another intense discussion centred upon federal taxation of corporations. Here the key issue had to do with dividends. An ordinary business corporation may, in computing its taxable income, deduct interest paid on corporate bonds, notes, etc. It may not likewise deduct the amount of dividends paid to its stockholders, and the stockholders must include their dividends for individual tax, just as bond or note owners must include their interest. Hence, the complaint that dividends are double-taxed, equity financing discouraged, fixed indebtedness unwisely extended and healthy expansion of business cramped. Most suggested methods of relief inured to the benefit of stockholders as distinguished from bondholders. This of course gave room to argue that an undeserved windfall was being sought for persons who bought stock at prices depressed by former federal tax methods. The whole matter was so highly debatable and ran into so many ramifications, all of great fiscal importance, as to prevent confident prediction of congressional action.

*Taxation of Small Businesses.*—Strong representations were made as to the advisability of adjusting federal taxes to encourage small businesses, incorporated or unincorporated. Suggestions included changes in tax rates, special exemptions, liberalized loss offsets, acceleration of depreciation allowances and equalization of taxes as between incorporated and unincorporated small firms. The underlying facts and considerations were carefully presented in a treasury study released at the end of Oct. 1947.

*Taxation of Co-operatives.*—The internal revenue code exempts from corporate tax, under specified conditions, co-operative farmers', fruit-growers' and other like associations for marketing products and purchasing supplies and equipment; financing corporations organized as auxiliaries of such co-operatives may also qualify for exemption. There is no statutory exemption for consumers' co-operatives. Marketing and purchasing by the co-operative method had grown to extraordinary dimensions in the U.S., and there was sharp adverse criticism of the foregoing exemptions, notably by representatives of small business which was in a competitive position. Much logical, economic and political power was ranged on each side of this controversy, similar problems had proved difficult of solution in both Great Britain and Canada and the outcome of the discussion was unpredictable.

*Estate, Gift and Income Taxes.*—It had always been deemed necessary to guard federal estate tax against avoidance through transfers of an essentially testamentary nature but made during life. This was attempted in part by including many such transfers under the estate tax and in part by levying a separate gift tax. The first expedient was difficult to apply and ineffective in numerous respects. There was considerable overlapping and inconsistency between estate and gift taxes. For at least ten years the treasury had explored the possibility of eradicating these defects by combining or integrating the two types of tax. Just concern had also arisen because of inconsistencies, sometimes annoyingly whimsical, between these taxes and the income tax. In 1944 the treasury appointed to explore the problem an advisory committee of eminent tax practitioners, whose report was published in 1947. It includes a penetrating analysis of the matter and a specific recommendation of code revision for integrating estate and gift taxes into a single transfer tax, and for harmonizing or correlating this tax with the income tax.

*Powers of Appointment.*—In connection with federal estate and gift taxes, one highly technical matter of broad practical importance is proper treatment of powers of appointment. Such powers, typically created by a testator or the creator of a trust, enable other specified persons or perhaps the creator himself to exercise control over the transmission of beneficial interests. The code was elaborately amended in this respect in 1942. These amendments had some aspects arousing strong disapproval. After long negotiations, the treasury and interested groups during 1947 worked out satisfactory plans of revision, and appropriate legislation was introduced. Congress postponed action because of time limitations and complexity of the problem.

*War Losses.*—As in the matter of powers of appointment, discussion had been in progress for years about tax provisions respecting war losses and recoveries. Here, too, general agreement was reached during 1947 between the treasury and representatives of interested taxpayers but there was inadequate time to deal definitively with appropriate legislation.

**International Tax Conventions.**—Turning from pending proposals to action taken in 1947, first mention may be given to continuance of the policy of negotiating international tax conventions for avoidance of double taxation, exchange of relevant information and reciprocal assistance in enforcement of tax claims. Conventions with France and the Union of South Africa were before the senate foreign relations committee. Negotiations were held with Denmark, New Zealand and Mexico. Conventions earlier consummated were implemented by regulations and rulings and in one or two instances interpreted by court decisions.

**Excess Profits Tax.**—Although no longer operative after 1945, the wartime excess profits tax left behind it a tremendous grist of claims under the special relief provisions. The Excess Profits Tax council, appointed in 1946 to deal with this situation, completed its organization by the end of that year. During its first year, it spent much time laying down principles of operation and reviewing and revising the bureau bulletin issued earlier to guide application of the relief sections. The council began working on specific cases about the beginning of 1947, and by June 30 had disposed of approximately 1,000 cases. This number included 51 which had gone to the tax court before the council was created; of these 34 were settled by agreement and 15 more were otherwise closed, so that only 2 remained for court disposition. Such figures indicate the council's earnest effort to adjust acceptably to taxpayers, without judicial trials, the smaller and simpler cases, thus freeing both its time and the courts' time for the massive disputes which, whether disposed of on the administrative or the judicial level, must move comparatively slowly. In this field, a "small" case involves less than $100,000. About 57% of the 8,400 cases pending Oct. 1, 1947, were in that sense small. At the other extreme of the scale were about 250 pending cases each involving more than $3,000,000 and together representing about 60% of the total amount involved.

**Tax Enforcement.**—For the fiscal year 1947–48 congress cut by about $20,000,000 (more than 9%) the salary and expense appropriation requested for the bureau of internal revenue. Complaints arose that the consequent lay-off of employees seriously curtailed bureau tax enforcement activities, which had in the fiscal year 1945–46 produced nearly $800,000,000 in additional income, profits, estate and gift tax assessments. Countercharges from congressional sources suggested spite work in retaliation for the appropriation cut. An investigation of the bureau followed. The controversy had not at the end of 1947 been fully resolved.

**Social Security.**—The rate of old-age insurance social security tax on employees and employers was legislatively set at 1% of wages received or paid through 1949, then at 1½% through 1951 and thereafter at 2%. In December the treasury suggested that 11,000,000 self-employed persons should be brought under this social security coverage by paying social security taxes just as income taxes are paid. (*See* also SOCIAL SECURITY.)

**Judicial Developments.**—Few judicial decisions of great importance with respect to federal taxation were rendered in 1947. The U.S. supreme court and other federal tribunals continued to discourage efforts to avoid, minimize or delay taxes by utilizing technical provisions of the internal revenue code. Status of the Dobson case, by which the supreme court in 1943 accorded unusually great finality to tax court decisions, was affected in two ways. The sixth circuit court of appeals asserted that the tax court as an administrative tribunal fell within the scope of the Administrative Procedure act of 1946 and had no greater adjudicative power than this act allowed. Also legislation offered in congress would make the tax court a judicial, rather than an administrative, court of record. If the sixth circuit's view should stand, or if the foregoing legislation should pass, the Dobson case would apparently become obsolete.

**State and Local Taxes.**—While too multifarious for review in detail, tax legislation during 1947 in 44 state legislatures and the District of Columbia emphatically manifested urgent need of larger revenues than were easily forthcoming. The broad tendency was to impose new taxes, or prolong or increase old ones. Fully 30 states so legislated with respect to alcoholic beverages (including beer) or tobacco (especially cigarettes) or both; 15 states and the District of Columbia legislated with respect to motor fuel or fuel oil; 4 states enacted sales and use taxes, significant as the first new legislation of this type in a decade; legislation increased or prolonged income tax burdens in 9 states. Only Oklahoma substantially reduced income tax, although a few states continued reductions initiated in earlier years. Failure on referendum of a proposed sales and use tax in Oregon prevented higher personal exemptions under the state income tax.

*State and Local Fiscal Relations.*—Cities, towns and other subordinate fiscal units were acutely distressed by the rising cost of their services. Diversification of revenue sources in these municipal corporations, while not wholly impossible, is difficult to achieve and main reliance must be placed upon the inelastic property tax. States, through diversification, increased tax yields between 1926 and 1942 about 13 times as rapidly as local governments. Hence, the latter urgently appealed for state aid, which could be given by (1) withdrawing the state from the property tax field, (2) granting localities power to diversify by taxing subjects other than property or (3) making more or less systematic contributions to local expense from state tax collections. All three of these aid methods were embodied in 1947 legislation and administrative practice. At least 16 states appointed commissions or committees to study the whole problem, probably the most important report emanating in 1946 from the Moore commission (New York). This report, recognizing the natural dependence of localities upon property, particularly real estate, for tax revenues, proposed an elaborate, systematic and costly plan for state assistance to local government. The plan set up separate budgets for state purposes and local assistance purposes, the latter budget to absorb about 55% of the total state revenue. Legislation put this plan into operation in 1946, but in 1947 the fiscal needs of localities continued so acute that legislation was passed to permit counties and cities to levy many excise and licence taxes. Soundness and uniformity in such taxation were to be furthered by the state tax commission.

*State and Federal Fiscal Relations.*—Complementary to the matter just considered were proposals respecting state-federal tax relationship. The American Bar association issued in 1947 an elaborate committee report on this question. The treasury also released a substantial study. In Sept. 1947, a conference of 15 state governors and 13 U.S. senators and congressmen recommended that federal excise taxes be reduced as soon as practicable, that federal estate tax be amended to provide more equitable division of death tax revenue with the states, that federal tax on employers to cover administrative expenses of state employment security programs be relinquished to the states and that states avoid encroachment on tax fields peculiarly adaptable to federal uses. (*See* also BUDGET, NATIONAL; BUSINESS REVIEW; DEBT, NATIONAL; LAW.) (J. M. MAG.)

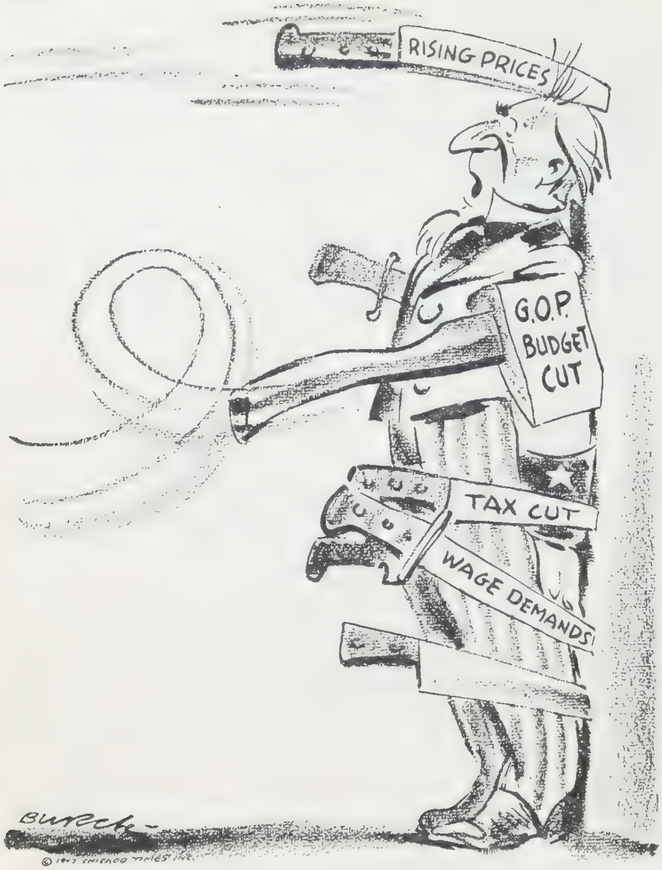
**Other Countries.**—During 1947 expenditure on defense and other expenditure arising from World War II decreased in Europe and the world at large more slowly than was expected, and these decreases were offset by increases as governments assumed new functions and responsibilities. Taxation, levied on incomes recovering much too slowly, increased rather than decreased, and in most countries was at record levels for peacetime, in more than one case implying serious repercussions on the economy as a whole.

*Great Britain.*—Tax liabilities (central, local and social security contributions) remained in 1946 at 32% of total private income, having fallen only slightly from their wartime peak of 33%. In spite of this high proportion, the fiscal year ending March 31, 1947, closed with a deficit of £570,000,000, though that was less than budgeted for. Revenue receipts exceeded estimates by £180,000,000. For 1947–48 a total revenue of £3,451,000,000 was budgeted for, £110,000,000 more than in the previous year. The chancellor budgeted for a surplus of £270,000,000 on ordinary account, and this surplus was in fact almost achieved in the first half of the fiscal year, revenue receipts being more than fully up to the estimates.

Miscellaneous receipts, an estimated £270,000,000, included a large item, about one-half of the total, consisting of repayments to the exchequer of certain issues during the war not actually spent by the armed forces. Another £95,000,000 was expected from the sale of surplus war stores.

On the basis of the previous year's taxation not much change was expected in total receipts: a fall in excess profits tax receipts (abolished from Jan. 1, 1947) being compensated by indirect taxes on increased imports, especially of tobacco.

Further income tax relief was given. The earned income



"CAREFUL!" a warning by Burck in the *Chicago Times* implying that the federal tax reductions being considered by congress in May 1947 might add fuel to the inflationary tendencies present in rising wage and price levels

allowance was increased to one-sixth, subject to a maximum of £250. The child's allowance was increased to £60 (from £50) and the conditions attached to the dependent relative's allowance were eased. This would cost altogether £87,000,000 in a full year. From Jan. 1, 1947, the profits tax was made discriminatory by being raised to 12½% on dividends; at the same time individuals and partnerships were exempted. This would yield an extra £36,000,000 in a full year but £16,000,000 of this would be lost to income tax. The rates of legacy and succession duties were doubled, except on charities. But new exemptions were given to smaller estates and small bequests. The increase would hit particularly legatees other than near relatives, the new rate for this class being 20% (in addition to estate duty). An additional £9,000,000 in a full year was expected from this source. Stamp duties were doubled with the exception of duties on the transfer of small property other than securities. This was expected to bring in £20,000,000. A new stamp duty was introduced at the rate of 10% on the "bonus element" in an issue of shares to existing shareholders which was expected to bring in £5,000,000 in a full year.

Heavy fuel oil and gas oil were exempted from import duty, the excise duty on home-produced artificial silk was repealed with corresponding reductions in customs duties, all these concessions costing £6,500,000. The tobacco duty was raised to record heights by approximately another £1 per pound and was £2 15*s.* on manufactured tobacco. The purpose was to reduce consumption (much above prewar) by one-third, while still making it yield £77,000,000 more than before. The effect of the duty was about as had been expected. There were £525,000,000 tobacco duty receipts budgeted for 1947–48.

The purchase tax was increased on domestic electric and gas apparatus of most kinds to 66⅔% in order to save fuel. But the tax was reduced from 33⅓% to 16⅔% on linoleum and some sports goods, and there were also other reductions. On balance an increase of £15,500,000 in a full year was expected.

A supplementary budget was introduced in November with the aim of absorbing purchasing power released by import cuts and the diversion of goods from home to export markets. From Jan. 1948 a tax of 10% would be imposed on organized betting other than on horse racing. The rate of the profits tax had been doubled retrospectively from Jan. 1947 to 25% on distributed and 10% on undistributed profits. Purchase tax rates went up, with some exceptions (including motor cars), from 16⅔% to 33⅓%, from 33⅓% to 50%, from 66⅔% to 75% and from 100% to 125%; but the list of exemptions was not changed. Duty on beer increased by 1*d.* per pint, and on spirits by 33*s.* 4*d.* per proof gallon, and on wines by 8*d.* to 1*s.* 8*d.* per bottle. There would be no further rise in food subsidies and some other subsidies were abolished. Tax arrears would be subject to interest. A novel measure was proposed (but later dropped) allowing only one-half of advertising expenditure as deduction for income tax purposes. In a full year £57,000,000 additional direct taxes and £151,000,000 indirect taxes would be raised, a total of £208,000,000.

*Canada.*—The surplus for the fiscal year ending March 31, 1947, was Can. $352,000,000 and another surplus of Can. $350,000,000 was budgeted for the next year, a record national income being expected. The revenue expected during 1947–48 was Can. $2,450,000,000 out of a national income of Can. $12,000,000,000. Income tax reductions, averaging 29%, and the abolition of the excess profits tax were announced. The reductions in personal income tax started on July 1. Exemptions remained unchanged but tax liabilities were reduced by 6%–7% in the upper ranges of income and by as much as 54% in the lowest ranges. Nine out of ten taxpayers would be affected. The excess profits tax ceased on Dec. 31, 1947. The corporation tax continued unchanged and in addition a 5% withholding tax was imposed on dividends payable by subsidiary companies in Canada to the parent company. This was expected to yield Can. $3,000,000–$4,000,000.

*Australia.*—At the end of 1946 the duty on gasoline was reduced, sales tax on clothing was removed and reduced on other goods. The concessions on sales tax cost £A16,000,000, other reductions £A4,000,000. For the fiscal year beginning July 1, 1947, the social service contribution was made slightly lighter in the lower middle range of income. There was also a general reduction in income tax, making rates of taxation lower and rebates higher. The rebatable allowance for wives was increased from £A100 to £A150, for dependent children from £A30 (£A75 for the first) to £A50 (£A100 for the first). The rate on income from personal exertion ran from 2*s.* 1*d.* (previously 3*s.*) in the £A1 to 13*s.* 6*d.* (14*s.* 6*d.*) on the excess of more than £A5,000. An agreement for the avoidance of double taxation was made with the United Kingdom. The budget proposed the abolition of the wartime (company) tax.

*New Zealand.*—Total taxation in 1946–47 was £NZ113,100,000 and estimated at £NZ113,400,000 for 1947–48, little less than its record high level. The only tax relief in the 1947 budget provided for exemption from the 33⅓% supertax on taxable unearned income up to £NZ200. Taxation as a proportion of aggregate private income was slightly less than 30%. In 1947–48 direct taxes were estimated at £NZ60,000,000 and indirect taxes at £NZ52,000,000.

*South Africa.*—The budget for 1947–48 reduced taxation by £SA15,800,000. This was made possible because of reduced defense expenditure although other expenditure rose. The basic formula applying to the taxation of gold mining companies was to be revised, reducing taxation in typical cases by about 10%. This, together with other concessions to gold mining, would cost

£SA2,225,000. The special levy on the diamond industry was reduced to one-third, which would cost £SA400,000, and the profits tax on fixed property abolished at a cost of £SA700,000. The excess profits duty and the special levy on trade profits were also abolished at a cost of £SA8,500,000.

*Eire.*—The autumn budget introduced further food subsidies and corresponding increases in taxation. Rates of surtax on incomes of more than £1,500 were raised to range from 9*d.* to 8*s.* 6*d.* in the pound. Excise duty on spirits was increased to £6 17*s.* 0*d.* per proof gallon, on wine doubled, on beer raised to £10 11*s.* 0*d.* per standard barrel and on tobacco to 30*s.* 6*d.* per pound. The duty on furs and cosmetics was doubled, entertainment taxes were raised and the road tax on motorcars raised by 50%. The stamp duty on the transfer of estates was raised. Income tax from April 1948 would be at the standard rate of 7*s.* in the pound instead of 6*s.* 6*d.*

*India.*—The budget for 1947–48 was the first to be introduced by an Indian finance minister. A new fiscal policy, designed to reduce economic inequality and to attain social objectives, was forecast. On the basis of existing taxation Rs.279 crores were expected, as against Rs.336 crores in 1946–47. Among changes in taxation was first the abolition of the salt tax, which meant a loss of Rs.9¼ crores. Although quantitatively unimportant, the salt tax had long been regarded as obnoxious and had been the centre of political agitation. This left an excess of expenditure over revenue of Rs.57 crores, and the greater part of the gap, Rs.44 crores, was filled by direct taxation. Income tax was made more progressive by raising the exemption limit from Rs.2,000 to Rs.2,500. A special income-tax of 25% was proposed (eventually reduced to 16%) on business profits (including the professions), in excess of one lakh of rupees. The yield was estimated at Rs.30 crores. A capital gains tax was also introduced, on the U.S. model, and was expected to yield Rs.3½ crores. At the same time a commission was set up to investigate the accumulation of war wealth. The rate of corporation tax was raised from $\frac{1}{16}$ to $\frac{1}{8}$, which would yield Rs.4 crores. Rates of income tax were not changed but the steepness of supertax was increased to reach the maximum rate of $\frac{21}{32}$ at Rs.1.2 lakhs for unearned income (instead of Rs.3½ lakhs), Rs.1.5 lakhs for earned income (previously Rs.5 lakhs). This would yield Rs.2½ crores. Dividend taxation was made more penal without expecting additional yield. Of indirect taxes the export duty on tea, which was of temporary nature, was raised from 2 annas per pound to 4 annas. These taxation measures would still leave a deficit. India and Pakistan would later present separate budgets.

*France.*—The main problem of French public finance, for a long time, was not that public expenditure was too large, in comparison with other countries, but that tax receipts were too low. Total taxation, including social insurance contributions, came to about 12%–13% of the total of private incomes in 1946. In the latter half of 1946 and throughout 1947 rising prices, caused to a large extent by the continuance of the budget deficit, made taxation, especially on profit income, lighter because of time lags between income accruals and tax payments. But the most important factor remained the evasion of taxation which was made so much easier by the complicated tax system. Rates of taxation were high but were enforced on fixed incomes only, while particular classes, especially farmers and shopkeepers, escaped lightly. In Nov. 1947, following the inventory of the financial system published a year earlier, Robert Schuman, newly elected prime minister, outlined a simplification of the income-tax system within the existing framework. Hitherto different subsidies applied to different types of incomes; henceforth, salaries (and wages) and other incomes only would be distinguished. Unification was expected to make tax collection more effective and bring in higher receipts; it was promised that the much needed general reform would come later. For salaries the exemption limit was raised to Fr.80,000, for other incomes to Fr.40,000. The tax on earnings was to be 15% (but 21% on professional incomes because of greater ease of evasion), and on nonagricultural profits 36%. An attempt would be made to tax farmers on actual profits and not on an out-of-date nominal figure, though they continued to receive special exemptions. Discounts would be given on prompt payment and interest charged on delays.

*Netherlands.*—The ordinary budget for 1947 showed revenue amounting to Fl.2,401,000,000 giving a surplus of Fl.91,000,000. The deficit, however, together with the extraordinary budget, was at Fl.1,967,000,000, an improvement on 1946. Two special levies were introduced, the property increment tax and the capital levy. The primary aim of these measures was to restore monetary equilibrium but they also helped in re-establishing the state's financial position. The property increment tax applied to the increase in property values between May 1, 1940, and Jan. 1, 1946. Corporations paid 50%, persons paid 50%–70% with certain exemptions. The capital levy was based on capital as of Jan. 1, 1946, and it was at the rate of 10% on part of the taxable amount up to Fl.100,000, rising to 25% for Fl.1,000,000 and more. Foreigners subject to the ordinary capital tax also paid the capital levy. Generally, they paid on physical assets in the Netherlands but not on paper titles.

*Switzerland.*—Ordinary revenue in 1946 came to Fr.535,000,000 leaving a deficit of Fr.135,000,000 which was more than made good by the surplus of Fr.216,000,000 on the extraordinary budget. Of the revenue Fr.230,000,000 represented customs duties, Fr.67,000,000 stamp duties, Fr.83,000,000 duties on tobacco and beer, Fr.39,000,000 post office and alcohol monopoly profits and Fr.27,000,000 taxes on property. Extraordinary taxes included national defense contribution (Fr.407,000,000), sales tax (Fr.347,000,000), national defense duty (Fr.156,000,000) and other taxes, together Fr.1,134,000,000. In the first half of 1947 customs receipts were about 50% higher than in the previous year, and stamp duty receipts moved similarly.

*Sweden.*—Revenue for 1947–48 was budgeted at 4,175,000,000 kr., yielding a surplus of 112,000,000 kr. over ordinary expenditure. Tax revenue exceeded that for 1946–47 by more than 400,000,000 kr. in spite of the abolition of the turnover tax since Jan. 1, 1947. The turnover tax yielded 400,000,000 kr. in 1946. The higher tax yield was partly the result of the introduction of the pay-as-you-earn method in Jan. 1947. Taxation was based on current income, whereas taxation in 1946–47 was based on income in 1944. After that date there was a substantial rise in money incomes of the order of one-third. The new income tax involved some relief for married couples without children and for single persons, but for persons in the higher income brackets taxes would be more severe. The method of child's relief was altered. A special tax on capital exceeding 30,000 kr. was introduced, but it was stipulated that central and local government taxes together must not exceed 80% of income. Tax on corporation income was raised from 32% to 40%. An additional inheritance tax was levied on estates of more than 30,000 kr. On balance persons were granted a relief of 361,000,000 kr. but corporations paid an additional 119,000,000 kr. and capital 77,000,000 kr.

*Spain.*—For 1947 taxes were increased. Taxes on incomes and on real estate were increased by 20%, and also taxes on various consumers' goods and capital issues. Postage rates went up sharply. Even so the budget showed a deficit.

*Italy.*—The autumn budget took measures to raise taxes to cover, among other things, public works. New taxes were introduced on sales, gasoline, sugar and foreign cigarettes. These taxes would yield a revenue of lire 160,000,000,000 in a full year. New sales taxes would bring in lire 60,000,000,000–65,000,000,000; the tobacco monopoly expected to make a profit of lire 10,000,000,000 on the sale of foreign cigarettes, and gasoline was increased from 60 to 100 lire per litre.

*Greece.*—In Nov. 1947 the government announced 14 new measures of taxation to be included in the economic program, with the advice of the United States mission. An additional 600,000,000,000 drachmae were required to cover increasing expenditure, making the burden of taxation exceptionally heavy.

*Argentina.*—In the first half of 1947 revenue amounted to $1,385,000,000 as against $844,000,000 in the first half of 1946. The draft budget for 1948 expected a revenue of $3,092,000,000 covering ordinary expenditure which, however, excluded defense expenditure. Profits on exchange were reckoned to bring in about $650,000,000, lottery $43,000,000, postal services $86,000,000. The estimate for customs receipts, $620,000,000, presupposed vastly expanded imports. Income tax would yield $449,000,000, excess profits tax $126,000,000, estate duties $60,000,000 and capital gains tax $125,000,000. Excise, sales and stamp duties were taken at $700,000,000. (T. BAR.)

## Tea.

Imports of tea into the United States in the year ending July 1, 1947, were approximately 94,000,000 lb.—about 10,000,000 lb. over 1946 imports and 6,000,000 lb. over the prewar average. Most of this tea came from India and Ceylon; the Netherlands Indies, which usually shipped about 20,000,000 lb., were still in an unsettled political condition. Average consumption of tea in the U.S. was estimated at .5 lb. per capita in 1947 compared with the war-time high of .59 lb. in 1945 and a prewar average of .67 lb., 1935–37.

In Java great damage had been done to the tea plantations both by the Japanese and revolutionists; about 30% of the tea processing plants were reported as destroyed. The Dutch forces reoccupied about 90% of the tea area in 1947 but did not expect to restore normal production until 1952. (J. C. Ms.)

**Technicolor:** *see* MOTION PICTURES.

## Telegraphy.

U.S. telegraphy made steady progress during 1947 in its nation-wide mechanization program. Important new telegraph apparatus and methods were placed in operation to improve service in all parts of the country. Large push-button switching centres and a number of carrier systems were installed. The radio beam system linking New York, Washington, D.C., and Pittsburgh was fast nearing completion.

**Push-Button Switching Systems.**—New streamlined push-button switching systems were placed in service at Philadelphia and Cincinnati. High-speed switching systems also were in operation at Richmond, Va., Atlanta, Ga., St. Louis, Mo., Dallas, Tex., and Oakland, Calif. The postwar mechanization program provided for similar systems in 11 other centres, each serving large surrounding areas, to complete the national network.

Through the push-button switching system, telegrams flash to all parts of the country with vastly greater speed and efficiency. This system speeds telegrams to their destinations by the mere pushing of a button, where under the old method each message had to be retransmitted manually at central offices. With the new system each message is typed only once, at the point of origin.

**Radio Beam Telegraph.**—Progress was made in the construction of a New York-Pittsburgh-Washington triangular radio beam network which followed successful experimental operation of the first such system between New York and Philadelphia. Radio towers spaced 30 to 50 mi. apart were erected and associated equipment was installed in the triangular network before the end of the year.

Sites for relay stations for further extension of the radio beam network were obtained as far west as Kansas City, and south to Atlanta. The beam system makes possible a vast increase in the number of channels available for the handling of telegraph traffic and provides amply for the telegraph growth of the future and for other communications needs.

The beam system affords the ultimate in service capacity and continuity. Since atmospheric static is not felt in the microwave region, radio beam transmission is unaffected by electrical disturbances and the hazards of ice, high wind and falling trees are eliminated. Radio beam systems would replace many of the familiar pole lines.

Telegraphy proceeded during 1947 with plans to meet television program demands through the use of its radio beam network. Equipment for the purpose was being manufactured. Frequencies in the 6000 megacycle common carrier band were to be used. Newly developed tubes delivering about 2 watts of radio frequency power and not requiring demodulation at the relay points were being employed.

**Carrier Telegraph Systems.**—Expansion of wire carrier telegraph systems, which make it possible to send many messages at one time over two wires by using a number of tones or frequencies, was intensified during 1947. New installations in the first 9 months added a capacity of 275,000 channel miles to the 200,000 channel miles in operation at the beginning of the year. At midyear about 30% of all trunk telegraph circuits were operated by carrier.

During 1947, a 150-kilocycle carrier system was developed specifically for use on the radio beam telegraph system. The 150 kc. band is subdivided into voice-frequency bands which accommodate telegraph, telephone or facsimile transmission. Each of these 150 kc. systems provide as many as 576 teleprinter channels operating in 2 directions.

**Facsimile.**—There were two new developments in the field of facsimile telegraphy. One was the teletape, a simplified facsimile machine which was developed for sending and receiving messages on Western Union teledeltos tape. A message is written on the tape and a button is pressed to start transmission. In a matter of seconds the message is reproduced in facsimile by the distant teletape machine.

The other development was the Desk-Fax, a small facsimile machine through which a businessman can send and receive telegrams from his desk. The Desk-Fax, weighing about 7 lb. and 8 x 8 x 5 in. in size, was designed to provide direct pickup and delivery of telegrams in the offices of telegraph users.

Additional telefax apparatus for automatic transmission of train orders was placed in service on railroad lines. Facsimile equipment to accommodate reservation and other communications requirements was installed by air lines. (J. L. E.)

**Great Britain.**—On Jan. 1, 1947 (consequent upon the Cable and Wireless act, 1946), a new court of directors was appointed for Cable and Wireless, Ltd., which operated the "via imperial" oversea telegraph services. The court, consisting of Colonel Sir Stanley Angwin as chairman, John Innes (managing director), Major General Leslie B. Nicholls, (full-time director) and A. C. Black and G. N. Gallie (part-time directors), assumed control of 155,000 nautical miles of cable routes, 7 cable repair ships, nearly 150 wireless circuits, 190 stations and more than 11,000 staff.

During 1947, arrangements proceeded for completing transfer of the control and operation by the dominions of the cable and wireless services within their territories. Developments were directed principally toward restoring facilities suspended during

World War II, introducing new services to meet postwar requirements, repairing war-damaged cables and introducing improvements unavoidably postponed during the war period. With these aims in view the network was being systematically surveyed by the new management. Major General Nicholls visited many stations in the middle and far east to discuss telecommunication developments. During the latter part of the year the managing director, accompanied by the traffic manager, undertook an extensive tour of Latin America with similar objectives.

Commercial services reintroduced during the year included facilities for sending urgent telegrams over most of the company's routes. Special-occasion services, such as through-working between Bradford and Australia, New Zealand and Argentina during the wool sales, were reintroduced as needed. Special facilities for passengers at London airport were also introduced and plans were being developed for providing similar services at other airports in Great Britain and throughout the world.

During 1947 direct cable working between the United Kingdom, and Spain and Singapore was resumed; and direct wireless communication was opened between London and Kabul.

Interisland and external radiotelephone services were expanded in the West Indies, and the company's stations provided circuits for external radiotelephone services from Athens, Malta and Hong Kong. Plans were in hand to provide radiotelephone circuits from the middle east and west Africa. Further progress was made with the restoration of cables in the far east. The company planned to restore the United Kingdom-Newfoundland transatlantic cable. Repair work was to be undertaken on the west coast of America and upon cables elsewhere. A new cable repair ship was on the stocks at Newcastle-on-Tyne and two more ships, acquired from the admiralty, were being refitted for service.

New power plant was being installed at the Brentwood, Middlesex, and Somerton, Somertshire, wireless receiving stations in the United Kingdom; a new wireless receiving station was being erected at Singapore and plans were in hand to build a relay station at Nairobi; the wireless relay stations at Colombo and Barbados were being extended. Loutsa (Athens) wireless receiving station was to be re-established. Extensive repair and extension work was also being carried out at Buenos Aires, Dorchester (Dorset, England), Kuwait, Lisbon, Rodrigues, Suez and Vigo. (A. S. A.)

## Telephone.

Significant telephone history was made in 1947, particularly in the United States where this type of communication had reached the highest stage of development in the world.

Beginning the year with 57.9% of the world's total, the United States added further to its leadership with a gain of more than 3,000,000 telephones and made new strides in the extension and improvement of telephone service.

The business of providing telephone service in the United States had become an $8,000,000,000 industry in terms of investment in plant and equipment. And yet, with more than two years of record-breaking expansion behind them, the telephone companies approached the year 1948 with a large program of new construction still to be accomplished.

While substantial progress was made during 1947 in reducing the cumulative total of unfilled applications, the continued heavy demand for telephones was such that there were nearly 2,000,000 people waiting for service at year end. The existence of any backlog was extraordinary in the light of the fact that more than 7,000,000 telephones had been added in the U.S. after V-J day.

Like the year before it, 1947 witnessed the manufacture and installation of huge quantities of switchboards, cable, wire and other telephone facilities, along with the construction of new buildings and additions to others. The additions to plant and equipment were put to work serving new customers as fast as the installations were completed.

The industry's tremendous growth in the United States was reflected by its (1) 1947 expenditure of more than $1,250,000,000 for new construction, (2) raising of record sums of new capital to finance the expansion program and (3) reaching of an all-time high in the number of stockholders and employees.

**Plant and Equipment.**—The enormity of the expansion job is indicated by Western Electric company figures on shipments to the Bell system operating companies during the first three quarters of 1947. These shipments included 26,000,000,000 conductor ft. of local exchange cable and enough dial equipment and local manual switchboard positions to serve 2,500,000 telephones. There were likewise large-scale additions and extensions to the Bell system's long-distance network. The addition of about 4,400 toll circuits during the first nine months of the year brought the system total to more than 70,000.

To make room for the large quantities of new equipment needed to serve more customers required an extensive building program. In the Bell system alone there were approximately 1,500 building construction projects completed or underway in 1947, bringing the postwar total to more than 3,000. These ranged in size from small repeater stations and community dial offices to a multimillion dollar long distance and office building in Boston, Mass.

**Telephones.**—A net gain of more than 3,000,000 telephones in 1947 brought the U.S. total near 35,000,000, of which 28,500,000 were served by the Bell companies and the remainder by the 5,900 independently owned companies whose lines connect with those of the Bell system. Had it not been for the nationwide telephone strike in the spring, which lasted six weeks, the 1947 telephone gain in the United States would probably have approached or equalled the record 1946 increase of 3,700,000 telephones.

At the end of 1947 the Bell system's postwar gain in telephones had reached 6,750,000—an increase amounting to more telephones than the entire number served by the Bell system after its first 40 years of business.

Estimates on world telephone development, dated Jan. 1, 1947, put the world total at 54,600,000, of which 57.9% were in the United States. On that date the United States had about 1 telephone for every 4 persons, as compared with the world average of 1 for every 43 inhabitants.

**Traffic.**—With millions of new customers using telephones, the amount of telephone service provided in the U.S. continued to increase. In the year ended Sept. 30, 1947, the industry handled, on the average, 136,621,000 completed local and toll conversations a day. This represented an increase of more than 8,500,000 conversations over the daily average for 1946. Completed toll conversations were up from 5,635,000 to 5,900,000 per day.

There was substantial improvement in the quality of the service. Speed of service on long distance calls was considerably greater, and a higher percentage of toll calls was completed while the calling party stayed on the line. Local manual service reflected faster answers by operators. Less turnover in the operating force, resulting in greater force experience, was an important factor in the service improvement.

**Personnel.**—The total personnel of the telephone operating companies in the U.S. passed the 600,000 mark in 1947. This new high in the number of employees was the result of the combination of more customers, more calls and the huge construction program. The Bell system, including the Western Electric company and Bell Telephone laboratories, embraced an army of more than 650,000 men and women.

The American Telephone and Telegraph company, most widely owned of any U.S. business, reached a new high of 712,300 stockholders in Aug. 1947, and by year end the total surpassed 720,000.

**Developments.**—The growing use of radio to supplement wire lines was among the more significant trends in 1947. The New York-Boston radio relay system of the Bell system opened in the fall for experimental use. It provides long distance circuits which may be used for hundreds of simultaneous telephone conversations, for transmitting television programs and for other communication services. This system employs hilltop relay stations for sending and receiving beamed microwaves. The Bell system had begun work on a similar project between New York and Chicago.

The program for operator dialing of long distance calls on a nation-wide basis was further advanced when installation of equipment was begun on an extensive toll dialing network centring at New York city. Plans were well under way for similar installations at other major toll centres.

Substantial progress also was made on the program of converting from local manual service to dial operation and on the extension and improvement of rural telephone service. The southern transcontinental coaxial cable was completed from Florida to California, and many more miles were added on other segments of the nation-wide coaxial network. Mobile telephone service was introduced in scores of additional cities and towns and along several major highways. Overseas telephone service continued to expand. (W. S. G.)

**Teleran:** *see* Munitions of War; Radio.

## Telescopes.

The most important development of the year 1947 was the completion of the optical figuring of the 200-in. mirror for the Mount Palomar observatory in southern California. Because of its great size and focal length, tests of its figure had to be made with the mirror in a vertical position. Both visual and photographic methods were used, employing a Hartman diaphragm, and the final figure was found to be good. After shipment to Mount Palomar the mirror was aluminized and placed in the completed telescope mounting, where adjustments of the support system to correspond to a horizontal position of the mirror were begun. These adjustments were determined by observations of stars near the zenith with a knife edge (Foucault test) at the primary focus in the centre of the telescope tube.

Optical figuring of the 48-in. correcting plate to be used in combination with a 72-in. concave mirror in the Schmidt telescope of the Palomar observatory was also completed. This powerful instrument, with a focal length of only 10 ft., was nearly ready for adjustment at the close of 1947.

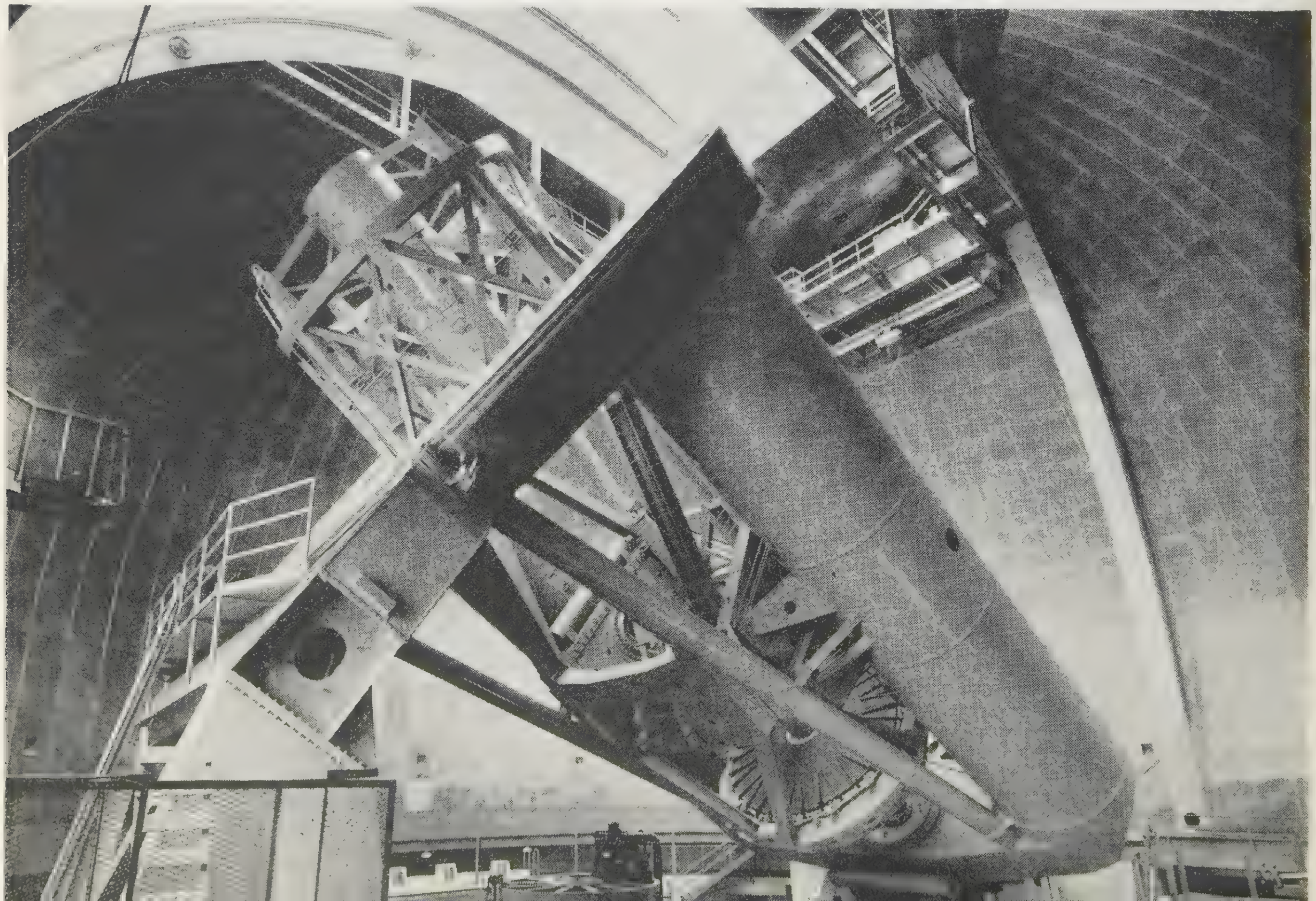
The 74-in. mirror for the Radcliffe observatory in South Africa was finished, and after aluminization was to be forwarded from England. The mounting was ready for use.

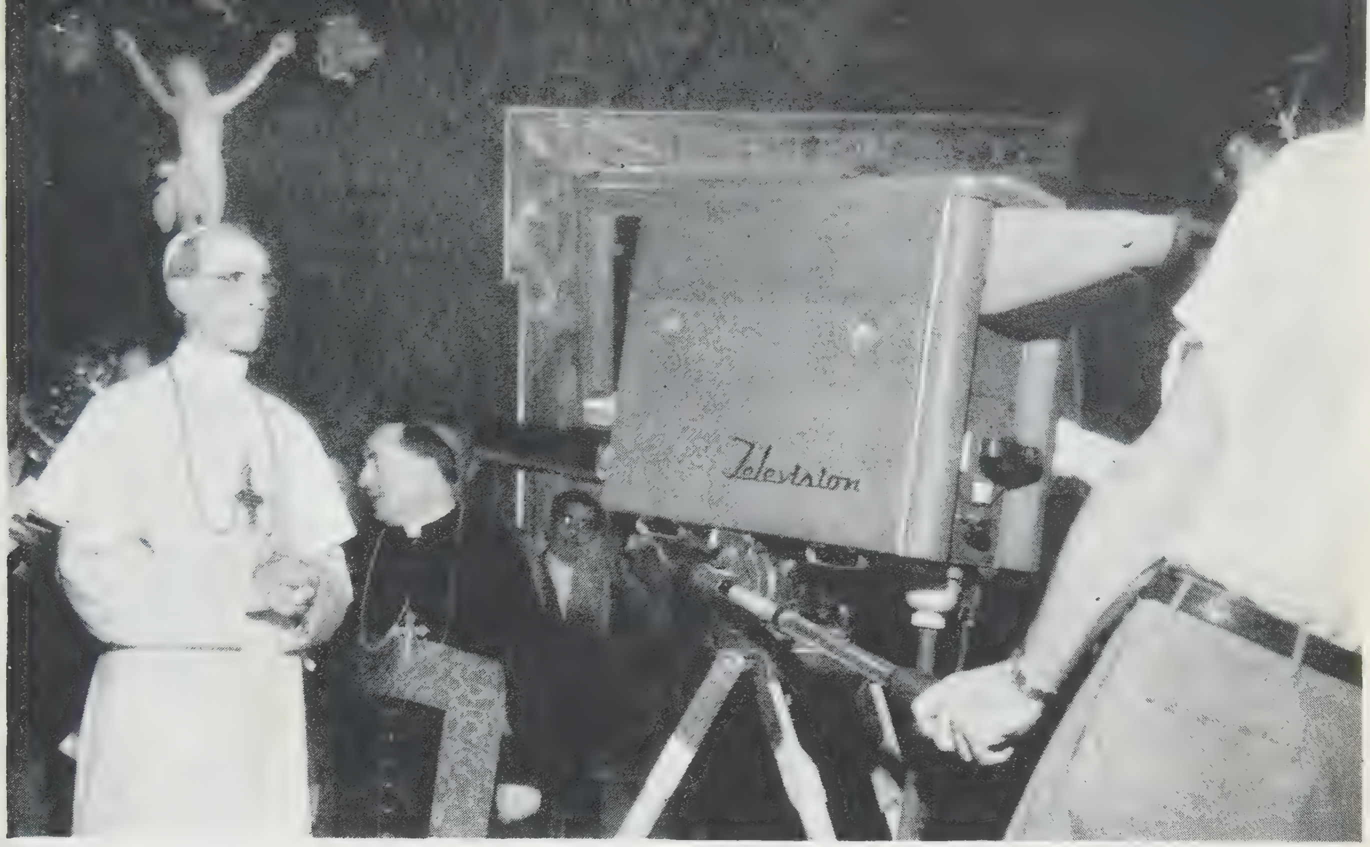
The design of the 120-in. telescope of the Lick observatory, Mt. Hamilton, Calif., was essentially complete. Preparations had been begun for the casting of the pyrex mirrors for this instrument, for several other large telescopes and for a Schmidt telescope approximately one metre in diameter, for the Stockholm observatory. Several representatives of European countries visited the U.S. during 1947 to investigate the possibility of replacing instruments destroyed during World War II. (W. S. Ad.)

## Television.

The status of television in the United States during 1947 changed from that of a demonstrated technical reality to a firmly established broadcasting service.

THE 200-IN. REFLECTOR TELESCOPE installed on Mt. Palomar, Calif., in 1947. Astronomers planned to use it more as a giant camera than a telescope in investigating the expanding universe theory, the source of stellar energy, the origin of chemical elements, etc.





POPE PIUS XII being televised at the Vatican on July 9, 1947. The telecast was picked up by receiving sets elsewhere in the Apostolic palace, where it was seen by diplomats and church dignitaries

One of the major factors contributing to this change was the manufacture of approximately 170,000 television receivers, mostly by only 2 or 3 leading manufacturers during a substantial part of 1947. Toward the end of the year, however, a large number of radio manufacturers was entering the television receiver field.

The majority of the receivers marketed in 1947 were table models employing 10-in. directly-viewed picture tubes. Other receivers utilized directly-viewed tubes ranging in diameter from 7 in. to 20 in. The most complete television receiver models included facilities for the reception of AM, FM and short-wave stations and also a phonograph.

Two receivers of the projection type, employing reflective optics and special viewing screens were introduced during 1947. Although the screen employed in one of the receivers was of the reflection type while the other was of the translucent variety, both provided directivity patterns which resulted in a substantial brightness gain. Directional viewing screens had the additional advantage of reducing the detrimental effects of room lighting on picture contrast. These receivers were capable of producing 15 by 20 in. pictures having highlight brightnesses in the range between 30 and 100-ft. lamberts.

The Federal Communications commission hearing with respect to adoption of colour television standards for commercial operation in the frequency band from 480 to 920 megacycles continued into the early part of 1947 and the decision was announced in the spring. The commission stated that there was serious question regarding the desirability of the standards proposed for this type of operation and that insufficient field testing had been done to prove that a satisfactory colour television service could be rendered to the public.

Deliveries of television transmitters during 1947 made it possible for ten new stations to institute program service. At the end of the year 18 stations were operating on a commercial basis, and the Federal Communications commission had either licensed or authorized more than 70 stations.

An important contribution to solution of the television network problem was the completion of the American Telephone and Telegraph company's radio relay system between New York city and Boston, Mass. This system, utilizing frequencies in the vicinity of 4,000 megacycles, employed 7 repeater stations to cover a distance of approximately 220 mi. Highly directional antennas were used at each repeater station. During the formal demonstration of the system in November, television images were transmitted in both directions between Boston and Washington, D.C. Coaxial cable was used for the New York to Washington portion of the circuit.

Considerable effort was expended by U.S. television broadcasters in the development of new program techniques. The possibilities of quiz programs, particularly of the audience participation type, were investigated. Several excellent dramatic presentations were broadcast. The American Federation of Musicians' ban on its members performing for television programs continued in effect, and instrumental music was obtained from recordings.

Sporting events constituted one of the major sources of television programs; substantially every type of amateur or professional sports contest was televised at some time during the year. The availability of television cameras equipped with the highly sensitive image orthicon substantially eliminated the lighting problem in the televising of sports events.

The political potentialities of television received attention. The president and other government officials were televised on several occasions. Availability of television broadcasting facilities along the eastern seaboard was one of the major factors in the selection of Philadelphia, Pa., as the site for both the Republican and Democratic national conventions of 1948.

As the size of the television audience expanded with the installation of large numbers of new receivers, an increased interest developed on the part of advertising agencies. At the end of the year large numbers of programs were sponsored by commercial organizations; several stations were operating on a commercial basis and had established rates for their broadcasts.

Development work on colour systems continued in the laboratory. On April 30 a demonstration of the RCA all-electronic colour television system was given at the Franklin institute in

Philadelphia. A 7.5 by 10-ft. colour picture was projected by three kinescopes producing separate red, green and blue images superimposed on the screen to form a single image in natural colour. (*See* also ADVERTISING; MOTION PICTURES.)

(G. L. Bs.)

**Great Britain.**—The first postwar radio exhibition, held in Oct. 1947, gave manufacturers an opportunity to show advances made in design and construction of television receivers after 1945. Although nothing revolutionary was apparent, there were a number of detailed improvements, such as the fitting of interference suppression in nearly all the better sets, flat-ended cathode ray tubes and the use of miniature tubes.

Prices advanced over prewar, and the lowest figure was £50, against £30 in 1938. A few combination television-radio-phonograph receivers were on view at prices from £200 to £250, tax included.

At the beginning of the year the licence fee to use a radio receiver was increased to £2 where a television receiver was also installed. By the end of August, 23,150 television licences had been issued.

Two important developments were a new camera that gave excellent results under indifferent lighting conditions, and a system of filming the image on the screen, that marked a step toward recorded television programs. This system was first used for the cenotaph broadcast on Remembrance day, and again for the royal wedding, at which event the new camera made its debut.

It was expected that the television service would be extended to the midlands within a year or two, with the transmitting centre at Birmingham. Experimental demonstrations of relaying the program by radio beam had already been made.

Outstanding broadcasts of the year included the departure of the royal family for South Africa, taken on the platform at Waterloo station, their return to London and the eight-day tennis finals at Wimbledon.

It was announced on Dec. 1 that Maurice Gorham had resigned from his post as head of the B.B.C. television service and would be succeeded by Norman Collins, former head of the light program.

(G. P.)

**Tellurium.** Production of tellurium in the United States dropped from 80,750 lb. in 1945 to 3,765 lb. in 1946, because of curtailed operations in the copper refineries that recover it as a by-product. Production in Canada was only 484 lb. in 1945, but rose to 15,848 lb. in 1946 and 38,000 lb. in 1947.

(G. A. Ro.)

**Temporary Controls, Office of:** *see* PRICE ADMINISTRATION, OFFICE OF.

**Tennessee.** A south central state, 16th to enter the union, called the "Volunteer state." Land area 41,961 sq.mi., water area 285 sq.mi. Population (1940) 2,915,841; rural 1,888,635; urban 1,027,206; rural farm 1,271,944; native white 2,395,586; Negro 508,736; foreign born 11,320; other races 199. The bureau of the census estimated the civilian population on July 1, 1945, at 2,832,480. Capital, Nashville (167,402). Other cities include Memphis (292,942); Chattanooga (128,163); Knoxville (111,580).

**History.**—The governor of Tennessee in 1947 was James Nance McCord; secretary of state, Joe C. Carr; state treasurer, C. C. Wallace; comptroller of the treasury, J. J. Maddux; adjutant general, G. H. Butler; attorney general, Roy H. Beeler. Commissioners were as follows: agriculture, O. E. Van Cleave; conservation, Howell Buntin; education, Burgin Dossett (superintendent of schools, appointed by governor); finance and taxation, Sam K. Carson; highways and public works, C. W. Phillips; institutions, Dr. W. O. Baird; welfare, William A. Shoaf; insurance and banking, James M. McCormack; labour, W. E. Jacobs, Sr.; public health, Dr. R. H. Hutcheson; railroad and public utilities, Andrew T. Taylor, Leon Jourolman, Jr., John Hammer; safety, Lynn Bomar; employment security, W. O. Hake.

The general assembly of 1947 enacted a 2% retail sales and use tax, making possible additional $11,800,000 appropriations to public schools each year and additional sums for state universities and social security. A retirement system for state employees was established. Bridge tolls were suspended. A ban was placed on the "closed shop." Compulsory school attendance was raised to 16 years. An enabling act made it possible for Tennessee to participate in the federal hospital construction program.

**Education.**—In 1946, of 4,917 elementary schools only 2,318 were one-teacher schools compared with 3,555 in 1927. Enrolment in elementary schools in 1946 was 498,904, number of teachers 16,116. There were 548 high schools, enrolment 118,601, number of teachers 5,503.

**Social Insurance and Assistance, Public Welfare and Related Programs.**—In Sept. 1947 the total amount of assistance was $1,683,978; 48,532 old-age recipients received $999,331; aid to dependent children 37,375 (13,933 families), totalled $630,957; aid to the blind, 1,745, amounted to $53,690. In 1946–47 there were 7 correctional institutions; expenditures $1,508,048. Separate schools were maintained for the blind and the deaf; three state hospitals for the insane; a home for the feeble minded and an industrial school.

**Communications.**—Of the 67,388 mi. of public road, 7,563 mi. were state highways; state expenditures were $22,614,393 for the year ending June 30, 1947. There were 3,494 mi. of railroads at the end of 1946. As of Nov. 1947 there were 1,047 mi. of designated civil airways and 68 airports, of which 21 were substandard, 9 class I, 23 class II, 7 class III, 5 class IV and 3 class V (accommodating the largest planes). There were 444,300 telephones in the state, 311,300 residential and 133,000 business. Water-borne commerce on the Tennessee river in 1945 amounted to 2,163,404 net tons (1946 est. 2,399,250); Cumberland river 813,833; Mississippi river 12,097,766 net tons from Ohio river to Baton Rouge, La., and 2,593,967 at Memphis.

**Banking and Finance.**—In June 1947 there were 70 national banks and 224 state banks; assets $1,270,680,000 for national banks and $608,658,747 for state banks; deposits $1,194,146,000 for national banks and $568,819,833 for state banks. Savings and loan associations, Sept. 30, numbered 39 with assets of almost $91,000,000. Federal associations constituted 35 of these with assets of more than $90,000,000.

Total state revenue for the fiscal year 1946–47 was $79,401,150; revenue shared with counties and cities $10,121,024; revenue for state purposes $69,280,126. Direct bonded debt for the state was $68,056,500; highway reimbursement debt $4,793,014; gross debt $72,849,514; unencumbered surplus in the sinking fund $2,669,296; net debt $70,180,218.

**Agriculture.**—There were 234,431 farms in 1945; 17,849,455 ac. in farms and 5,845,145 ac. in harvested crops.

Gross value of agricultural production in 1946 was $535,518,000; cash farm income $413,752,000 (including government payments); cash farm income from crops was $217,466,000; from livestock $182,113,000; government payments $14,173,000. The forest area was 12,641,000 ac.

Table I.—*Leading Agricultural Products of Tennessee, 1947 and 1946*

| Crop | 1947* | 1946 |
|---|---|---|
| Corn, bu. | 62,386,000 | 65,670,000 |
| Tame hay, tons | 2,248,000 | 2,417,000 |
| Cotton, bales | 505,000 | 520,000 |
| Wheat, bu. | 5,400,000 | 3,878,000 |
| Oats, bu. | 6,500,000 | 6,492,000 |
| Tobacco, lb. | 147,230,000 | 170,975,000 |
| Potatoes, bu. | 2,821,000 | 3,404,000 |
| Sweet potatoes, bu. | 2,241,000 | 3.150,000 |

*Estimated.

**Manufacturing.**—In 1947 it was estimated that approximately 3,150 manufacturing plants yielded products valued at $1,500,000,000 of which $650,000,000 was added by manufacture. Wages paid approximated $515,000,000 for 245,000 wage earners.

**Mineral Production.**—The value of coal mined in Tennessee during 1946 was $23,554,500 compared with $23,034,000 produced in 1945; of zinc $6,005,816 compared with $2,969,801; of copper $4,163,400 compared with $1,658,819; of barite $272,169 compared with $256,756.

(C. E. A.)

Table II.—*Principal Mineral Products of Tennessee, 1945 and 1944*

| Mineral | Value 1945 | Value 1944 |
|---|---|---|
| Coal | $23,034,000 | $23,088,000 |
| Stone | 6,318,915 | 7,776,775 |
| Cement | 4,669,330 | 6,080,921 |
| Zinc | 2,969,801 | 9,309,468 |
| Sand and gravel | 2,578,379 | 2,314,478 |
| Lime | 1,373,268 | 1,246,802 |
| Clays | 1,196,498 | 1,500,000 |
| Barite | 256,756 | 279,567 |

## Tennessee Valley Authority.

For the second consecutive year, the TVA's integrated multiple-purpose system of dams and reservoirs controlled a major flood. In Jan. 1947, the reservoirs reduced by 2.7 ft. the crest of a flood which, uncontrolled, would have been the 6th largest in the history of Chattanooga, exceeded only by those of 1867, 1873, 1886, 1917 and 1946. Lacking control, the 1947 flood would have reached a stage of 44.5 ft. and would have caused estimated damage of $7,500,000.

Power production was nearly 15,000,000,000 kw.hr. in the fiscal year ended June 30, 1947, or about 10 times as much as was produced in the same region in 1933, when TVA was established. TVA power revenues were $44,144,000, and net income before interest was $21,839,000, representing a return of 5.5% on the average net investment in power facilities. The 5th and final generating unit at Kentucky dam was placed in operation in December, bringing system-installed capacity to 2,570,900 kw. About 370,000 kw. of generating capacity was being added to meet growing power loads.

Distribution of TVA power by 139 municipal and co-operative systems to 743,600 consumers during the fiscal year 1947 brought combined revenues of $51,000,000 and net income of $9,983,000. More than 4,000,000,000 kw.hr. was sold by the local agencies. By the end of 1947, the number of consumers served by 140 local systems approached 800,000.

About 75,000 consumers were added during the fiscal year, chiefly through construction of 6,000 mi. of rural lines, bringing the total to about 38,000 mi. of line serving 250,000 rural consumers, including 150,000 farms. Work was proceeding on an additional 25,000 mi. of line to serve 125,000 farms.

Residential use of electricity in the fiscal year was 2,197 kw.hr. per customer at an average cost of 1.66 cents per kilowatt hour, as compared with national averages of 1,385 kw.hr. and 3.14 cents. Rate reductions totalling $157,000 annually were made by some of the distributors, and in 1947, 27 of the distributing systems were applying resale rate schedules below those established in 1933 and then regarded as markedly low.

About 276,636,000 ton mi. of freight were carried on the Tennessee improved waterway in the first 10 months of 1947, nearly 10% more than in all of 1945, the previous record year. Two new-type articulated, or jointed, barges designed to carry 600 automobiles at speeds up to 17 mi. per hour, delivered several thousand cars to Guntersville, Ala., for distribution to 162 points in the southeast. About 7,000 pleasure craft, worth $2,750,000, were in operation on the lakes, and 100 privately operated boat docks had been established.

At the end of the fiscal year, about 40,300 test-demonstration farmers in 26 states were using TVA concentrated plant nutrients, and reports of state agricultural extension services revealed continued success of the test demonstrations in terms of shifts to soil- and water-holding cover crops, more livestock development, increased production and spread of soil conserving practices. There were 34 large forest-management demonstrations on industrial and institutional lands and 559 woodland management demonstrations on farms. Organized fire protection had been extended to 6,000,000 ac. through co-operative efforts of states, local agencies and TVA.

During the fiscal year, TVA chemical plants at Muscle Shoals, Ala., and Godwin, Tenn., produced about 160,000 tons of phosphate plant nutrients of several concentrations, and more than 154,000 tons of ammonium nitrate fertilizer for test demonstrations and to help meet fertilizer and food shortages. About 400 technical men, mainly from industry, visited the TVA plants to study and obtain information about processes and materials.

Construction went forward on Watauga and South Holston dams, the 17th and 18th to be constructed by TVA. Both were designed as earth and rock-fill structures—Watauga 320 ft. high and 900 ft. long; South Holston 290 ft. high and 1,500 ft. long. They would add about 1,287,000 ac.ft. of storage to the system.

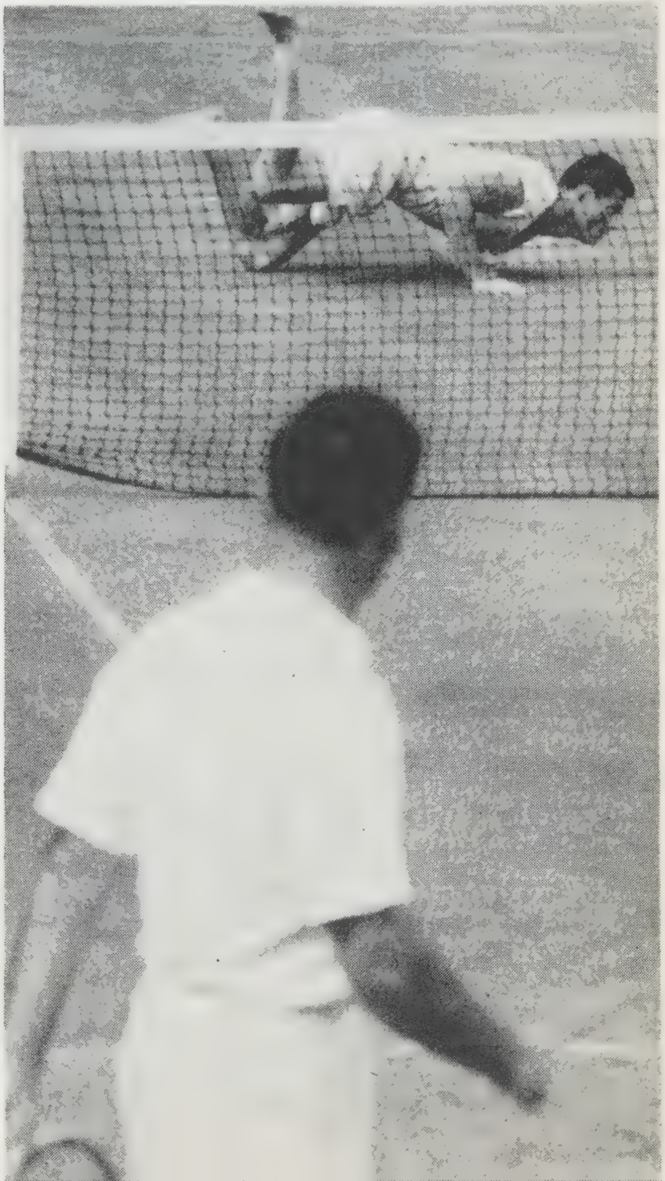
Total appropriations to June 30, 1948, were $736,223,270. In Dec. 1946 TVA paid about $10,300,000 into the general fund of the U.S. treasury making a total of about $23,000,000 so paid under section 26 of the TVA act. The Government Corporations Appropriation act, 1948, provided that TVA should repay over a period of 40 years about $348,239,000 representing U.S. treasury funds invested in the power system.

The TVA board of directors consisted of Gordon R. Clapp, chairman, Dr. Harcourt A. Morgan and James P. Pope. TVA employees numbered about 14,500. (*See* also DAMS; ELECTRICAL INDUSTRIES; PUBLIC UTILITIES.) (K. R. K.)

## Tennis.

A review of lawn tennis in 1947 could be summarized in one word—Kramer. Not since 1938, when Don Budge made the only "grand slam" of tennis by winning the four major championships (Australia, England, France and the United States) had an amateur tennis player ruled so supremely as did John Albert Kramer of Los Angeles, Calif., during 1947. In addition to winning the championships in singles and doubles of the United States (indoor and outdoor) and of England,

TED SCHROEDER, playing barefooted, is shown taking a spill during a set with Dinny Pails of Australia, in the deciding match of the Davis cup series at Forest Hills, N.Y., which brought victory to the U.S. team, Sept. 1, 1947



Kramer and his U.S. doubles partner, Frederick R. (Ted) Schroeder, Jr., successfully defended the Davis cup against the challenge of Australia.

Kramer's only serious challenger in championship play was Frank A. Parker, U.S. champion in 1944 and 1945. Twice Parker had the champion down two sets to love (in the final of the southern California championship in May and in the U.S. final at Forest Hills, L.I., N.Y., in September) but Kramer on each occasion won the next three sets. Only twice were the champion's colours lowered, both times in early-season nonchampionship best-of-three sets matches, to William F. Talbert and to Francisco "Pancho" Segura.

Twenty-two nations challenged the United States for the Davis cup. Australia qualified for the challenge round by beating Canada in the only American zone tie and then defeating Czechoslovakia, European zone winner, in the Interzone final, both ties being played at Montreal, Que. The United States defeated Australia 4–1 in the challenge round at Forest Hills stadium. Kramer and Schroeder played in both singles and doubles for the U.S. and John Bromwich, Dinny Pails and Colin Long represented Australia, which scored its lone point when Bromwich and Long defeated Kramer and Schroeder in the doubles.

Five nations, Austria, Hungary, Italy, Finland and Rumania, were readmitted as members of the International Lawn Tennis federation.

Eighteen nations were represented at Wimbledon in the English championships, and players from 16 countries competed for U.S. titles at Forest Hills and Longwood, Chestnut Hill, Mass. The championship of Australia was won by Pails. Joseph Asboth of Hungary won the French title. Other international winners were Jaroslav Drobny of Czechoslovakia, who captured the Pan-American crown, and Frank A. Parker, who won the Argentine singles and doubles (with Drobny).

U.S. women players led in their division of international competition. The women's international team match between England and the U.S. for the Wightman cup was played in the United States for the first time since before World War II. The U.S. team scored its 15th victory since the series began at Forest Hills in 1923. Three California women captured four important championships: Margaret Osborne (duPont)—English, Mrs. Patricia C. Todd—French and Argentine, and Louise Brough—United States. Mrs. Nancye Wynne Bolton won the Australian and Pan-American titles.

Margaret Osborne (duPont) and Louise Brough won their sixth consecutive U.S. doubles title. They lost their Wimbledon crowns to Doris Hart and Mrs. Todd, but beat them in the French championship.

The year saw several of the world's foremost amateur players "turn pro"—Kramer (U.S.), Segura (Ecuador), Pails (Australia), Elwood Cooke (U.S.), Mrs. Sarah Palfrey Cooke (U.S.) and Pauline Betz (U.S.). (E. S. Br.)

**Texas.** A west south central state of the United States, admitted to the union as the 28th state on Dec. 29, 1845. Soubriquet, "Lone Star State," from the single star in the flag of the Texas republic, 1836–45. Area, 263,644 sq.mi. of land and 3,695 sq.mi. of inland water. Population (1940) 6,414,824. Estimated (1947) 6,850,000. Population characteristics (1940): Urban, 2,911,389; rural, 3,503,435; white, 5,487,545; Negro, 924,391; other, 2,888; native, 6,179,296; foreign-born, 235,528. Capital, Austin with 87,930 pop. in 1940 (112,000 est. in 1947). Other principal cities: Houston, 384,514 (478,000); Dallas, 294,734 (370,000); San Antonio, 253,854 (350,000); Fort Worth, 177,662 (247,000); El Paso, 96,810 (110,000); Galveston, 60,862 (75,000); Beaumont, 59,061 (77,000); Corpus Christi, 57,301 (112,000); Waco, 55,982 (75,000).

**History.**—The 50th biennial legislature (Jan.–March, 1947) enacted laws regulating strikes under some conditions, strengthening the common school system, establishing Texas State University for Negroes at Houston, revising game conservation statutes, providing state aid for rural road improvement and amending the medical practice act. It also submitted a constitutional amendment, which was adopted by the people on Aug. 23, 1947, providing a $60,000,000 expansion program for state universities and colleges. The explosion of a nitrate-laden ship at the Texas City docks, April 16, 1947, killed 550 persons and did damage estimated at $35,000,000. The principal state officials for the biennium, Jan. 1, 1947, to Jan. 1, 1949, were: governor, Beauford H. Jester; lieutenant-governor, Allan Shivers; attorney-general, Price Daniel; comptroller of public accounts, George H. Sheppard; treasurer, Jesse James; superintendent of public instruction, L. A. Woods; and commissioner of general land office, Bascom Giles. Members of the railroad commission of Texas, which administers transportation laws and those involving oil and gas industries, were: chairman, Ernest O. Thompson; Olin Culberson and William J. Murray. There were no state elections in 1947.

**Education.**—The state's apportionment for public school support was raised from $35 per scholastic in 1945–46 to $41 in 1946–47, according to the state department of education. Action of the legislature early in 1947 assured $55 for 1947–48. The average classroom teacher's salary was raised from $1,500 in 1945–46 to $1,845 in 1946–47, and was estimated by the state department of education at $2,500 for 1947–48. The scholastic population for 1946–47, ages 6–17, was 1,498,547. Total enrolment was 1,059,623. There were 44,156 classroom teachers, of whom 30,040 were elementary school teachers. Expenditures for public schools totalled $147,000,000, of which $27,000,000 was for debt service and capital outlay. There were 4,357 common school and 983 independent school districts. However, only 2,704 common and 973 independent districts operated schools. This large number of inactive districts arose from rapid consolidation of school activities by transfer of students, in many instances without abolishment of districts. The principal state higher educational institutions were the University of Texas at Austin; the Agricultural and Mechanical college of Texas at College Station; Texas Technological college at Lubbock; Texas State College for Women at Denton. There were 31 senior colleges of which 16 were publicly supported and 15 financed from church and private funds. There were 50 state-locally supported junior colleges.

**Social Insurance and Assistance, Public Welfare and Related Programs.**—Old-age pension recipients numbered 200,941 on Jan. 1, 1948. The average payment per person during Dec. 1947 was $30.17, which was approximately the average for the year. There were 5,507 drawing pensions for the blind with payments in December averaging $33.62, also the approximate average for the year. Families with needy, dependent children numbered 16,664 (with approximately 40,000 children) with a $38.29 average payment per family in December, about $2 less than the average for 1947. Total public welfare payments for the year approximated $85,000,000. These figures from the Texas department of public welfare included both federal and state funds. Unemployment insurance payments for 1947, through November, totalled $6,700,000 as compared with $14,670,000 for the entire year 1946. Payments declined monthly during 1947 as the number employed mounted to an all-time high of 2,178,000, according to the Texas Employment commission. The state prison system consisted of a central plant at Huntsville and 11 subsidiary plants and farms located in the southeastern part of the state. Homes for delinquent minors were located at Gainesville, Gatesville and Brady. The state expenditure for correctional institutions and law enforcement by state officers approximated $2,200,000 in 1947. The number of prisoners during 1947 averaged 3,300. An extensive prison reform program was initiated late in 1947.

**Communications.**—Designated highway mileage in 1947 was 26.300, of which 22,780 were hard-surfaced. Total public road mileage, designated and rural, on Jan. 1, 1947, was 197,048. The farm-to-market construction program was expanded during 1947 as a result of legislative action. Total main-line railroad mileage was 15,591. Water-borne commerce through Texas ports (1945) amounted to 15,496,784 tons of foreign exports and 395,888 tons of foreign imports; 33,465,343 tons of coastwise outbound shipments and 4,322,911 of receipts. Petroleum and petroleum products, sulphur, forest products and agricultural products included most of the commodities of commerce. Ten national and international air lines traverse Texas. There were, in 1947, 470 airports of which 3 were class VIII, none class VII and 10 class VI, the remainder being of lower classifications. There were 6,804 civilian aircraft with CAA certificates and 20,700 licensed civilian air pilots. There were 1,041 telephone exchanges and 1,157.990 telephones in Texas Jan. 1, 1947. Of these, 247 exchanges and 928,256 telephones were in the Bell system.

**Banking and Finance.**—There were 437 national and 431 state banks as of Oct. 6, 1947, with $5,015,784,000 and $1,101,992,000 of resources, respectively; total, $6,117,776,000. Demand deposits of corporations, partnerships and individuals, $3,222,802,000 and $861,657,000 respectively; total, $4,084,459,000. There were, on Jan. 1, 1947, 86 federal savings and loan associations with $103,560,806 of assets and 51 state building and loan associations with $96,034,921 of assets. Receipts to the state government for the fiscal year ended Aug. 31, 1947, approximated $350.000,000, considerably in excess of expenditures. The state's bonded debt was only $4,100,000, entirely owned by the state's educational endowment funds. A constitutional amendment is necessary for issuance of state bonds in Texas.

**Agriculture.**—The value of all agricultural crop production, 1947, was $1,446,219,000, the highest value on record. Total harvested acreage, 28,696,000, according to the U.S. department of agriculture. Cash income from crops, $851,000,000; from livestock, $825,000,000 (estimates). Crop conditions in 1947 generally were good. Wheat production of 124,270,000 bu. broke all previous records. There was commercial production from approximately 60 crops. Data for leading crops, 1947, according to the U.S. dept. of agriculture, are shown in Table I.

Table I.—*Leading Agricultural Products of Texas, 1947*

| Crop | Acreage | Production | Value |
|---|---|---|---|
| Cotton lint (bales) | 8,273,000 | 3,360,000 | $ 514,080,000 |
| Wheat (bu.) | 7,310,000 | 124,270,000 | 279,608,000 |
| Corn (bu.) | 2,945,000 | 48,592,000 | 102,043,000 |
| Sorghum for grain (bu.) | 3,801,000 | 68,313,000 | 116,815,000 |
| Cottonseed (tons) | ... | 1,373,000 | 116,705,000 |
| Rice (bu.) | 474,000 | 23,700,000 | 67,545,000 |
| Oats (bu.) | 1,488,000 | 31,248,000 | 28,123,000 |
| Grapefruit (boxes) | ... | 24,000,000 | 14,400,000 |
| All other crops harvested | 4,405,000 | ... | 206,900,000 |
| Total | 28,696,000 | ... | $1,446,219,000 |

Table II.—*Number and Value of Livestock in Texas, Jan. 1, 1947*

| Kind | Number | Value |
|---|---|---|
| All cattle | 8,754,000 | $609,278,000 |
| Milk cows only | 1,453,000 | 136,582,000 |
| Hogs | 1,716,000 | 43,930,000 |
| Sheep | 8,523,000 | 76,514,000 |
| Goats | 3,112,000 | 16,805,000 |
| Horses | 458,000 | 22,900,000 |
| Mules | 230,000 | 16,100,000 |
| Chickens | 29,178,000 | 35,597,000 |
| Turkeys | 786,000 | 3,851,000 |
| Total | ... | $824,975,000 |

**Manufacturing.**—The estimated total value of manufactured products, 1947, was $4,800,000,000; estimated number of wage earners, 238,000; total wages paid, $345,000,000. The principal industry of the state was petroleum refining, which accounted for about 30% of the total value of products, but only about 8% of the wage earners. Other leading industries were lumbering, meat packing, cottonseed crushing, flour and grist milling, oil field machinery and supplies and publishing. The greatest industrial expansion in the state's history occurred between 1940 and 1947. Part of this was for purely military purposes, including ordnance, aeroplane construction and shipbuilding which declined after World War II. Most of the large chemical plants continued production. After a sharp slump in 1945–46, there was an upturn in industrial activity in 1947.

**Minerals.**—The total value of mineral production in 1947 was $1,744,581,000. Petroleum production of 815,000,000 bbl. contributed $1,100,000,000. Natural gas production was 2,893,553,714,000 cu.ft., valued at $410,000,000 at the wholesale consumption price, according to the Mid-Continent Oil and Gas association, Jan. 1, 1948. Table III shows the production of other leading minerals for the latest available year, as reported by the Mid-Continent Oil and Gas association for gas, and by the U.S. bureau of mines for other minerals. (S. Mc. G.)

Table III.—*Leading Mineral Products of Texas*

| Mineral | Production | Value |
|---|---|---|
| Oil, bbl. (1947) | 815,000,000 | $1,100,000,000 |
| Gas M. cu.ft. (1947) | 2,893,553,714 | 410,000,000 |
| Natural gasoline, gal. (1945) | 1,439,069,000 | 66,590,000 |
| Sulphur, long tons (1946) | 3,188,086 | 51,009,000 |
| Portland Cement, bbl. (1946) | 10,712,538 | 18,600,000 |
| Carbon black, lb. (1946) | 754,300,515 | 33,200,000 |
| Liquefied petroleum gas, gal. (1945) | 719,931,000 | 20,740,000 |
| Salt, tons (1946) | 1,098,589 | 3,356,000 |
| Sand and gravel, tons (1946) | 11,188,849 | 8,086,000 |
| Other minerals (1946) | ... | 33,000,000 |
| Total (consolidated 1947, 1946 and 1945) as estimated of production in 1947 | | $1,744,581,000 |

## Texas, University of.

A coeducational institution of higher education at Austin, Tex., with seven schools and colleges on the main campus. The 65th annual session opened Sept. 15, 1947. Emphasis was given to natural sciences, engineering, business, law, social science and graduate work in all fields in which interest was shown by veterans. The university became a member of the Oak Ridge Institute of Nuclear Studies in 1947. Creation of a school of architecture, effective in 1948, was authorized, and appointment of a director of a graduate school of library science, to be inaugurated in 1948, was made. The university's Institute of Latin American Studies enlarged its work in Mexican geography and sociology with assistance of a grant from the Carnegie corporation. The medical school is located in Galveston, Tex.; the dental school and the M. D. Anderson Hospital for Cancer Research are both in Houston, Tex.; the college of mines and metallurgy is in El Paso, Tex., and the J. W. McDonald observatory is near Fort Davis, Tex. All are branches or agencies of the University of Texas. (For statistics of endowment, enrolment, faculty, library volumes, etc., *see* UNIVERSITIES AND COLLEGES.) (T. S. P.)

## Textile Industry.

The textile industry in the United States experienced another year of record production and prosperity in 1947. Nevertheless, the industry recognized its vulnerability as durable consumer goods came on the market in 1947 in quantity for the first time since before World War II. These goods offered the beginnings of real competition to the soft consumer goods which had been in much greater relative supply during the war.

An important means of meeting this type of competition was the strengthening of the program of research during 1947. The merged organization of the Textile-Research institute, the Textile foundation and Princeton university was able to operate in its own laboratories in Princeton and to concentrate on improvement of goods for civilian use rather than on military projects.

Textile men, according to observers in the industry, were among the first to receive benefit from developments in atomic research when they adopted radioactive bars to control static electricity which interfered with the processing of the fibres. It was further noted that textile-research men were using "tagged atoms" to measure infinitesimal quantities of finish on yarns and that a whole new field of research had been opened.

Among specific developments resulting from applied research during 1947 were such concrete steps as: (1) extension of the work on nonshrinkable woollens from military channels to civilian uses; (2) development of continuous preparatory and dyeing ranges, claimed to save time and labour and obtain greater uniformity of product; (3) erection of virtually a hermetically sealed plant for full-fashioned hosiery manufacture, constructed for minimum loss of heat and for complete uniformity of temperature and humidity; and (4) increased emphasis on production of "tailor-made" fibres to meet specific demands in the use of yarns or fabrics.

The statistical effect of the latter trend was shown in the fact that the production of synthetic yarns in the U.S. passed the 1,000,000,000-lb. mark in 1947. In the years following World War I, the then-called "artificial silk" (later rayon) production had its first real impetus, but many students expected a collapse when the United States output reached the 100,000,000-lb. mark in 1928. Instead, the advance has continued unabated, until the domestic production in 1947 was ten times the 1928 figure. (D. G. Wo.)

**Great Britain.**—In 1947 European countries and Japan were once again contributing to the textile needs of the world. There was an abundance of raw materials, but a famine in finished goods. Progress was retarded by labour difficulties, inadequate fuel supplies, re-equipment and replacement of machinery, and the means of international payment. In Great Britain widespread stoppages caused by coal shortage, followed later by the dollar crisis, were the two most disturbing factors which compelled attention to the problems facing industry. Labour still remained the biggest problem in textiles. The wool industry, in general, worked with 75% of its prewar labour force, the cotton industry with 65%, and the silk and rayon, linen, jute and other sections were similarly handicapped. Expense was not spared in efforts to recruit labour, and although most mills were already air-conditioned, development took place in problems connected with dust removal, lighting, interior decoration, noise abatement, welfare and canteen facilities. Efficient training schemes and also questions of redeployment of labour to ensure maximum efficiency—together with respacing of machinery—received attention.

Machinery development progressed rapidly considering that production of new types had been adversely affected by inadequate labour and shortage of steel. Practical mill research was concerned with operative aids and mechanical handling of materials to increase production by eliminating "bottle-necks" and minimizing operative fatigue.

New features were more efficient methods and machines for the preparatory opening and cleaning in cotton, wool and flax fibre processes. Individual motor drives and variable speed drives for ring spinning frames received attention, also the various efficient high-draft systems for short-cut processing. A remarkable automatic pirn winder and a cone winder were both being built in Britain. High-speed beaming machines with large supply magazine creels found increasing favour, as did a series of new model looms with many improved features.

In the wool industry, carding was a subject of considerable research, and improved tape condensers appeared.

Staple rayon continued to make progress in every section of the textile industry. (*See* also COTTON; RAYON AND OTHER SYNTHETIC FIBRES; WOOL.) (A. DR.)

**Thailand:** *see* SIAM (THAILAND).

## Theatre.

**U.S.**—Mounting general interest in the U.S. theatre was manifested in several directions in 1947. The number of rural summer theatres, for example, reached an all-time high of 124, only 5 of which ended their seasons before schedule. Some of the others were so successful that they extended their operations two weeks beyond the customary closing time, and many of the rest also played frequently to standees and garnered profits unequalled in previous summers. The organization known as the American National Theatre and Academy, founded for the purpose of encouraging and supporting deserving theatrical enterprise, began after an uncertain start to get its plan into some order and, among other activities, helped to operate the so-called Experimental Theatre, Inc., which offered a series of performances of works by playwrights to whom the Broadway producers had turned a deaf ear. And throughout the country universities and colleges amplified their theatrical interests with the increasing presentation of new play scripts and old. Under the auspices of the National Theatre Conference, for example, a company of drama students from seven middle western schools was assembled to tour the college and community playhouses in Illinois, Indiana, Ohio, Michigan and Kentucky.

Towns like Dallas, Tex., set about collecting funds for the building of municipal theatres. Schools on a nonprofit basis for the training and development of actors were set into motion; and the Equity Library theatre assisted in the development of potential legitimate audiences. Prize contests for new playwrights tripled in number. The little Barter theatre in Virginia sent trucks of 60 players and technicians in three separate repertory groups to cover the country in plays by Shakespeare, Wilde and others. And still more significant of the rebirth of interest in the drama was the pursuit, by former stage actors engaged in motion pictures, of the so-called Actors' Lab theatre in Los Angeles, along with the institution in La Jolla, Calif., of a stock company which would permit such actors to express themselves in their former medium.

The clouded side of the professional theatre picture was the enormously increased expense of production, twice as high as 5 years before and, in all, from 4 to 5 times higher than 15 and 20 years before. Demands of the various unions—stagehands, musicians, etc., the cost of scene painting and construction, wages in the business departments, salaries of subsidiary actors, railroad transportation and other such imposed increases took on a threatening aspect which, if not in some way controlled, boded ill for the future.

Among the phenomena of the year were the Pulitzer prize committee's refusal to bestow its annual award on a play, with the implication that nothing meriting the prize had seen production; the decision of the New York Drama Critics Circle to give its accolade to Arthur Miller's inferior *All My Sons* when, in the opinion of many critics, Eugene O'Neill's *The Iceman Cometh* clearly deserved it; the end of the metropolitan run of *Life With Father* establishing an all-time record of 3,213 consecutive performances; and the continuing prosperity of the seemingly inexhaustible musical show, *Oklahoma!*

Though the public interest in the theatre continued apace and though various exhibits achieved large commercial success, the general quality of the new plays offered was far from notable. The plays that enjoyed any approach to critically reputable drama were to be counted on less than the fingers of one hand. The tendency seemed to be toward the kind of plays that promised ready money at the box-office and subsequent motion picture sales. Those which indicated that their producers had something a little loftier in mind were inconspicuous. Among them were such as Robinson Jeffers' fresh, free rendering of Euripides' *Medea,* Theodore Ward's drama dealing with the Negro in reconstruction days, *Our Lan',* and John van Druten's study of a hidebound college professor in conflict with youth, *The Druid Circle.*

There was again reliance upon revivals to fill the gap. John Gielgud exported from England an excellent reproduction of Oscar Wilde's *The Importance of Being Earnest* and followed it with a less excellent but in the main satisfactory bawdy classic of William Congreve, *Love For Love.* Donald Wolfit brought a repertoire of Shakespeare plays and Ben Jonson's *Volpone,* but missed any degree of success save in the instance of the last named. Maurice Evans, now a U.S. citizen, prospered with Bernard Shaw's *Man and Superman.* George Kelly's *Craig's Wife,* though fairly well done, had only a modest run; and the revival of Sidney Howard's and Paul de Kruif's *Yellow Jack* was an instant failure. Katharine Cornell tried her fortune with *Antony and Cleopatra,* hitherto consistently doomed to box-office failure. A duplication of *Alice In Wonderland* by the ailing American Repertory company in association with outside interests, though praised by most critics, could not make enough money to keep going; and a revival of *Rip Van Winkle,* which served Joseph Jefferson for almost half a century and which was purveyed by a young group naming itself the New York Repertory company, closed after a single week's engagement.

If the situation in respect to new plays was gloomy there was some sunshine in the case of new musicals. *Finian's Rainbow* by E. Y. Harburg, Fred Saidy and Burton Lane proved to be a delightfully witty and attractive show which scored a deserved success. *Brigadoon,* by Alan J. Lerner and Frederick Loewe, another success, was a deftly integrated sentimental song and dance festival whose plot so closely paralleled that of the old German classic, *Germelshausen,* that audiences were somewhat surprised that due acknowledgement was not made in the program. An attempt at U.S. folk opera, *Street Scene,* fashioned from the Elmer Rice play of the same name with a score by Kurt Weill, was in general a creditable effort. *The Medium,* a short dramatic opera by Gian-Carlo Menotti treating of a bogus clairvoyant, began as a failure but presently drew audiences and gained a considerable run.

DANCE ENSEMBLE from *Brigadoon,* a fantasy by Alan Jay Lerner and Frederick Loewe, which was selected in April 1947 by the New York Drama Critics Circle as the best musical comedy of the season

The disappointment of the year was the Richard Rodgers' and Oscar Hammerstein's *Allegro.* In view of its authors' previous *Oklahoma!* and *Carousel,* much was expected of it, but what it turned out to be was a pretentious and heavily oversentimentalized book dealing with a young doctor's career and set to music below Rodgers' standard.

The more conspicuous U.S. playwrights were largely *in absentia.* Eugene O'Neill decided to hold over his projected *A Moon for the Misbegotten* until a later date, and Robert Sherwood, S. N. Behrman, Maxwell Anderson, Lillian Hellman and the others preferred to remain in abeyance. The newer playwrights provided little of worth, though W. W. Haines' *Command Decision* had its effective points and contrived what was at least in part a driving melodrama about an air force general in World War II who followed until dismissal his conviction that lives must be fearlessly squandered if future lives were to be spared. The earlier noted *All My Sons,* by Arthur Miller, indicated a measure of dramaturgical competence and managed commercial success on Broadway with its story of a crooked manufacturer of aircraft parts, but in any sound appraisal did not merit the extravagant esteem shown for it in various critical quarters. Donald Ogden Stewart's *How I Wonder* was a juvenile excursion into cosmic philosophy. Tennessee Williams' *A Streetcar Named Desire,* also highly praised, defaulted in various particulars but profited from an all-around excellent production and achieved a large commercial success.

Among the year's notable acting performances were those of Judith Anderson in *Medea,* Donald Wolfit in *Volpone,* Jessica Tandy in *A Streetcar Named Desire,* and the Gielgud company in the two revivals mentioned.

The influx of Hollywood players continued. Of the many who ventured to expose their talents the only ones who presented themselves with any success were the following: June Lockhart in *For Love or Money,* Anne Jeffreys in *Street Scene,* Kim Hunter in *A Streetcar Named Desire,* Stephen Bekassy in *The Whole World Over,* Paul Kelly in *Command Decision,* Roberta Jonay in *Allegro,* and Anthony Quinn in *The Gentleman from Athens.* The others, including such film favourites as James Mason, Claire Trevor, John Loder, Philip Dorn, Helmut Dantine, and K. T. Stevens, got nowhere. (G. J. N.)

*Statistics of the Theatre in New York City, 1947 and 1946*

| | 1947 | 1946 |
|---|---|---|
| Productions | 92 | 110 |
| Musical comedies | 22 | 28 |
| Plays | 70 | 82 |
| Premières | 61 | 68 |
| Successful productions | 19 | 19 |
| Performers employed | 1,707 | 2,026 |
| Tickets sold | 8,200,000 | 8,600,000 |
| Approximate cost of production | $4,500,000 | $5,000,000 |
| Number of shows booked for other cities | 81 | 87 |

**Canada.**—After a hiatus of nine years, the Dominion Drama Festival was resumed, during the week of May 5 at London, Ontario. For the first time the festival (begun in 1933) had a Canadian adjudicator, Prof. Emrys M. Jones, head of the drama department, University of Saskatchewan.

The little theatre movement in Canada continued behind the Dominion Drama Festival. Local drama leagues or organizations controlled the 11 regional competitions. For the first time, 1947 saw each region choosing its own best play. Formerly, it was customary for the Dominion Drama Festival association to send a representative to the regional competitions to pick the entries for the finals.

At the Drama Festival, the Bessborough trophy for the best presentation was awarded to Les Compagnons, Montreal, for its production of the first and second acts of Molière's *Le Médecin Malgré Lui.* The Sir Barry Jackson trophy for best presentation of a play by a Canadian author was won by Le Caveau, Ottawa, for its production of *Maria Chapdelaine.*

The Toronto Children Players, and the Regina Children's theatre, presenting plays not only for children but also in some cases by the children themselves, had an active year. Early in 1947 Jacques Gréber, famed Parisian city planner heading the National Capital Planning commission to remodel Ottawa, announced that plans included a National theatre building. (C. Cy.)

**Great Britain.**—Continued, even increased, austerity in the material conditions of life naturally assisted those who were providing British people in 1947 with agreeable ways of escape. The large-scale musical show was more in demand than the small and realistic play with an immediate, domestic subject. Londoners flocked to enjoy the vitality, as well as the "far-awayness," of two big U.S. productions, long triumphant on Broadway, *Oklahoma!* and *Annie Get Your Gun. Finian's Rainbow,* a somewhat similar importation, was less liked, but the success of the other two intimated plainly that the U.S.A. had, in musical showmanship, a new and a winning deal. The old Ruritanian style of waltz-time romances, their Danubian settings re-equipped with English tenors, sopranos, and drolls, faded away completely before the vigorous attack of the new U.S. model.

One intimate play did, indeed, hold its own amid the favour shown to "escapist" entertainment. That was *The Linden Tree* by J. B. Priestley, a study of a professor's decline and fall in a provincial university town. What took the public sympathy was the portrait of a family group true to the English middle-class in transition; here were the young seeking their own differ-

SCENE from *All My Sons,* by Arthur Miller, a 1947 opening. It was the first choice of the New York Drama Critics Circle for the best play of the season

ent types of refuge in black markets, "Red" politics, Roman Catholicism, or the arts.

Since Sir Laurence Olivier and Sir Ralph Richardson were both engaged in the studios, the "Old Vic" had to find new stars. The choices were Alec Guinness, a master of comedy as well as of pathos, Trevor Howard and Bernard Miles. With them in *Richard II* and *The Taming of the Shrew* the "Old Vic" worthily took its place in London as well as in the Edinburgh festival which, more musical in content than dramatic, was held, in glorious weather and with great *réclame,* in August. It was expected that this attempt of the Scottish capital to become the Salzburg of Britain would be renewed.

There was no Malvern festival in 1947, but one was promised to open on the 92nd birthday of George Bernard Shaw (July 26, 1948) with new plays by Shaw and James Bridie. For Bridie 1947 was a busy year; his piece in the macabre vein, *Dr. Angelus,* had a big London success, with Alistair Sim brilliant as the murderous medico; *A Sleeping Clergyman* was revived with Robert Donat, and a third Bridie play, *John Knox,* aroused considerable controversy when produced at the Citizen's theatre, Glasgow. With Edinburgh and James Bridie thus to the fore, it was a great year for Scotland. (I. Br.)

**Theatre Library Association:** *see* Societies and Associations.

**Therapy:** *see* Chemotherapy; Medical Rehabilitation of Disabled Veterans.

**Throat:** *see* Ear, Nose and Throat, Diseases of.

**Thyroid:** *see* Endocrinology.

## Tibet.

A country of central Asia, lying north and northeast of the Himalayas, mainly a high tableland. Nominally a Chinese dependency, it is in practice independent. Area: *c.* 470,000 sq.mi. Estimates of the population vary between 2,000,000 and 3,750,000. The religion is Lamaism, a late form of Buddhism modified by animism and primitive magic, and education is in the control of the many monasteries. The ruler is the 14th dalai lama (born 1933) enthroned in 1940 as Lingerh Lamutanchu.

**History.**—In April 1947 the ex-regent Jechong was arrested by the regent of the dalai lama on the charge of plotting against the dalai lama. Jechong was blinded and subsequently died in prison. Two other leaders of the revolt were sentenced to 250 strokes and imprisonment for life; it was also ordered that they should be fettered and have their eyes put out. A revolt also broke out in a monastery near Lhasa, the monks declaring themselves for the former regent Jechong, but after a siege lasting nearly two weeks the monastery surrendered to government troops. (J. Ra.)

## Tildy, Zoltan

(1889– ), Hungarian statesman, was born in 1889 at Losoncz and educated at the Protestant college at Pápa where he graduated as Master of Divinity in 1912. He received part of his training at Belfast university and at the beginning of his career as a parson of the Reformed Evangelical (Calvinist) Church, was in contact with west European Protestant student and social movements. A military chaplain in World War I, in 1919 he became managing director of a Budapest publishing firm for Protestant religious literature and editor of the review *Magyar Föld,* an organ of the Smallholders party. In 1930 he was a founder of the Independent Smallholders party, which soon became the principal democratic-liberal opposition force against the autocratic government of General Julius Gömbös. When Tibor Eckhardt, leader of the party, left Hungary in 1941 in order to side openly with the Allied cause, Tildy was elected chairman and leader of the parliamentary group of the Independent Smallholders. Opposing pro-German tendencies, he went underground in March 1944 after the German armed forces had deposed the government of Nicholas Kállay. The elections of Nov. 4, 1945, gave an absolute majority to the Independent Smallholders and Tildy became prime minister and formed a government to succeed General Béla Miklós' provisional government. On Feb. 1, 1946, when the national assembly proclaimed the end of the monarchy, he was elected first president of the Hungarian republic. In June 1947 he denied foreign press rumours of his impending resignation and possible arrest in connection with the conspiracy of General Lajos Veress. (*See* Hungary.) (B. Me.)

**Timber:** *see* Lumber.

**Timor:** *see* Netherlands Indies; Portuguese Colonial Empire.

## Tin.

Production data from many of the major producing countries were lacking during the years of World War II. While the following compilation of the International Tin Research and Development council is more complete than anything else available after 1939, it still includes a number of gaps and estimates.

As can be seen from the data in Table I, the output of the

Table I.—*World Production of Tin, 1941–46*
(In thousands of short tons)

| | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|
| Australia | 3.9 | 3.3 | 3.0 | 2.7 | 2.5 | 2.4 |
| Belgian Congo | 15.8 | 14.1 | 18.8 | 19.2 | 17.9 | 15.8 |
| Bolivia | 47.1 | 42.9 | 46.5 | 43.5 | 47.6 | 42.4 |
| China | 9 | 4.9 | 3.6 | 3.7 | 3.9 | ? |
| Malaya | 87.5 | 18 | 30 | 9 | ? | 8.2 |
| Neth. Indies | 56 | 9 | 16 | 7 | 0.4 | 9.8 |
| Nigeria | 16.8 | 13.4 | 14.2 | 14.7 | 12.3 | 12.6 |
| Siam | 17.1 | 2.5 | 1.2 | 0.1 | 0.1 | ? |
| Others | 17.5 | 12.7 | 12.5 | 9.2 | 9 | 10 |
| Total | 270.7 | 120.8 | 145.8 | 109.1 | 94 | 90? |

Table II.—*Data of the Tin Industry in the United States, 1941–46*

(In thousands of short tons)

| | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|
| Imports, total | 189.9 | 62.4 | 41.0 | 54.8 | 47.0 | 60.1 |
| In concentrates | 32.1 | 32.4 | 27.5 | 39.8 | 37.5 | 42.7 |
| Metal | 157.8 | 30.0 | 13.5 | 14.9 | 9.5 | 17.4 |
| Smelter output | 2.1 | 18.1 | 24.1 | 34.6 | 45.3 | 48.7 |
| Secondary recovery | 42.0 | 38.0 | 37.9 | 32.6 | 39.3 | 31.0 |
| Consumption, total | 150.9 | 96.0 | 90.0 | 100.8 | 93.6 | 90.6 |
| Primary | 115.5 | 63.0 | 51.8 | 66.3 | 62.3 | 61.2 |
| Secondary | 35.4 | 32.9 | 38.2 | 34.5 | 31.3 | 29.5 |
| Stocks, total | 147.5 | 149.6 | 130.9 | 111.8 | 93.5 | 80.3 |
| In ore | 26.0 | 41.1 | 45.1 | 46.0 | 36.4 | 27.6 |
| Metal | 121.5 | 108.5 | 85.8 | 65.6 | 59.0 | 52.7 |

years 1942–46 averaged only a little more than 110,000 tons, or much less than half of the peak output of 270,000 tons in 1941. The production facilities destroyed during World War II were being replaced only slowly, but a survey estimated that production capacity could be restored to 138,000 tons in 1947, 191,500 tons in 1948 and 236,000 tons in 1949. The output reported in the first seven months of 1947 topped 75,000 tons, which would seem to make the realization of the 1947 estimate a possibility.

**United States.**—The salient features of the tin industry in the United States are summarized in Table II.

In 1947 smelter production declined to 37,287 tons, against 48,720 tons in 1946, and secondary recovery also dropped, but imports improved, both as ore and as metal. The net balance showed a drop of 14% in stocks at the end of the third quarter, after the stock figure at the end of 1946 had dropped to below the year's consumption.

Following the removal of price control, the price of tin rose from 52 cents to 70 cents, and in April 1947 to 80 cents, with agitation for another increase as the year drew to a close. (*See* also Mineral and Metal Production and Prices.)

(G. A. Ro.)

## Titanium.

Because of the development of domestic production during World War II, the United States was able during 1947 to supply about half of its consumption of titanium, but consumption had grown at such a rate that imports were still about as large as before the war when domestic output contributed only 5% of the supply. The development of the supply-consumption picture for both rutile and ilmenite is shown in the accompanying table, in short tons.

| Ilmenite | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|
| Production | 23,297 | 77,208 | 203,551 | 278,610 | 308,516 | 282,447 |
| Shipments | 21,526 | 93,397 | 211,715 | 280,791 | 308,518 | 282,708 |
| Imports | 170,689 | 10,407 | 78,093 | 108,948 | 210,066 | 242,340 |
| Supply | 192,215 | 103,804 | 289,808 | 389,739 | 518,584 | 525,048 |
| Consumption | 275,106 | 257,535 | 302,822 | 360,941 | 381,178 | 404,283 |
| Stocks | 352,060 | 172,611 | 129,824 | 167,686 | 272,598 | 381,226 |
| Rutile | | | | | | |
| Production | 3,130 | 2,648 | 3,987 | 6,922 | 7,179 | 7,453 |
| Shipments | 3,431 | 2,649 | 3,941 | 6,770 | 6,837 | 7,514 |
| Imports | 6,291 | 10,525 | 14,338 | 10,019 | 10,602 | 5,864 |
| Supply | 9,722 | 13,174 | 18,279 | 16,789 | 17,439 | 13,378 |
| Consumption | 6,361 | 10,616 | 17,634 | 14,813 | 9,791 | 7,134 |
| Stocks | 3,637 | 5,932 | 6,173 | 6,536 | 10,130 | 14,808 |

Ilmenite is used mainly in pigments, and rutile in welding rod coatings; both are used to a limited extent for alloys and carbide. Most of the imported ilmenite comes from India, and the rutile from Australia.

**Canada.**—Production of titanium ores had almost ceased, dropping from 69,437 short tons in 1943 to 14,147 tons in 1945, 1,406 tons in 1946 and 1,250 tons in 1947. (G. A. Ro.)

**Tito:** *see* Brozovich or Broz, Josip (Tito).

## Tobacco.

The U.S. crop of tobacco in 1947 was estimated at 2,167,702,000 lb., about 5% less than the record crop of 2,319,409,000 lb. in 1946. It exceeded all other yearly crops, however, and was much more than the average of 1,548,389,000 lb. for the ten-year period 1936–45. Acreage grown in 1947 was 1,875,300, compared with 1,962,200 in 1946 and an average of 1,592,000 during 1936–45. The average yield also dropped to 1,156 lb. per acre from 1,182 lb. in 1946 but exceeded the ten-year average of 971 lb. Production of flue-cured types approached a new record, but burley and dark air-cured types declined.

The Class 1 flue-cured types grown in Virginia, North and South Carolina and southward to Florida were estimated at 1,345,000,000 lb., almost equal to the high record of 1,352,000,000 lb. in 1946. The stocks of this type on July 1, 1947, were 1,287,000,000 lb., which with the new crop provided a large supply. In view of reduced exports late in 1947, this supply required a reduction in the goal for 1948 and in November the United States department of agriculture recommended that acreage of all types of tobacco be reduced about 19% from the 1947 level, 35% for fire-cured and 25% for air-cured.

The 1947 crop of Class 2 fire-cured types was 97,035,000 lb. compared with 109,355,000 lb. in 1946 and an average of 83,722,000 lb. during 1936–45. The Virginia fire-cured crop was 14% less and Tennessee 11% less than in 1946. The yield of all fire-cured types was 1,020 lb. per acre, compared with 1,157 lb. in 1946 and a ten-year average of 895 lb. Stocks were more than in each of the preceding three years and high compared to domestic consumption and exports. Much of this type is used in snuff, smoking and chewing tobacco, all of which were less than prewar levels. Reduction of exports late in the year seriously affected the markets for these tobaccos.

The burley type crop, estimated at 525,206,000 lb., was 14% less than the record of 1946, chiefly because of reduced acreage; the yield was only 3% off. Maryland's crop was only 34,360,000 lb. compared with 40,560,000 lb. grown in 1946. Kentucky, the leading state in burley production, had a crop of 357,200,000 lb. compared with 427,525,000 lb. in 1946. The carry-over of burley (nearly 1,000,000,000 lb.) combined with the 1947 crop established a new record of supply. Consumption of this type during 1946–47 was greater than in any previous year because of high cigarette consumption and large exports. The surplus of burley was accompanied by a higher support price. Since burley exports comprised only 7%–8% of the total production, the uncertainties of foreign markets had less effect than on the fire-cured types.

The average price ranged around 40 cents per pound, about the same as in 1946. The 1946 price of Maryland tobacco was 44.7 cents per pound compared with 57 cents for the small 1945 crop; in the late fall of 1947 the price was about the same as 1946.

Dark air-cured types were estimated at 42,260,000 lb. or about 6,000,000 lb. less than in 1946, but more than the average. Stocks were large and demand was 20% less than in 1946.

Cigar types of tobacco amounted to 146,850,000 lb., slightly less than was harvested in 1946. Mississippi, Georgia and Florida had larger crops, but Connecticut lost heavily at harvest time because of bad weather. Stocks carried over were lower and consumption of domestic cigars higher than in 1946. Prices were slightly lower for most of the crop, but Connecticut type of cigar binders were near the 1946 average of 72 cents per pound, compared with 58 cents in 1945 and about four times the average of 1934–38. The Louisiana perique crop increased in 1947 to 249,000 lb. compared with 150,000 lb. in 1946 and the 174,000 lb. average for 1936–45.

During the 1946–47 crop year, U.S. exports of tobacco were near the record attained in 1929, but declined sharply during the last quarter of the year. Foreign buyers, short of dollars, curtailed purchases sharply. Great Britain, largest buyer of United States tobacco, stopped buying in November and caused a near panic among United States growers. China, second largest importer in prewar years, suddenly found its dollar exchange low and reduced buying.

When the British ceased buying, the Commodity Credit corporation began support of the market at 90% of parity. A proposal for the United States to underwrite British purchases was rejected in London.

*U. S. Tobacco Production, 1947 and 1946 and 10-year Average, 1936–45*

(In thousands of pounds)

| State | 1947 | 1946 | 10-year Average | State | 1947 | 1946 | 10-year Average |
|---|---|---|---|---|---|---|---|
| North Carolina | 915,460 | 927,425 | 607,802 | Ohio | 22,210 | 21,060 | 24,934 |
| Kentucky | 416,167 | 505,885 | 337,468 | Indiana | 12,950 | 13,610 | 10,155 |
| Virginia | 161,112 | 178,821 | 115,744 | Massachusetts | 11,240 | 10,314 | 8,040 |
| South Carolina | 153,000 | 171,825 | 102,534 | Missouri | 5,040 | 7,425 | 5,746 |
| Tennessee | 146,610 | 171,705 | 107,937 | New York | 1,080 | 1,085 | 1,187 |
| Georgia | 130,132 | 110,537 | 80,436 | West Virginia | 3,625 | 3,424 | 2,624 |
| Pennsylvania | 61,100 | 59,124 | 44,826 | Minnesota | 720 | 875 | 638 |
| Maryland | 38,400 | 47,000 | 28,499 | Kansas | 285 | 345 | 288 |
| Wisconsin | 35,930 | 41,735 | 30,158 | Alabama | 340 | 288 | 300 |
| Florida | 27,036 | 22,251 | 16,780 | Louisiana | 249 | 150 | 174 |
| Connecticut | 24,516 | 24,530 | 21,488 | | | | |

World tobacco production for the year ending June 30, 1947, was estimated at 7,122,000,000 lb., compared with 6,654,000,000 lb. in 1946 and an average of 6,560,000,000 lb. during 1935–39. The large U.S. crop accounted for most of the increase. China was second with 1,363,000,000 lb., followed by India 1,050,000,000 lb., Brazil 180,000,000 lb., Turkey 215,000,000 lb. and Burma 100,000,000 lb.

With the high price of U.S. tobacco every country was striving to increase its supply to meet domestic needs, but food shortages restricted expansion of tobacco acreage.

(J. C. Ms.)

**Tobago:** *see* TRINIDAD.

**Togoland:** *see* BRITISH WEST AFRICA; FRENCH OVERSEAS TERRITORIES; TRUSTEE TERRITORIES.

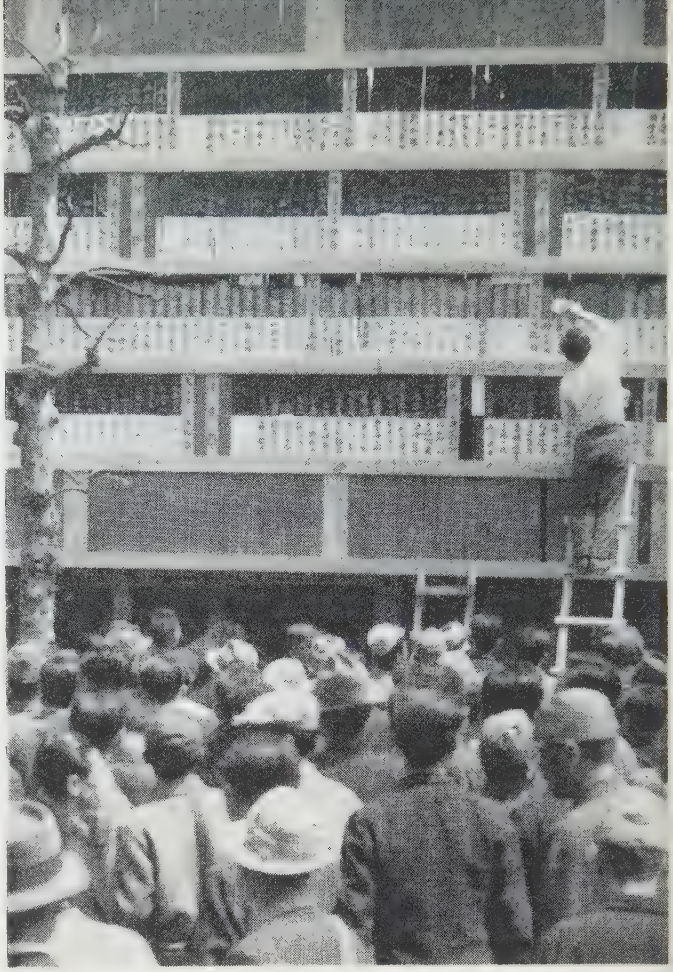
**Tokyo.** The capital and largest city of Japan; situated in a small metropolitan prefecture of the same name at the head of Tokyo bay (at 35° 45′ N., 139° 45′ E.) on the southeast coast of Honshu, largest of the Japanese islands; area, 223 sq.mi. The 1946 census recorded 3,442,000 residents, reflecting a period of repatriation of armed forces and return of refugees who had fled to less congested areas in the last months of World War II. The 1940 census had recorded a population of 6,778,804; in Nov. 1945 it had been 2,777,000.

Reconstruction to replace some 750,000 war-destroyed dwellings was reported by July 1, 1947, to have added 93,380 newly built dwellings to the 569,068 remaining after the war.

In elections during April 1947 for the Tokyo governorship, an independent backed by the conservative Liberal and Democratic parties, 57-year-old Seiichiro Yasui, defeated Socialist Daikichiro Tagawa who had moderate and left-wing support. For Tokyo's 22 ward assemblies, the Liberal party obtained a slight plurality of the total 895 posts.

More effective government control measures resulted in better supply of some foodstuffs, such as vegetables and fish, early in the summer, but heavy food imports by the occupation authorities continued to be necessary to complement short domestic production, such imports, for example, comprising 44% of the October staple food ration. While Tokyo rents were held to about 170% of the 1937 figures, price indexes for consumers' goods, staple foods and clothing continued to rise, increasing by Oct. 31 to 316%, 282% and 453% over the preceding year's figures.

In the wake of a severe typhoon on Sept. 16, heavy floods, especially of the Tone river, broke levees and inundated three of Tokyo's most crowded wards (in some places up to 15 ft.). Damage in Tokyo was estimated at $200,000,000 and there were 100,000 refugees.



JAPANESE ELECTION RETURNS being posted on the bulletin board of a newspaper office in Tokyo during the local elections of April 5, 1947

The Tokyo war crimes trials proceeded slowly throughout the year. The prosecution of the 25 leaders before the seven-nation military tribunal, which had begun eight months before, rested its case on Jan. 24 and the defense phase of the trials occupied the rest of the year in face of little public interest in Japan or abroad till Hideki Tojo, wartime premier and last but one of the defendants to present his case, took the stand on his own behalf on Dec. 26.

Diverse indications of social change included the reduction of 51 collateral members of the imperial family to commoner status; the extension of purge techniques from the political sphere to include media of public information and such organizations as labour unions; the widespread appearance, despite police measures to curtail it, of gangsterism and rowdyism on the city streets; the planned and partly completed removal of some 120 monuments and memorials of a nationalistic or militaristic nature.

(T. F. M-O.)

**Tomatoes.** The U.S. tomato crop of 1947 was smaller than the high record crop of 1946 but greater than the average. The crop for processing was only 2% less than that of 1946 and 30% more than the 1934–45 average. The crop for sale in the fresh vegetable markets was about one-sixth less than the crop of 1946 but more than the ten-year average. Acreage of tomatoes grown for juice and canning was more than double the area grown for sale on the fresh market. Tomato juice output had increased from fewer than 5,000,000 cases in 1936 to approximately 30,000,000 cases.

Tomato pulp production also increased from 3,000,000 cases to 9,500,000 cases.

The commercial crop for fresh market was estimated at 28,830,000 bu. in 1947, compared with 34,229,000 bu. in 1946 and the 10-year average of 26,099,000 bu. Acreage declined almost 50,000 ac. from 1946, but the yield was 118 bu. per acre compared with 116 bu. in 1946 and 117 bu. average. There was a decline in acreage in both early and summer crops. Prices at the same time were higher than in 1946, but a glut in the August markets caused prices to break below the level of Aug. 1946. Average price in 1947 was $3.02 per bushel, compared with $2.87 in 1946 and $1.92 average.

*U.S. Tomato Production for Fresh Market, 1947, 1946 and 10-year Average*

(In bushels)

| Crop | 1947 | 1946 | Average 1936–45 |
|---|---|---|---|
| Winter | 949,000 | 1,964,000 | 1,777,000 |
| Spring | 8,905,000 | 11,381,000 | 7,615,000 |
| Summer | 14,876,000 | 15,029,000 | 13,278,000 |
| Fall | 4,000,000 | 5,855,000 | 2,599,000 |

The tomato crop for processing was estimated at 3,327,900 tons compared with 3,380,900 tons in 1946 and 2,442,100 tons average. The acreage was smaller than in 1946 but yields were high. Prices received for the 1947 crop were slightly less than in 1946. While much of the tonnage was grown on contract at about the same prices as a year earlier, a large amount of uncontracted tonnage in the eastern states sold at lower prices. The hurricane that crossed Florida in September destroyed about 50% of the 5,000 ac. then growing. Only a part was replanted.

Stocks of canned tomato juice were about twice the average on Aug. 1, 1947, because of the increased rate of consumption. Supplies of canned tomatoes, while four times the quantity available a year earlier, were less than half the average carry-over. (*See* also VEGETABLES.) (J. C. Ms.)

**Tongan Island Protectorate:** *see* PACIFIC ISLANDS, BRITISH.
**Tongking:** *see* FRENCH OVERSEAS TERRITORIES.
**Tornadoes:** *see* DISASTERS.

## Toronto.

In 1793, in colonial days, the British governor, John Graves Simcoe, laid out the present site of Toronto as the capital of the province of Upper Canada (now Ontario) and named it York. Earlier the British settlement had succeeded a French trading post called Fort Rouillé. In 1834 it was incorporated as a city and its name changed to Toronto, the old Indian name, meaning "a place of meeting." The city grew steadily and soundly until in 1947 it covered about 35 sq.mi. and had a population of about 700,000 persons. Toronto manufactures and distributes goods in a large way, having excellent advantages in location and communications; it is also the centre of the great mining industry of Ontario. The city corporation, in addition to the usual municipal services, owns and operates through commissions the city and suburban street railway and bus system and the local hydroelectric system, with exclusive distribution of electricity for light and power. The Canadian National exhibition, inaugurated in 1878 and held annually until 1941 when its entire facilities were turned over to the armed services, resumed operations in 1947. The exhibition of 1947, lasting for two weeks, was highly successful and attracted a paid attendance of 2,360,500 persons. In 1946 the assessment of values on which the tax rate was levied was $964,830,522; the tax rate was 38.10 mills on the dollar for public school supporters, 40.85 for separate school supporters. The net debt was $56,011,706.68 of which $27,852,989.44 was revenue producing and specially rated. (G. R. G.)

## Toronto, University of.

A provincial institution in Toronto, Ontario, Canada. In addition to the more than 17,000 students enrolled in 1947, which was more than double the prewar peak, another 13,199 persons took extension courses and 8,000 registered with the Royal Conservatory of Music. The school of graduate studies began its 26th year under a revised statute designed to retain the initiative and resourcefulness of departments while developing a greater degree of unity. Of 1,100 in this school almost half had done their undergraduate work at the University of Toronto. The others were graduates of 22 institutions in Canada, 36 in the United States, 6 in the British Isles, 13 in India, 6 in China, 3 in continental Europe, 2 in South America, and 1 each in Australia, New Zealand, Mexico and Palestine. The board of governors allocated more than $100,000 for direct support of research and publication in the physical and biological sciences, the humanities and social sciences. The University of Toronto Press published 17 scholarly works including: *Democratic Government and Politics,* by J. A. Corry; *Democracy in the Dominions,* by A. Brady; *Monopolies and Patents,* by Harold G. Fox; *Godwin's Enquiry Concerning Political Justice,* in three volumes edited by F. E. L. Priestley; *The Virtues Reconciled: An Iconographical Study,* by S. C. Chew. At special convocations the degree of doctor of laws (*honoris causa*) was conferred on Lord Beaverbrook, Sir Alexander Cadogan, Dr. Harold Willis Dodds, Prof. D. A. L. Graham, Lawrence Hunt, Ray Lawson, George McCullagh, Lieut. Col. W. E. Phillips, Helen Ogden Reid, Thibaudeau Rinfret, and Mgr. Ferdinand Vandry. (For statistics of endowment, enrolment, faculty, library volumes, etc., *see* UNIVERSITIES AND COLLEGES.)

(S E. SH.)

**Torpedoes:** *see* MUNITIONS OF WAR.
**Totalitarian State:** *see* COMMUNISM; FASCISM; SPAIN; UNION OF SOVIET SOCIALIST REPUBLICS.

## Town and Regional Planning.

In 1947 many comprehensive and detailed plans were developed in those nations of the western world where peace permitted civil planning. The final report of the 18th International Conference on Housing and Town Planning, held at Hastings, Eng., in 1946, appeared in 1947. The International Housing and Town Planning association announced the next biennial conference for June 1948 in Zurich, Switz.

Plans were advanced in 1947 for the United Nations headquarters in New York, and most of the site was cleared.

In the United States, under state authorizing acts, some progress was made in realizing urban redevelopment plans, notably in Indianapolis, Ind., Providence, R.I., San Francisco, Calif., and Washington, D.C. Many planning reports were issued. Because of curtailed federal appropriations and the failure of congress to pass the Taft-Ellender-Wagner Housing bill there was little construction of public housing. The activities of the Bureau of Community Facilities in the Federal Works agency were terminated June 30, 1947, but the agency continued to maintain contact and interest in urban redevelopment programs throughout the United States. Through the Public Roads administration, it co-operated with local planning commissions in the location and design of the through federal-aid highways authorized by congress in urban areas, and through the Public Buildings administration it co-operated with local planning commissions in the location and design of federal buildings.

The ambitious Philadelphia exhibit presented graphically the comprehensive plans of the commission and was visited by many thousands of citizens of the area and by planners from all parts of the U.S.

A number of significant planning conferences were held. The American Institute of Planners met in Providence, R.I., in January and held regional conferences in Milwaukee, Cincinnati and Philadelphia. The American Planning and Civic association held its annual Citizens Planning conference in Milwaukee April 28–30, 1947. The American Society of Planning Officials met in Cincinnati May 5–7, 1947. The chamber of commerce of the United States held a Businessmen's Conference on Urban Problems in Washington, D.C., on Sept. 11–12.

An increasing number of smaller cities and towns published plans, including Ann Arbor, Mich., Dedham, Mass., Cheshire, Conn., Highland Park, Ill., La Jolla, Calif., Stockton, Calif., and Wichita, Kan.

**Canada.**—Canadian cities active in planning, included Hamilton, Montreal, St. Johns, Vancouver and Winnipeg. A National Conference on Community Planning, sponsored by the Community Planning association of Canada, was held Oct. 2–4, 1947.

**Great Britain.**—Plans were carried forward under the New Towns act passed in 1946. A number of planning books and reports were issued during 1947. Planning reports were issued for cities in Australia. In Pretoria, S. Af., a plan was published as a pilot survey to guide native towns.

**Europe.**—The Netherlands was active in planning and issued a number of reports, including one on the Replanning of Rotterdam. Germany issued a new planning bulletin from Stuttgart. (*See* also HOUSING.)

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## Track and Field Sports.

Aiming at the 1948 Olympic games with their first full charge of post World War II athletic prowess, United States athletes broke or flirted with more than a half dozen world records during 1947. As was the case the year before, the outstanding performances were offered by two Negro stars—Herbert McKenley of the University of Illinois, Urbana, and Harrison Dillard of Baldwin-Wallace, Berea, O.

McKenley shattered the world 440-yd. record in the National Collegiate Athletic association championships at Salt Lake City, Utah, lowering the mark by .2 sec. with a time of 46.2 sec. Later, in the dual meet between the Big Nine and Pacific Coast, he registered 46.3 sec. for the quarter-mile distance. Dillard negotiated the 220-yd. low hurdles in 22.3 sec. or .2 sec. under the previous mark.

Steve Seymour of Los Angeles, Calif., set a national javelin record with a toss of 248 ft. 10 in. in the National Amateur Athletic union championships at Lincoln, Neb. Miko Hietanen of Finland, the European marathon champion, set a U.S. mark of 1 hr. 21 min. 45.3 sec. for the 15-mi. run at New York city and a Swedish team set a world record of 7:29 for the 2-mi. relay, in Stockholm.

The annual Boston marathon, in its 51st running, was won by a 115-lb. Korean, Yum Bok Suh, a sophomore at Seoul university, Korea, in the record time of 2:35.39. His mark bettered the previous low for the 26-mi. 385-yd. distance by 1 min. 12 sec.

HERB McKENLEY, University of Illinois track star, shown at the Big Nine-Pacific Coast all-star meet as he set a new world record of 46.3 sec. for the 440-yd. event. The meet was held at Berkeley, Calif., on June 28, 1947

The University of Illinois highlighted the team competition by winning the National Collegiate tournament with 59⅔ points. The Illini also won the Western conference track and cross-country titles, and dominated the Penn relays. New York university won the Intercollegiate A.A.A.A. outdoor crown, while the New York Athletic club captured the National A.A.U. championship with 76¼ points to 63⅝ points for the Los Angeles Athletic club. The Big Nine easily outclassed the Pacific Coast, 94½–37½, in their annual meet.

Irving Mondschein of the New York Pioneer club won his

*Outstanding U.S. Track and Field Performances (Outdoor), 1947*

100 Yards

9.4 sec.—Patton, U.S.C.
9.5—Conwell, J.C.B.R.; Martinsen, Baylor; Fox, San Francisco State Col.; Jay, Texas A. & M.; Davis, Kempt, Tex., H.S.

220 Yards

20.4 sec.—Patton, U.S.C.
20.7—McKenley, Illinois
20.8—LaBeach, Unattached, Wisconsin
20.9—Parker, Texas; Fowler, Arkansas; G. Davis, U.S.M.A.; Peters, Indiana

440 Yards

46.2 sec.—McKenley, Illinois
47.2—Bolen, Colorado Univ.
47.5—McDonnell, Fordham; Guida, Villanova

880 Yards

1 min. 50.8 sec.—Clifford, Ohio State
1:51.5—Pearman, N.Y.U.
1:52.9—Barten, Michigan
1:53.1—Grosholtz, Haverford

One Mile

4 min. 9.2 sec.—Dodds, Boston A.A.
4:11.6—Karver, Penn State
4:12.5—Quinn, New York A.C.
4:14.6—Rehberg, Illinois

Two Mile

9 min. 11.8 sec.—Stone, Penn State
9:14.9—Sink, U.S.C.
9:22.2—Thompson, Texas
9:31.2—Quinn, New York A.C.

120-Yard High Hurdles

13.9 sec.—Dillard, Baldwin-Wallace
14—Dixon, U.C.L.A.; Porter, Northwestern
14.2—Scott, Arkansas; Connor, Bradley

220-Yard Low Hurdles

22.3 sec.—Dillard, Baldwin-Wallace
22.7—Porter, Northwestern
23—Clark, Washington Univ.; D. Frazier, U.S.C.

440-Yard Low Hurdles

53 sec.—Smith, U.S.C.
53.1—Kirk, Penn
54.5—Ault, Missouri
54.8—Ross, Elizabeth, N.J.

High Jump

6 ft. 8 in.—Vessie, Columbia
6:7⅝—Scofield, Kansas
6:7⅛—Hanger, California
6:7—Steers, Multnomah, A.C.

Broad Jump

26 ft. 8 in.—Steele, San Diego State
25:9½—Wright, Wayne
24:8¾—Lacefield, U.C.L.A.
24:7⅜—Johnson, Michigan State

Pole Vault

14 ft. 7⅜ in.—Smith, San Francisco Olympic Club
14:3—Morcom, New Hampshire State; Meadows, Los Angeles A.C.
14:2½—Bennett, Wisconsin

16-Pound Shotput

54 ft. 10⅞ in.—Fonville, Michigan
54:9⅝—Thompson, Los Angeles A.C.
54:3¼—Wasser, Illinois
54:2¼—Gordien, Minnesota

Discus Throw

177 ft. 8½ in.—Fitch, Unattached, Minn.
174:1½—Gordien, Minnesota
163:9½—Sheehan, Missouri
162:7—Kadera, Texas A. & M.

Javelin

248 ft. 10 in.—Seymour, Los Angeles A.C.
226:5⅛—Biles, San Francisco Olympic club
212:10—Held, Stanford
210:4—Grote, Nebraska

16-Pound Hammer

180 ft. 11 in.—Bennett, Brown
172:11½—Fisher, Harvard
172:5—Felton, Harvard
170:10¾—Styrna, New Hampshire State

56-Pound Weight

36 ft. 7½ in.—Budd, Shore A.C., Branch, N.J.
36:4½—Berst, New York A.C.
35:11½—Dreyer, New York A.C.
33:7½—Bennett, R.I.

One-Mile Relay

3 min. 12.8 sec.—Los Angeles A.C.
3:12—U.S.C.
3:14—Ohio State
3:14.3—U.S. Military academy

Hop, Step and Jump

46 ft. 5¼ in.—Beckus, Unattached, Los Angeles
45:5½—Ganslen, Shore A.C.
45:4—Theriot, A.A.F.
44:9—Robertson, San Antonio A.C.

third straight National A.A.U. decathlon championship with 6,715 points, just 10 points more than recorded by Lloyd T. Duff of Ohio State university, Columbus. John Voight of Baltimore, Md., 20-year-old Oklahoma A. and M. (Stillwater) freshman, captured the national pentathlon crown. He scored 2,927 points to 2,626 points for Charles Covino of the New York Athletic club.

**Indoor Track.**—Gilbert Dodds, returning to the mile and two-mile grind after a two-year layoff, completely dominated the indoor season. He won 12 straight races, including the National A.A.U. championship mile. His indoor record included 9 mile and 3 two-mile victories, and reached its peak with a 4 min. 6.8 sec. mile in the Chicago relays. Coupled with his victories in 1943 and 1944, prior to his layoff, the Boston preacher won 23 successive indoor races.

New York university won both the National A.A.U. and Intercollegiate 4-A indoor crowns, outlasting Manhattan college in each meet. The Violets won the A.A.U. title, 18½–15, over Manhattan and gained the I.C.4-A crown, 35–30.

**Women.**—Continued success of three veteran campaigners—Stella Walsh of Cleveland, Alice Coachman of Albany State college, Ga., and Nancy Cowperthwaite of the German-American A.C.—marked the women's National A.A.U. championships. Although without the aid of Miss Coachman, Tuskegee institute, Ala., easily won the team title with 106 points.

Both Miss Coachman and Dorothy Dodson of Chicago, the only triple winners of 1946, settled for two firsts and a second in 1947. Miss Walsh, on her 17th year of national competition, defended her 200-m. title. (M. P. W.)

**Trade Agreements:** *see* International Trade; Tariffs.
**Trade Commission, Federal:** *see* Federal Trade Commission.
**Trade Unions:** *see* Labour Unions.
**Traffic Accidents:** *see* Accidents.

## Trans-Jordan.

An Arab kingdom of the middle east bounded by Palestine (west), Saudi Arabia (south and southeast), Iraq (northeast), and Syria (north). Area: 34,750 sq.mi. Pop. (est. 1944) *c.* 340,000; pop. (est. 1946) 370,794. Religion: Arab Moslems (Sunnis) 300,000; Caucasian Moslems (Shi'ites) 10,000; Christians 30,000. Capital: Amman, the ancient Rabbat Ammon. Chief cities: Amman (45,000); Es-Salt (14,500); Ma'an (8,000). Ruler: King Abdullah ibn Hussein.

**History.**—During 1947 Trans-Jordan's economic development continued, and the country was unaffected by the disturbed state of Palestine. King Abdullah granted permission for the projected new pipe line from Saudi Arabia to pass through his country.

King Abdullah was not only the ruler of Trans-Jordan, but also the head of the royal Hashemite house, which ruled in Mecca until expelled by King Ibn Sa'ud and for a brief period after World War I in Damascus, whence King Feisal was ejected by the French. Hashemites now reign in Trans-Jordan and Iraq. King Abdullah's activities and pronouncements therefore bore a double significance, and exercised a wider effect on Arabian politics than the size and importance of Trans-Jordan alone would warrant. In April 1947 the prince regent of Iraq (King Abdullah's nephew) visited Amman, and an Iraqi-Trans-Jordan treaty was the outcome of the visit. (*See* Iraq.)

King Ibn Sa'ud was alarmed by what he conceived to be a Hashemite bloc aimed at himself, and protested that the treaty would interfere with free communication between his kingdom and Syria through a "corridor" which he claimed existed, though in fact the territories of Syria and Saudi Arabia were nowhere contiguous.

King Abdullah called forth further protests from Ibn Sa'ud during the summer, by his renewed advocacy of "Greater Syria"; *i.e.*, the union of Syria and Trans-Jordan under King Abdullah. King Ibn Sa'ud made the point that it was unpatriotic of King Abdullah to raise an issue which must divide Arab opinion, just when it should be united in support of the Palestine Arabs' case before the United Nations. Official Syrian reaction was, naturally enough, even more pronouncedly hostile. King Abdullah's renewal of his claim to a Syrian throne caused a worsening of Syria's relations not only with Trans-Jordan but with the Hashemites in general, and accentuated the division of Arabian political forces into two parties, the Hashemites (Trans-Jordan and Iraq) on one side, and Syria and Saudi Arabia on the other. (F. St.)

**Education.**—1944: government schools, Moslem scholars, boys 6,811, girls, 1,617, Christian scholars, boys 939, girls 240; nongovernment schools, Moslem scholars, boys 1,492, girls 268, Christian scholars, boys 2,101, girls 1,733.

**Finance, Trade and Communication.**—Revenue (1945) £P.926,204, grants in aid, £P.1,610,000; expenditure, ordinary, £P.2,731,899, extraordinary, £P.81,000. Imports (1944) £P.2,986,296; exports £P.1,792,255. (Palestine £ = British £ = 403 U.S. cents). Railways open to traffic (1945) 226 mi. All-weather roads (1944) 371 mi. Telephones (1946) 1,354; motor vehicles (1938) cars 335; buses 24; trucks 320.

**Agricultural Production.**—(1944) in short tons: wheat 121,253; barley 44,092; grapes and raisins 23,148; millet 7,165; lentils 13,228; (1943) kersennah 10,200; melons 23,000; tomatoes 16,000; beans and peas 2,400; tobacco 10.

**Transportation:** *see* Aviation, Civil; Electric Transportation; Motor Transportation; Railroads.
**Transylvania:** *see* Hungary; Rumania.

## Trap-shooting.

A record entry of 1,786 fired away at the Grand American handicap at Vandalia, O., with another newcomer to the championship circle—Hugh Crossen of Gardiner, Mont.—capturing the title. Crossen, a 41-year-old rancher, sporting goods dealer and tavern operator, won the 48th championship with 99 targets out of 100 in a brisk wind at 22 yd. It was his sixth attempt for the Roaring Grand, and netted him approximately $5,000. Fifteen shooters were tied for second with 98.

Kenton Sargent Stewart, 31-year-old Wichita, Kan., paving contractor, won the preliminary handicap with a possible 100. Cliff Doughman, 36, of Morrow, O., won the North American amateur with 249 out of 250 in a shoot-off with 10 others. The original 11 leaders were tied at 200 out of 200.

D. Lee Braun, 36, of Dallas, Tex., won the professional North American clay target championship as well as the national skeet title, and set a record of 546 out of 550 in the latter event and ran 491 in a row. The veteran Joe Hiestand of Hillsboro, O., won the champion of champions event for state titleholders. Ohio won the team title with 497 out of 500. Members of the Ohio team were: Doughman, Heistand, Ralph Smith of Dayton, Don Englebry of Vermilion and P. O. Harbage of West Jefferson.

Rudy Etchen, 24, of Dallas, Ia., topped the field in both the Grand American professional singles and doubles. He won the singles with 95 out of 100 and the doubles with a 20 out of 20 shoot-off with Braun and John Jahn of Spirit Lake, Ia., after the 3 were tied at 94 out of 100 in the regular shoot.

Other men's winners were: 16-yd. North American—Cliff Doughman, 200 out of 200; veterans—H. B. Greenamyer of Piqua, O., 99 out of 100; junior—Fred David Waldock of Sandusky, O., 100 out of 100; class AA—Earl Colson, Tacoma, Wash.; class A—Edward W. Castanedo, Shreveport, La.; class C—Allen Tomnitz, Sioux Falls, S.D.; class D—Al Nock, New Richland, Minn.; doubles—Homer Clark, Jr., Alton, Ill.

Mrs. Roy Meadows of Grimes, Ia., won the women's Grand American in a shoot-off with Mrs. Reba Peters of Springfield,

O. They were tied at 95 out of 100, after which Mrs. Meadows won the shoot-off with 48 out of 50 to 46 out of 50. Mrs. Lela Hall Frank of Sierra Madre, Calif., won her seventh women's North American title with a 25 out of 25 score in a shoot-off with Florence Mos of Wichita, Kan., and Helen O'Dell of La Grange, Calif. The trio was tied at 197 out of 200.

Mrs. George P. Faïrchild of Reading, Pa., won the women's preliminary in a shoot-off with Mrs. Clyde King, Jr., of Atlanta, Ga., and Mrs. Meadows. (M. P. W.)

**Treason:** *see* Federal Bureau of Investigation.

**Treasury, U.S. Department of:** *see* Government Departments and Bureaus.

## Trieste, The Free Territory of.

A small state at the northern end of the Adriatic sea, between Italy and Yugoslavia, demilitarized and neutral, whose integrity and independence were assured from Sept. 15, 1947, by the Security council of the United Nations. Area: 258.18 sq.mi., pop. (1947 est.): 341,000, composed of 85% Italians, 10% Yugoslavs and 5% others. Military governors under provisional regime: British-American zone (known as B.U.S.Z.): Major-General T. S. Airey (British); Yugoslav zone (known as J.A.Z.): Lieutenant-General Danilo Lekić.

**History.**—At midnight on Sept. 15–16, 1947, Trieste formally became a free territory. At the same time, the previous division of the former Italian province of Venezia Giulia by the so-called Morgan line into two zones—zone A under Anglo-American occupation and zone B occupied by the Yugoslavs—came to an end. North of Trieste troops of the Yugoslav 4th army under Lt.-General Lekić moved from the Morgan line to the new frontier, and the Italians re-entered the area Gorizia-Monfalcone, about one-twelfth of all the territory round Trieste that they had taken from Austria-Hungary after World War I and had had to evacuate in May 1945 when the area came under Anglo-American occupation.

The free territory proper, as defined by Article 21 of the peace treaty with Italy (ratified on Sept. 15), was temporarily divided into two zones: 5,000 British and 5,000 Americans under Major-General Airey held the coast from Duino to Muggia with the city of Trieste, and 5,000 Yugoslavs were in occupation of the coastline from Muggia to Cittanuova and of the countryside south of Trieste.

Annex VI of the peace treaty, containing the permanent statute of Trieste, stated that a governor of the free territory (who must not be an Italian or Yugoslav citizen) was to be appointed by the Security council of the United Nations after consultation with the Italian and Yugoslav governments at the earliest possible moment after the ratification of the peace treaty. The governor, officially described as the representative of the Security council, was to select a provisional council of government and a director of public security, who also could not be an Italian or Yugoslav citizen, to reorganize the police. The 15,000 foreign soldiers were to remain at the disposal of the governor for 90 days after he assumed office and be withdrawn in 45 days from then unless he advised otherwise. Four months after his assumption of office the governor was to organize free elections, with proportional representation, to a constituent assembly which was to adopt the constitution of the free territory by a two-thirds majority; the council of government was to be formed by, and be responsible to, the assembly.

Although several candidates had been proposed for the governorship at the council of foreign ministers in New York in the autumn of 1946, no agreement had been reached. The deadlock was not solved on Sept. 24, 1947, when the Security council of the United Nations discussed new candidatures at a secret session at Lake Success, Long Island, N.Y. At the end of December no governor of Trieste had been appointed and—according to Annex VII of the peace treaty dealing with the provisional regime—the free territory, pending the assumption of office by the governor, was still administered by the Allied military command, within their two respective zones.

The Anglo-American military command was unwilling to yield to the constant pressure exerted by the Communist-controlled Slovene-Italian antifascist union with the avowed aim of setting up in Trieste a popular front on the Yugoslav pattern, and the integration of the free territory within a federation of similar popular fronts. It was announced on Nov. 9 that the Yugoslav government had informed the Security council that it was discontented with the present administration of the Anglo-American zone of the free territory. (K. Sm.)

## Trinidad.

An island and British colony lying a few miles off the South American continent north of the Orinoco river delta. The separate island of Tobago, situated northeast of Trinidad, forms part of the colony. Area (including Tobago): 1,980 sq.mi.; pop. (1946 census): 558,413, of which a large proportion, estimated at approximately one-third, consists of East Indians. Chief towns: Port of Spain (cap., 92,782); San Fernando (28,830). The Christian churches, both Protestant and Roman Catholic, exercise great influence in the colony. Executive authority is vested in a governor appointed by the British crown and assisted by an executive council and by a legislative council containing a substantial elective element. Governor: Sir John Shaw (appointed 1946).

**History.**—Trinidad was among the colonies represented at the conference held in Jamaica in Sept. 1947 to consider the question of West Indian federation. The Trinidad delegation to the conference took a strong stand in favour of immediate federation as against the view, held in some quarters, that federation might retard the advance toward responsible government in individual colonies. On the economic side a memorandum surveying the general progress of the development program of the colony was laid before the Trinidad legislative council in Jan. 1947. Two reports of some importance from Trinidad received consideration during the year. The first, prepared by the social welfare officer, dealt with the general question of social welfare in the island. The second related to new measures for the control of leprosy. As a result of experiments in the use of sulfone drugs, there was reason to hope that a new era was beginning in the treatment of what was once regarded as an incurable disease.

**Finance and Trade.**—British currency and Trinidad government notes are legal tender. Accounts are kept in dollars ($1 = 4*s.* 2*d.* or 85 cents U.S.); the coinage in circulation is almost exclusively British silver and bronze. Revenue (1946) £8,602,000; expenditure £6,411,000. Imports £15,709; exports £12,849,000. Sugar and cocoa are the most important agricultural products; but Trinidad differs from the majority of British colonies in possessing considerable mineral, as well as agricultural, resources. The island is the largest producer of mineral oil within the British colonial empire and also contains an extensive deposit of natural asphalt known as the "Pitch Lake," situated in the ward of La Brea. The principal exports of the colony include sugar-cane products, cocoa, oil and asphalt. (J. E. Sh.)

**Tripoli:** *see* Abrasives.

**Trolley Coaches:** *see* Electric Transportation.

**Trucial Sheikhs:** *see* Arabia.

**Truck Crops:** *see* Vegetables.

**Trucks:** *see* Automobile Industry; Motor Transportation.

## Truman, Harry S.

(1884– ), 33rd president of the United States, was born on May 8 in Lamar, Mo. See *Encyclopædia Britannica* for an extended biography.

President Truman reversed his political field in a startling manner during 1947. Whereas he began the year as a middle-of-the-roader with respect to major appointments and policies, he ended it in such a way that hostile and friendly critics alike characterized him as a more earnest New Dealer than Franklin D. Roosevelt.

Late in 1946 and early in 1947, largely because of Democratic defeats in the 1946 congressional elections, he scrapped many of his predecessor's domestic policies. He lifted many irksome wartime controls from the domestic economy, defied and fought various segments of organized labour and urged a cut in government costs. Although he advocated extension of federal aid in such fields as housing, health and social security, he was not earnest or energetic enough to satisfy left-wing elements of the Democratic party. Moreover, he looked to the more conservative members of the cabinet and congress for advice.

As the year closed, however, Truman had aligned himself further "left of center" than F.D.R. ever stood. He advocated new and expensive government supports and services in almost every human field. He urged upon congress higher minimum wages, extension of social security and unemployment insurance on the basis of higher payments, a national medical program, crop insurance and continued subsidy of farm prices.

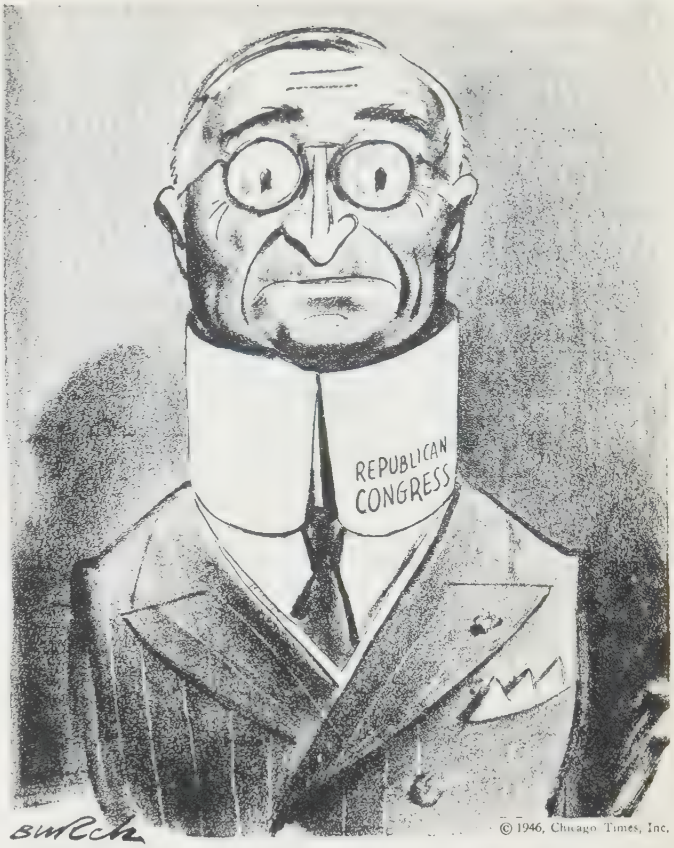
He held out the promise of federally financed homes, schools, public works and a "public power" system that envisaged a series of TVA's across the country. He urged an end to "segregation," especially in the realm of education. He asked for reimposition of selective controls on wages, prices and allocation of basic materials like steel, lumber and oil.

Abandoning his former attitude that there should be no tax reduction for fear of its inflationary effect, he proposed a "cost-of-living" deduction of $40 annually for each individual taxpayer and his dependents. Estimating that this scheme would eliminate 10,000,000 low-income taxpayers from the list at an annual cost of $3,200,000,000, he proposed that this revenue loss be made up through higher taxes on corporations.

Truman's critics declared that he had "out-Wallaced Wallace" following the former vice-president's announcement that he would run as a third-party candidate in opposition to the administration's domestic and foreign program. It was the consensus of political and editorial opinion that in order to outflank Wallace and prevent his candidacy from making certain a Republican presidential victory in 1948, the president had veered sharply to the left, definitely and deliberately.

The Truman strategy seemed to have the desired effect. Powerful labour unions once friendly to Wallace—steel, automobile, garment workers, etc.—deserted him on the theory that his entry might elect a Republican president. The Roosevelt wing, including Eleanor Roosevelt and Franklin D., Jr., declared their support of Truman, and in their writings and speeches depicted the rebellious Iowan as a politician "more to be pitied than scorned." The Democratic high command planned to brand the insurgent as a "Stalin stooge," if he carried out his plan of running as a third-party candidate.

In foreign affairs, Truman was forced by Russian hostility and recalcitrance to scrap his predecessor's friendly attitude toward Moscow. In the spring he sprang a surprise by asking congress for $400,000,000 to aid Greece and Turkey in resisting Communist attempts to bring those nations within the soviet orbit. Subsequently, he requested congressional approval of the Marshall plan, a four-year, $17,000,000,000 program to rehabilitate 16 nations of western Europe so that they would not fall under the influence of the U.S.S.R. and communism.



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"HOW DO I LOOK?" was President Truman's query in this cartoon by Burck in the *Chicago Times*, as the 80th U.S. congress convened in Jan. 1947, with a Republican majority in both houses

Moscow, naturally, set out to wreck this recovery scheme. In eastern Europe, Germany, the Balkans, the middle east and in the orient, the United States and the U.S.S.R. engaged in what became known as the "cold war." It seemed to mark the end of joint hopes and efforts for world recovery through the United Nations, the Conference of Foreign Ministers or any other agency. The sacrifices and burdens involved in the contest threatened to jeopardize the U.S. economy in the form of continued scarcities of commodities, high taxes, an inflated cost of living and general social, political and economic unrest.

Although Capitol Hill Republicans generally agreed to the need for an approximation of the Marshall plan, they disagreed over the amount involved and the details of its operation. These differences, together with disputes over Truman's expanded domestic program, brought to an abrupt end the honeymoon which had existed between the White House and congress. Another factor in breaking off friendly relations was the approach of the 1948 presidential campaign.

Truman made several moves to consolidate the western hemisphere, as if in preparation for an ideological, economic or military conflict with the U.S.S.R. He continued F.D.R.'s "good neighbour" policy. He made a state visit to Mexico City, where he was widely acclaimed, and President Miguel Alemán of Mexico repaid the compliment with a journey to Washington. Truman also attended the signing of a draft of a defense treaty for the western hemisphere at Rio de Janeiro, Brazil. It provided for the use of U.S. weapons and training methods by Latin-American armies and navies.

President Truman became chief executive and boss of the Democratic party in his own right during 1947. In his press conferences, meetings with congressional leaders and in his day-to-day relationships, he assumed a more positive, even aggressive attitude. He fixed policy, especially in the domestic field, without consulting his advisers. He got rid of many Roosevelt holdovers in high office, replacing them with men of his own choosing. He even proposed the addition of a new balcony on the rear White House portico so that he could enjoy more privacy on hot summer evenings—a suggestion which drew criticism from artistic and historical groups.

Truman placed his own man in charge of the Democratic National committee. When Robert E. Hannegan resigned, he named Senator J. Howard McGrath of Rhode Island as successor. There was some significance to this shift. Although Hannegan was a Missouri man, he was an important political figure there when Truman was only a mere beginner. Moreover, Hannegan was a Roosevelt appointee. In Senator McGrath, an old Capitol Hill crony, the president picked a man without any allegiances or obligations save to the man in the White House.

President Truman's 1947 activities convinced every observant politician, Democrats and Republicans alike, that he was an extremely active candidate to succeed himself. In their opinion, he had outlined the pattern of expected victory—a coalition of labour, leftists, racial and religious groups in the great metropolitan centres, and dyed-in-the-wool Democrats. His shift from right to left of centre during the year was interpreted as evidence of his ambition.

So, National Chairman McGrath caused some surprise when, in addressing various groups of Democrats throughout the country, he quoted President Truman as follows: "I don't care whether I am President of the United States again. If only I see the day of peace that Franklin Roosevelt fought so hard to achieve, and the brotherly love he fought to get, I'll be happy. It wouldn't make any difference who is President of the United States then!" (*See* also United States.)

(R. Tu.)

**Truman Doctrine:** *see* Greece; Turkey; United States.

## Trustee Territories.

The first session of the Trusteeship council of the United Nations opened at Lake Success, Long Island, N.Y., on March 26, 1947. Nine members attended, Australia (trustee for New Guinea), Belgium (Ruanda-Urundi), China, France (Cameroons and Togoland), Iraq, Mexico, New Zealand (Western Samoa), Great Britain (Tanganyika, Cameroons, Togoland) and the U.S.A. (Japanese mandated islands in Pacific). The U.S.S.R. was not represented at the first session, maintaining the view that the trustee agreements did not go far enough and would tend to slow down the progress of the peoples toward independence.

The agenda was concerned with rules of procedure, the details of the questionnaires on political, social and educational advancement of the inhabitants of each trusteeship territory, and the consideration of petitions already presented. A final set of rules was adopted at the 22nd meeting. A committee was chosen to examine the various drafts and formulate a model questionnaire, to be the basis of the annual reports of administering authorities. A final model was sent to these authorities, open to revision in special cases at the second session of the trusteeship council in Nov. The petitions came from Western Samoa, with a request for self-government, and from a number of German and Italian residents or former residents in Tanganyika requesting that they should be allowed to remain, or return to Tanganyika. In the latter cases the council decided that no action on their part was called for, and approved the action of the administering authority. At its 23rd meeting it decided to send a visiting mission to Western Samoa, consisting of the representatives of the U.S.A., Belgium and Iraq. In Oct. the commission reported unanimously in favour of a considerably larger measure of self-government.

The trusteeship system came up before the second U.N. general assembly, which opened in New York on Sept. 16, when South Africa's refusal to transform its mandate over South-West Africa into a trusteeship was again discussed. During 1947 a second consultation of the native population had been held, resulting in a very large majority for maintaining close relations with the Union. Faced with this situation the second general assembly firmly maintained its earlier recommendation that South Africa should, following the example of other administrators of League of Nations mandates, submit a trusteeship agreement for South-West Africa for the assembly's third session. The trusteeship committee accepted a ninth trusteeship agreement, for Nauru; administering powers being shared between Great Britain, Australia and New Zealand. (*See* also International Law; Occupied Areas, Administration of; Pacific Islands under Trusteeship.) (M. Fe.)

*Trustee and Mandated Territories, Dec. 1947*

| Territory | Area | Date of League of Nations Mandate | Date of United Nations Trusteeship | Administering Authority |
|---|---|---|---|---|
| *South-West Africa, including Caprivi Zipfel, formerly part of Bechuanaland protectorate | 317,725 sq.mi. | Dec. 17, 1920 | — | Union of South Africa |
| Togo, comprising | | | | |
| (1) Togoland; *i.e.*, western section, excluding the seaboard | 13,041 sq.mi. | July 20, 1922 | Jan. 25, 1947 | Great Britain |
| (2) Togo; *i.e.*, eastern section and seaboard | 20,463 sq.mi. | | Jan. 25, 1947 | France |
| Cameroons, comprising | | | | |
| (1) Cameroons adjoining Nigeria | 34,081 sq.mi. | July 20, 1922 | Jan. 25, 1947 | Great Britain |
| (2) Cameroons adjoining French Equatorial Africa | 169,436 sq.mi. | | Jan. 25, 1947 | France |
| Tanganyika | 362,688 sq.mi. | July 20, 1922 | Jan. 25, 1947 | Great Britain |
| Ruanda-Urundi | 20,120 sq.mi. | | Jan. 25, 1947 | Belgium |
| †Palestine | 10,159 sq.mi. | Sept. 29, 1923 | — | Great Britain |
| New Guinea, Territory of, comprising: | 93,000 sq.mi. | Dec. 17, 1920 | Jan. 25, 1947 | Commonwealth of Australia |
| (1) Northeastern New Guinea (*i.e.*, the northern section of southeast New Guinea) | | | | |
| (2) Bismarck archipelago (New Britain, New Ireland, the Admiralty Isles, etc.) | | | | |
| (3) Certain of the Solomon Islands (Bougainville, Duka, etc.) | | | | |
| Western Samoa, comprising Savaii, Spola, etc. | 1,133 sq.mi. | Dec. 17, 1920 | Jan. 25, 1947 | New Zealand |
| Nauru | 8 sq.mi. | Dec. 17, 1920 | Nov. 15, 1947 | British empire—Great Britain New Zealand and Australia (the present administrator) |
| Pacific Islands North of the Equator, comprising: | 830 sq.mi. | Dec. 17, 1920 | April 2, 1947 | U.S.A. (formerly Japanese mandates) |
| (1) Marianas or Ladrone Islands (except Guam) | | | | |
| (2) Caroline Islands, comprising the Eastern Carolines and Western Carolines, together with Yap Island and Pelew | | | | |
| (3) Marshall Islands | | | | |

*Controversial status.
†Under League of Nations mandate; see Palestine.

## Tsaldaris, Constantin

(1884– ), Greek politician, was born in Alexandria, Egypt. Graduated from the University of Athens law school, he studied law and political science at universities in France, England and Germany. He entered the government as minister in Crete (1920–22). A royalist by conviction, he was imprisoned in 1926 for plotting against the republic. Elected to the Greek parliament in 1932, he was re-elected in 1933 and 1935.

Tsaldaris fled to Egypt during the German occupation. Returning to his homeland toward the end of World War II, he became a leader of the proroyalist Populist party and formed his own government on April 18, 1946. The Tsaldaris government's suspension of civil liberties and trade union activities fanned leftist hostility, and the outbreak of civil war in the Greek border areas added to his difficulties. In early 1947, the government was reshuffled, and Demetrios Maximos became premier, although Tsaldaris was retained as vice-premier and foreign minister. But the Maximos government was unable to survive the stress and strain of civil war, and Tsaldaris formed a new government on Aug. 29. Tsaldaris' ultraconservatism resulted in his own downfall, Sept. 7, and he was replaced as premier by Themistocles Sophoulis; however, Tsaldaris again retained the key posts of vice-premier and foreign minister in the Sophoulis regime. In a statement before the U.N. general assembly (Sept. 29), he appealed to the U.N. to save Greek independence and expressed the hope that British troops would remain in Greece to protect that country against "external pressure."

**Tuberculosis.** The Committee on Tuberculosis of the American Student Health association reported in 1947 that 17.6% of more than 127,000 students in 184 U.S. colleges reacted to tuberculin. In 362 colleges (50 more than in 1946), some kind of a tuberculosis control program was in effect. These schools reported 508 cases of tuberculosis among their students.

E. R. Long pointed out that by Aug. 1, 1945, approximately 15,065,000 Selective Service registrants had been examined at local boards and induction stations. Because of tuberculosis, 129,900 were rejected as physically unfit; this was 2.7% of all persons in the IV-F class. Discharges from the army because of tuberculosis totalled approximately 15,000 men in the years 1942–45. The examinations on separation from the service revealed a large number of cases of minimal tuberculosis. New infections apparently were acquired in greater numbers overseas than at home.

**Diagnosis and Case Finding.**—M. R. Lichtenstein reported that among 11,749 cases admitted to the Municipal Tuberculosis sanatorium in Chicago from 1932 to 1946, omitting cachectic and senile patients, only 142 nonreactors were found, 138 of whom were proved to be nontuberculous. In Lancashire, Eng., F. C. S. Bradbury reported that among 74,208 persons examined many had X-ray shadows but only 239 active cases of tuberculosis were found. Following this work he advocated that mass X-ray inspection of the chest not be extended to the general population but that it be concentrated on contacts of tuberculous persons.

The division of tuberculosis control of the U.S. public health service, co-operating with medical societies, tuberculosis societies and health departments, extended its chest X-ray survey work during 1947. Photofluorograms were made of the chests of approximately 175,000 persons in Milwaukee, Wis. From May 5 to Aug. 25, the 400,000 citizens of Minneapolis, Minn., beyond the age of 15 years were offered free photofluorographic inspections of their chests. This was the largest city in the U.S. in which such a survey had ever been attempted. The total number from whom satisfactory films were obtained was 301,513. No final diagnoses were attempted from shadows; those whose X-ray films revealed abnormalities were referred to physicians or clinics of their choice, where the various necessary phases of the examination were performed to determine the cause of the disease casting the shadow. In October a similar survey was begun in St. Paul, Minn. The division of tuberculosis control of the U.S. public health service hoped that similar surveys could be conducted in every U.S. city of 100,000 or more during the coming years.

The controversy over the cause of deposition of calcium in the lungs was less intense during 1947 than in former years. It now appeared that in the eastern central part of the U.S. far more of the deposits of calcium are due to some cause other than tuberculosis, probably the fungus infection known as histoplasmosis. E. M. Medlar found at postmortem examination that many so-called scars in the apices of the lungs usually regarded as due to tuberculosis actually do not represent this disease.

H. E. Hilleboe published a *Guide for the Disposition of Persons with Abnormal Lung Findings on X-ray Films,* intended to prevent indiscriminate diagnoses of pulmonary tuberculosis on the basis of X-ray inspection alone. Extensive studies revealed that photofluorograms, 14x17 in. paper and celluloid films, are equally valuable in determining the location and extent of shadows in the lungs.

G. N. Scatchard and D. O. Duszynski made X-ray inspections of the chests of patients admitted to the Edward J. Meyer Memorial hospital in Buffalo, N.Y. Shadows of lesions previously unsuspected were found in 3.7% of the cases, and 1.8% proved to be due to tuberculosis. J. V. Sherwood reported the results of a community tuberculosis control program in Grand Rapids, Mich., where the tuberculin test, X-ray film of the reactors and complete examination of those with shadows was in progress. The mortality rate dropped from 103 in 1905 to 15.9 in 1945—the lowest rate of any city of 100,000 population or more in the U.S. In 1929, 25% of the high school students reacted to tuberculin, but in 1946, only 8%. In 1920, 105 deaths occurred outside the sanatoriums, but only 7 in 1944. The Alabama legislature enacted a statute authorizing the state health department to order tuberculosis examinations for persons between 13 and 50 years of age in any or all counties. In Buenos Aires, Argentina, an X-ray inspection of the chest of every pregnant woman, without cost to the patient, was made obligatory. The problem of tuberculosis among the aged was under consideration in many places. E. M. Medlar emphasized that in those over 50 years of age many cases of tuberculosis are overlooked clinically and, thus, insufficient precautions are taken to prevent the spread of tuberculosis.

**Treatment.**—No other treatment for tuberculosis had ever created as much interest, activity and expenditure of large sums of money over such a short period of time as did streptomycin.

**ANTI-TUBERCULOSIS** poster warning residents of Berlin to submit to examination in cases of persistent coughing or excessive fatigue, as part of a 1947 drive to combat the high rate of infection in the city

It was studied extensively by the tuberculosis control division of the U.S. public health service, the Mayo clinic and others. Tuberculous sinuses draining on the surface of the body from deeper areas of disease usually close quite promptly on streptomycin treatment. Areas of disease in the tongue, tonsils, intestines, larynx, trachea and bronchi with frank ulceration usually respond well. In generalized miliary tuberculosis some remarkable results were observed. Moreover, the lives of a sizable number of persons with tuberculous meningitis were prolonged.

As far as was known in 1947, streptomycin does not destroy tubercle bacilli in the human body but does suppress their activities. In tuberculosis of the lungs, significant improvement was not observed in chronic disease of long standing. In recently developed lesions, however, progress seemed to be retarded, but the drug alone usually was not found adequate to control the condition. Streptomycin administered before and immediately after surgery was believed to be helpful in preventing the spread of the disease. The long duration of life of tubercle bacilli in the human body and the vicissitudes of the disease made it impossible to draw more than tentative conclusions regarding the effectiveness of this antibiotic.

Some strains of tubercle bacilli are resistant to streptomycin and others may become so. Wherever a preponderance of such organisms exists or develops, streptomycin obviously is not effective. Because of certain toxic effects, great care in administration of the drug and close observation of the patient are required. A considerable percentage of patients develop vertigo and some suffer impairment of hearing. The occasional person is sensitive to streptomycin. Appearance of any toxic manifestation may require reduction in dosage or complete withdrawal of the drug. There was some evidence that smaller doses of streptomycin are as effective as the larger, and reduce the likelihood of toxic effects.

J. R. Haserick and H. E. Michelson and others reported that vitamin $D_2$ (calciferol) played an important role in controlling tuberculosis of the skin. R. Heller concluded that cases of minimal tuberculosis are less likely to relapse following treatment if collapse therapy is instituted. Large numbers of the usual collapse procedures, such as pneumothorax and extrapleural thoracoplasty, were done. R. H. Overholt and associates presented an analysis of 88 patients, of whom 55 had an entire lung and 33 had one or more lobes removed between 1934 and 1944. When the report was made, 48.1% of those with lungs removed and 42.4% of those with lobes removed were clinically well and noncontagious, while 41.2% of those with lungs removed and 18.2% with only lobes removed, were dead. The operative fatality rate for both of these operations in 1947 was approximately 5% for patients regarded as reasonable risks, but it was nearly 44% in the desperate risk group.

**Immunization.**—The Oxford, Eng., investigators of the vole bacillus vaccine concluded that a controlled experiment in tuberculosis vaccination in humans was so difficult as to be practically impossible. This belief was supported by the fact that approximately 7,000,000 humans had received BCG (Bacillus-Calmette Guérin) vaccine, and still there was no unanimity of opinion with reference to its efficaciousness. In Norway it was recommended that administration of BCG be made compulsory for all children who did not react to tuberculin at the time of leaving school. K. Birkhaug reported that in Scandinavia this substance had been given to several hundred thousand people. K. A. Jensen demonstrated that there were variations in virulence and so-called immunizing properties of BCG vaccine. This cast suspicion on the often-made statement that BCG is safe. C. Cameron and I. A. Purdie called attention to this apparent instability of BCG and suggested that if the vole tubercle bacillus met certain qualifications it would have obvious advantages over BCG. J. B. Amberson declared there was reason to hope that an immunizing agent without living organisms might be developed, and urged further research. The important question yet unanswered in 1947 was whether BCG, vole bacillus or any other preparation made from tubercle bacilli of any kind might be capable of producing dependable immunity. The division of tuberculosis control of the U.S. public health service began a study in Atlanta, Ga., applied to a limited group, carefully controlled and scientifically observed. Many years would be required, however, before fundamental facts could be established either for or against the use of BCG.

**Tuberculosis in Animals.**—At the end of the fiscal year 1947, 296,002,872 tuberculin tests had been administered to cattle in the U.S. since 1917, and 3,928,080 animals with the tuberculin reaction had been destroyed. During the fiscal year 1947, 8,312,919 cattle were tested, and only 0.2% reacted. At the points of federal inspection, only 939 carcasses were condemned as unfit for food. H. M. O'Rear presented convincing figures pertaining to the relationship between tuberculosis among cattle and people. Further progress was made in controlling tuberculosis among swine and poultry, as well as other domestic animals. Although B. Bang had devised methods of controlling tuberculosis among the cattle of Denmark in 1892, apparently this work was not continuously prosecuted, since in 1937 the disease had been stamped out in barely half the herds. A later systematic campaign, however, resulted in 95% to 100% of the dairy herds being tuberculosis-free. Apparently the control of the disease among cattle contributed largely to the marked decrease in incidence of infection among children.

K. Habel found tuberculosis a highly fatal disease in a laboratory monkey colony. However, it was readily controlled by repeated tuberculin testing with removal of the reactors. As in cattle and other animals, he demonstrated a close correlation between tuberculin reactions and autopsy evidence of tuberculosis in these animals. (*See* also PUBLIC HEALTH SERVICES; X-RAY AND RADIOLOGY.)

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## Tulane University.

Founded in New Orleans, La., in 1834 as the Medical College of Louisiana, this privately endowed, coeducational institution was renamed the Tulane University of Louisiana in 1882 in honour of Paul Tulane, New Orleans philanthropist and the university's first benefactor.

The university includes the colleges of arts and sciences, commerce and business administration, engineering, law, Newcomb college (women's division), University college (night division), school of social work, graduate school, school of medicine, division of graduate medicine, the summer session and the Middle American Research institute.

Beginning with the 1947–48 school year, six additional programs leading to a doctor of philosophy degree were added to the curriculum of the graduate school. They include English, Spanish, French, German, mathematics and history. This brought the total programs in the Ph.D. field at the university to 13.

Among other additions to the curriculum in 1947 were the establishment of the biophysics research program; combination of the departments of tropical and preventive medicine making possible a graduate degree in public health; establishment of an army reserve officers training corps, composed of transportation and air units and an affiliation between the university and Le Pétit Théâtre du Vieux Carré.

To take care of an increase in enrolment, a social studies building and a geology building were constructed and a two-story wing was added to the college of commerce. (For statistics of endowment, enrolment, faculty, library volumes, etc., *see* UNIVERSITIES AND COLLEGES.) (H. C. R.)

**Tung Oil:** *see* VEGETABLE OILS AND ANIMAL FATS.

## Tungsten.

Table I shows the output of tungsten concentrates in the major countries of the world.

Table I.—*World Production of Tungsten Concentrates, 1939–46*

(In short tons, 60% tungstic acid [$WO_3$])

| | 1939 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|---|
| U.S. . . . . . . . . | 4,287 | 6,567 | 9,333 | 11,945 | 10,283 | 5,715 | 5,534 |
| Canada . . . . . . | 4 | 35 | 269 | 681 | 236 | ... | ... |
| Mexico . . . . . . | 253 | 201 | 203 | 569 | 371 | 148 | 105 |
| Argentina. . . . . . | 1,443 | 1,896 | 2,331 | 2,635 | 2,252 | 551 | ? |
| Bolivia . . . . . . . | 3,678 | 4,798 | 6,180 | 7,608 | 8,747 | 4,245 | 2,337 |
| Brazil . . . . . . . | 8 | 39 | 10 | 1,393 | 2,448 | 2,416 | 1,789 |
| Peru . . . . . . . | 187 | 371 | 562 | 796 | 700 | 577 | 562 |
| Portugal . . . . . . | 4,245 | 6,431 | 5,754 | 8,242 | 4,506 | ... | 694 |
| Spain . . . . . . . | 406 | 457 | 1,612 | 4,301 | 2,638 | 312 | 400 |
| Sweden . . . . . . | 174 | 251 | 294 | 319 | 369 | 455 | ? |
| Burma . . . . . . . | 9,081 | ? | ? | ? | ? | ? | ? |
| China . . . . . . . | 14,188 | 14,923 | 14,288 | 10,950 | 3,860 | 3,229 | 2,966 |
| Indo-China . . . . . | 558 | 367 | 235 | 118 | 91 | 8 | ? |
| Japan . . . . . . . | 329 | 662 | 901 | 808 | 634 | 213 | 65 |
| Korea . . . . . . . | 4,375 | 5,126 | 6,682 | 7,641 | 9,262 | ? | ? |
| Belgian Congo. . . . | ... | 136 | 347 | 515 | 477 | 565 | 437 |
| So. Rhodesia . . . . | 298 | 291 | 556 | 888 | 835 | 316 | 58 |
| Australia . . . . . . | 1,134 | 1,259 | 995 | 999 | 754 | 1,265 | 1,160 |
| Total . . . . . | 46,800 | 57,300 | 56,100 | 67,200 | 54,000 | 25,400 | 21,000 |

The heavy prewar outputs of Burma and China had not been re-established by 1947, and most of those expanded to meet war demand had dropped back to below their 1939 level. World production in 1946 was less than a third of the 1943 peak and less than half of the 1939 total. Of the prewar major producers, the United States was the only one whose 1946 output was greater than in 1939.

**United States.**—Salient data of the tungsten industry in the United States are shown in Table II.

Table II.—*Data of the Tungsten Industry in the U.S.*

(In short tons of metal content)

| | 1939 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|---|
| Production . . . . . | 1,715 | 3,210 | 4,489 | 5,736 | 4,882 | 2,694 | 2,336 |
| Shipments . . . . . | 2,040 | 3,125 | 4,441 | 5,684 | 4,893 | 2,633 | 2,471 |
| Imports | | | | | | | |
| General . . . . | 1,556 | 6,576 | 7,705 | 9,339 | 9,119 | 4,320 | 3,406 |
| For Consumption . | 743 | 5,761 | 7,163 | 9,723 | 9,198 | 2,387 | 3,435 |
| For re-export . . | 295 | 14 | 3 | ... | ... | 166 | ... |
| Stocks. . . . . . . . | 1,548 | 5,393 | 6,652 | 11,988 | 14,920 | 12,473 | 1,990 |
| Producers . . . . | 142 | 132 | 178 | 229 | 218 | 279 | 143 |
| Consumers . . . . | 1,334 | 1,202 | 1,708 | 1,230 | 755 | 1,892 | 1,847 |
| Government . . . | 72 | 4,059 | 4,766 | 10,529 | 13,947 | 10,302 | ? |
| Consumption . . . . | ? | 8,350 | 8,695 | 9,657 | 9,583 | 7,073 | 3,229 |

Domestic production declined throughout 1946, but responded to an upturn in consumption in the latter part of the year, and increased somewhat in 1947. The output during the first three quarters of 1947 was 2,178 short tons of 60% concentrates, against 4,908 tons in 1946. Imports in the same period were 3,995 tons, against 6,968 tons for all of 1946. The major improvement was in consumption, totalling 6,134 tons in nine months of 1947, as compared with 6,784 tons in 12 months of 1946.

**Canada.**—Production of 288 short tons of concentrates was reported in 1947. (*See* also MINERAL AND METAL PRODUCTION AND PRICES.) (G. A. Ro.)

**Tunisia:** *see* FRENCH OVERSEAS TERRITORIES.

## Tunnels.

Tunnelling operations throughout the world advanced in 1947, but projects outside the United States were handicapped by shortages in equipment, such as drills and compressors.

Driving of the twin-tube Brooklyn-Battery vehicle tunnel extending 1.2 mi. under New York bay was plagued by labour trouble throughout the year, and work was shut down for an indefinite time early in November because of strikes. At the time of the shut-down the Governors Island ventilating shaft had been sunk to tunnel level, and shields in both Manhattan and Brooklyn headings were advancing through enlarged sections.

In Chicago, Ill., work was resumed at the south end of the Dearborn street subway tunnels, extending them to and westward into Congress street for operation of the subway system. Driving of the 23,000-ft., 12x20-ft. intercepting sewer tunnel in the stockyards area was about completed, though this project would continue into a 17,000-ft. section.

Sinking of two shafts on the 5.5-mile City tunnel for Boston's water supply was completed, and driving of the tunnel was scheduled to start shortly. Seven tunnels, from 500 ft. to 5,700 ft. long, were finished and put in service on the San Diego, Calif., aqueduct. On the Colorado-Big Thompson irrigation project in Colorado, the 13-mi. Alva B. Adams tunnel under the continental divide went into service, the Rams Horn and Prospect mountain tunnels neared completion, and the Horse Tooth Mesa reservoir tunnel was started.

Two new tunnels were started in the western United States—the single-track Aspen tunnel, 6,700 ft. long, for the Union Pacific railroad in Wyoming, and the 8.1-mile Electra hydro tunnel on the Mokelumne river in California, both scheduled to be completed in 1948. Work continued on the 23-ft. Bacon tunnel, 1.9 miles long, on the Columbia basin irrigation project in Washington. Work also progressed on a 2-mi. tunnel for the Baltimore, Md., water supply.

In the United Kingdom, several tunnels were being driven for the North-of-Scotland Hydro-Electric board for power development, including the Loch Mullardoch-Loch Benevean, Loch Benevean-Fasnakyle station, Ben Vorlich, Loch Tummel-Clunie, and Fannich tunnels. These bores ranged from 10 ft. to 23 ft. in diameter and up to 3¼ mi. long. Work was resumed in 1947 on two subaqueous projects delayed by World War II—the Dartford-Purfleet vehicle tunnel under the Thames 15 mi. below London; and the pedestrian and cycle tunnels under the Tyne (Jarrow), to be followed by a vehicle tunnel. Plans were announced for 49½ mi. of tunnels in London for suburban train service.

A big hydroelectric program on the Ashni Nadi river, Patiala, India, was approved late in 1947, to include an 8-ft. tunnel, 5½ mi. long, developing 16,000 kw. under an 860-ft. head.

In Italy, surveys revealed that out of 1,849 railroad tunnels with total length of 566 mi., 346, totalling 117 mi. in length, were destroyed during World War II. Most of these were restored in 1946 and 1947. The new double-track Granaralo tunnel, 9,842.4 ft. long, was nearing completion near Genoa on the Genoa-Turin line. Two long sections of tunnels on the Peschiera Hydro project were also about complete. One section, 16.16 mi. long, 7.87 ft. diameter, led to Solisana power station. The other, 35.42 mi. long, from 8.2 ft. to 10.33 ft. diameter, led to Monte Mario in Rome.

Considerable reconstruction of war-damaged railroad tunnels was under way in Greece as part of the United States rehabilitation aid program.

The largest tunnel under construction in the world during 1947 was the 50-ft. semicircular vehicle tunnel through Croix-Rousse hill in Lyon, France, to be more than a mile long.

In Mexico work on two long tunnels, the 10-mi. Lerma aqueduct for Mexico City and the 7-mi. Lerma sewer tunnel neared completion, with 12-ft. and 9-ft. bores, respectively. The 7-mi.

El Nuiado irrigation tunnel near Pueblo went into service in 1947.

The Rio de Janeiro Tramway, Light & Power company hydro project, west of the city, got under way in 1947. Included were two tunnels, the 30x25-ft. Santa Cecilia tunnel, 3 mi. long, and the 1-mi. twin-bore Vigario tunnel.

Work continued on the 5½-mi. tunnel for the Canon del Pato hydro project on Rio Santa in Peru, where five 6-ft. drop shafts were being sunk 1,435 ft. through solid rock.

In the U.S.S.R., the 12.5-mi. Moscow Loop subway was still under construction at the end of 1947. It was expected that the first section would be opened late in 1948, but that the entire route, known as Subway no. 4, would not be completed until 1952. (H. W. Rn.)

**Turbojets:** *see* Jet Propulsion.
**Turkestan, Chinese:** *see* Sinkiang.

**Turkey.** A republic in the southeastern Balkans and Asia Minor, bounded on the west by the Aegean sea, on the northwest by Greece and Bulgaria, on the north by the Black sea, on the northeast by the U.S.S.R., on the east by Iran and on the south by Iraq, Syria and the Mediterranean. Area: 296,185 sq.mi.; pop. (census 1945) 18,861,609. Chief towns (pop. census 1945): Ankara (cap., 226,712); Istanbul (845,316); Izmir (Smyrna; 200,088); Seyhan (Adana; 100,367). Religion: predominantly Moslem (97.9% in 1935). President: General Ismet Inönü; prime minister (appointed Sept. 9, 1947): Hasan Saka.

**History.**—At the beginning of 1947, Recep Peker's government was in the saddle, four months after the publication of the "decisions of Sept. 7," by which the *lira* or Turkish pound was devaluated by 40% and many wartime regulations were lifted. The commercial world was watching with keen interest the development of events, the general public impatiently waiting for the promised reduction in the cost of living.

The novel influence of party government was being felt; the young Democratic party, led by Celal Bayar, a former prime minister, had been in existence as an organized opposition only six months, but was becoming more and more vocal. In 1945 President Inönü had made it clear that, after 22 years of single-party government, the time had come to introduce plural parties, but political inertia and tradition continued to support the Republican People's party, with its elaborate ramifications and highly organized discipline. The task in front of the Democratic party was, therefore, no easy one, and consisted largely in educating the masses politically. It accused the government of fascist methods and of making use of government organs for political purposes. The controversy ranged over finance, commerce, press, electoral laws and administration with increasing acerbity. There was unity, however, on questions of foreign policy.

In his speech of June 12 President Inönü pointed out that there should be absolute equality of treatment of the two parties. This was interpreted as a reproof to the Peker administration, but the president was criticized because he was himself permanent president of the Republican People's party; shortly afterward he divested himself of this chairmanship, which was taken over by Shükrü Saracoglu, a former prime minister (1942–46). Thus the president became supreme arbiter between the two parties in his position as head of the state. In a tour in the eastern provinces in the late summer he paid marked attention to the local Democratic organizations.

On Sept. 6 Peker dismissed six of his ministers without explanation. This action was loudly criticized by the Democrats, who called upon him to resign, pointing out that in a true democracy the dismissal of nearly half the cabinet was tantamount to a resignation of the whole. Four days after nominating his new ministers, Peker abruptly resigned, again without explanation. It was generally believed that the government felt the weight of the president's snub and of the increasing Democratic opposition and popularity.

A new government was formed on Sept. 11 by Hasan Saka, who had been foreign minister during World War II. It did not enjoy a popular press and seemed to be generally regarded as a stopgap. The prime minister was looked upon rather as a safe than as an adventurous politician, but on a vote of confidence he secured 362 votes against 49.

Early in October two secret sessions were held of the parliamentary group of the Republican People's party, in which proceedings were apparently stormy: the news leaked out that 35

TURKISH STUDENTS at work in 1947 on a drainage ditch for their school near Erzurum. The school was part of a national program for training instructors qualified to teach formal and practical subjects to youth and adults in rural areas

members had voted in opposition. A sensation was caused by the publication in the opposition press of an alleged political plot by extremist members of the party, the object of which was to by-pass the president and vest all power in Peker. It seemed clear that the People's party was again divided into a right and a left wing, as it had been in 1945, when the left wing seceded and formed the Democratic party.

The policy of the Democratic party was summed up by Bayar as the substantial reduction of state trading and industry with the encouragement of private enterprise and the abolition of the surviving antidemocratic laws, in particular the electoral and press laws.

In foreign affairs Turkey did not deviate from the policy already long laid down of maintaining friendly relations with all foreign powers, especially with the western democracies, and at the same time of defending its territory at any cost against the slightest infringement of its sovereignty.

The war of nerves unleashed by Moscow immediately after World War II made no impression upon the Turks. Their firm attitude to Russian demands for control of the Straits and resistance to any claims for territorial readjustment was as unshaken in 1947 as in previous years. In October the soviet government protested against Turkey's admitting refugees of Turkish race and Moslem faith but foreign political status. The Turks replied that they had not taken any initiative in the matter, but were acting at the request of the International Organization of Refugees attached to the United Nations, a request parallel with that addressed to other countries: the protest, therefore, should have been addressed to the United Nations. On May 28 the government voted an extension for another six months of the state of martial law, in force after 1940, in the areas of the Dardanelles, Istanbul and Turkish Thrace. On May 5 it was announced that a permanent delegation to the United Nations would be established under the leadership of Selim Sarper, the ambassador to Italy. A treaty of friendship with Trans-Jordan was concluded in January.

The U.S. grant to Turkey of $100,000,000 under the Truman doctrine for military aid and essential rehabilitation projects, announced in March, was met with satisfaction and relief throughout the country. A U.S. mission headed by Major-General Lunsford Oliver arrived in Ankara on May 23 to supervise the carrying out of the grant. Economic aid from Britain came to an end in March. Turkey also participated in the European Economic conference held in Paris in July for discussions on the proposed U.S. aid to Europe. (Ma. B.)

**Education.**—On July 2, the government sanctioned the opening of schools for instruction in the Islamic faith. Primary schools (1946) 14,981; scholars 1,357,200; secondary schools (1944) 325, scholars 104,225; universities (Istanbul and Ankara) and colleges (1944) 26. Expenditure on education in 1947 £T100,716,321.

**Trade and Communication.**—Foreign trade: imports (1946) £T224,400,000; exports (1946) £T432,000,000. Communications: roads *c.* 103,600 mi.; railways (1945) 4,462 mi.; (1945–46) passenger mi. 1,331,760,000; short ton mi. 1,446,035,000; radio receiving sets (1947) 195,221.

**Finance.**—Revenue (est. 1947) £T1,109,000,000; expenditure (est. 1947) £T1,133,000,000; notes in circulation (June 1947) £T929,000,000; gold reserve (July 1947) U.S. $185,000,000; commercial bank deposits (May 1947) £T703,000,000. Currency: the *lira* or Turkish pound (£T). Rate of exchange (May 1947) £T=35.34 U.S. cents.

**Agricultural and Mineral Production.**—(1946), in short tons: coal 4,218,000; lignite 491,900; copper, 11,100; cement 358,300; cotton yarn 29,500; wool yarn 7,140; wheat 4,055,000; barley (1945) 1,029,500; oats (1945) 282,000; maize (1945) 324,800.

**Turkeys:** *see* POULTRY.

**TVA:** *see* TENNESSEE VALLEY AUTHORITY.

**Twentieth Century Fund:** *see* SOCIETIES AND ASSOCIATIONS.

**Uganda:** *see* BRITISH EAST AFRICA.

**Ulcer:** *see* ALIMENTARY SYSTEM, DISORDERS OF.

**Unemployment:** *see* EMPLOYMENT.

**Unemployment Insurance:** *see* SOCIAL SECURITY; VETERANS' ADMINISTRATION.

**Unemployment Relief:** *see* RELIEF.

**U.N.E.S.C.O. (United Nations Educational, Scientific and Cultural Organization):** *see* UNITED NATIONS (U.N.).

**Unfederated Malay States:** *see* MALAYAN UNION AND SINGAPORE.

**Union of South Africa:** *see* SOUTH AFRICA, THE UNION OF.

## Union of Soviet Socialist Republics.

The former Russian empire, an Eurasian state covering the whole of eastern Europe and northern Asia and much of central Asia, is a federation of soviet socialist republics. Area (Sept. 17, 1939): 8,173,557 sq.mi., pop. (Jan. 17, 1939, census): 170,467,186. The union then consisted of 11 republics of which the Russian Soviet Federated Socialist Republic was by far the largest (78% of the whole territory and 64% of the population). Of the remaining 36% of the population, almost one-half lived in the Ukrainian Soviet Socialist Republic (2% of the territory) and the other half in the nine other republics of the union. The Soviet Union is inhabited by almost 100 different nationalities speaking different languages. In Jan. 1939 Great Russians constituted 58.4% of the population, Ukrainians 16.6% and Byelorussians 3.1%. None of the other nationalities, all of them non-Slav and most of them non-Europeans, reached 3% of the total. In 1939 the U.S.S.R. consisted of the following republics: Russian S.F.S.R. (cap. Moscow; area 6,372,860 sq.mi.; pop. 109,278,614); Ukrainian S.S.R. (Kiev; 171,777 sq.mi.; pop. 30,960,221); Byelorussian S.S.R. (Minsk; 49,022 sq.mi.; pop. 5,567,976); Azerbaijan S.S.R. (Baku; 33,196 sq.mi.; pop. 3,209,727); Georgian S.S.R. (Tiflis or Tbilisi; 27,020 sq.mi.; pop. 3,542,289); Armenian S.S.R. (Erivan; 11,580 sq.mi.; pop. 1,281,599); Turkmen S.S.R. (Ashkhabad; 171,384 sq. mi.; pop. 1,253,985); Uzbek S.S.R. (Tashkent; 145,908 sq.mi.; pop. 6,282,446); Tadzhik S.S.R. (Stalinabad; 55,584 sq.mi.; pop. 1,485,091); Kazakh S.S.R. (Alma-Ata; 1,059,184 sq.mi.; pop. 6,145,937), Kirghiz S.S.R. (Frunze; 76,042 sq.mi.; pop. 1,459,301).

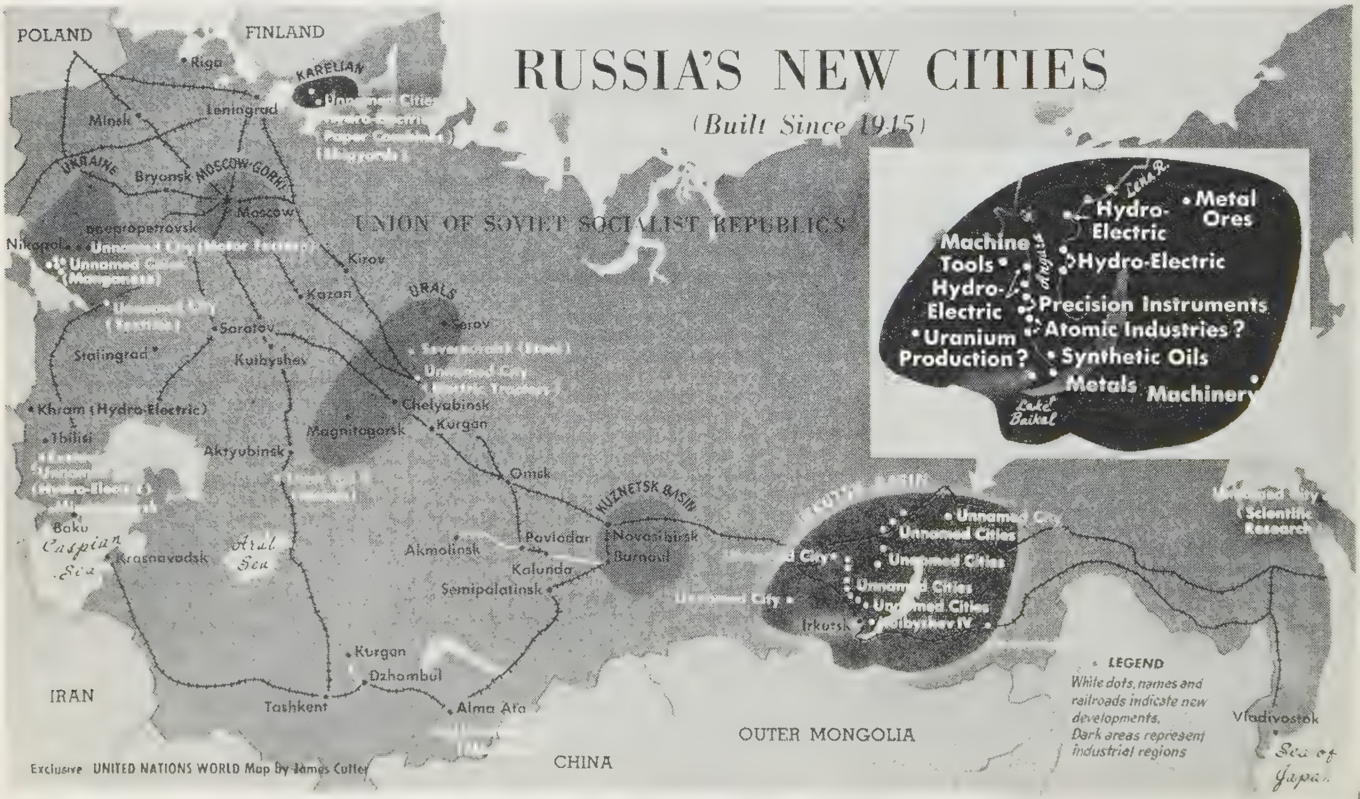
In the years between 1939 and 1945 the U.S.S.R. expanded its territory considerably. It annexed in Europe the three Baltic republics of Estonia (cap. Tallinn; 18,371 sq.mi.; pop. 1,222,000), Latvia (Riga; 25,016 sq.mi.; pop. 1,995,000) and Lithuania (Vilnius or Wilno; 22,959 sq.mi. [including Vilnius, but excluding Memel]; pop. 2,879,000), and acquired from Finland 16,173 sq.mi. with a pop. of *c.* 500,000, from Poland 66,788 sq.mi. (excluding 3,219 sq.mi. of the Vilnius area) with a pop. of *c.* 10,279,000, from Rumania 19,300 sq.mi. (Bessarabia and northern Bukovina) with a pop. of *c.* 3,500,000, from Czechoslovakia 12,617 sq.mi. (sub-Carpathian Ruthenia) with a pop. of 725,400 and the northeastern part of East Prussia from Germany (*c.* 7,000 sq.mi. with a pop. of *c.* 1,000,000). From Japan the U.S.S.R. acquired Karafuto (southern Sakhalin), an area of 13,935 sq.mi. with a pop. (1935 census) of 331,943, and the Chishima or Kurile Islands (3,994 sq.mi.). In addition the formerly "independent" republic of Tannu Tuva in Outer Mongolia (64,000 sq.mi.) was annexed to the union. As the result of this territorial expansion the U.S.S.R. formed after World War II a federation of 16 republics. The five new ones were: the Karelo-Finnish S.S.R. consisting of the territory ceded by Finland and of the former autonomous soviet Karelia; the Moldavian S.S.R. consisting of most of Rumanian Bessarabia and the former autonomous soviet Moldavia; and the three Baltic states transformed into soviet republics. Total *de facto* area (1947): 8,443,710 sq.mi., total pop. (1945 est.) 192,900,000. Chief towns (1939 census): Moscow (cap., 4,137,018); Leningrad (3,191,304); Kiev (846,293); Kharkov (833,432); Baku (809,347); Gorki, formerly Nizhni Novgorod (644,116); Odessa (604,223); Tashkent (585,005); Tbilisi (519,175);

Rostov-on-Don (510,253); Dnepropetrovsk (500,662). Chairman of the presidium of the supreme soviet of the U.S.S.R. (president of the union): Nikolai M. Shvernik; chairman of the council of ministers: Marshal Joseph V. Stalin. (X.)

**History.**—The year 1947 was characterized in the U.S.S.R. by a notable change-over from extraterritorial expansion to the securing and consolidation of political gains and the rehabilitation of domestic economy. Soviet statesmen turned their eyes toward their own country and away from the west, using every means at their command to compel not only the soviet people, but also the neighbouring states within the soviet sphere of influence to follow their example. All the energies of those responsible for directing and carrying out state policy were concentrated on one clearly definable end: establishment of the absolute autarchy, political, economic, cultural and moral, of the U.S.S.R. and the binding of the smaller states of eastern Europe more closely to this system. Such a purpose would certainly involve an indefinite number of subsidiary activities, the chief of which in this case was the sustained attempt to embarrass and divide those countries of the west which were regarded as hostile to the main purpose.

This policy clarified slowly and came into being by instalments. Until the failure of the Moscow conference of foreign ministers in April 1947 its drift was clear only to the closest students of the U.S.S.R.; but during the late spring and early summer the new line could be traced through almost every soviet utterance and action. Thus, when in June the U.S. state department invited the U.S.S.R. to share in any plan which Europe could devise for its own salvation with assistance from the U.S., the question immediately arose whether the soviet government would abandon a policy which was clearly incompatible with whole-hearted economic collaboration with western Europe and the U.S., or whether it would be forced to burn its boats and confirm unambiguously its hostile detachment from the aspirations of the west. When in July Vyacheslav M. Molotov with his entire delegation suddenly left Paris, his return to Moscow was nothing less than a formal retreat from the west, while the foundation in October of the Communist Information bureau, or Cominform, with its headquarters in Belgrade, was the declaration of an exclusive alliance of eastern Europe, with strong but uncertain outposts in Italy and France, against the British empire and the U.S.

All this took place against a background of hard times. The soviet economy, in the process of laborious restoration after the disasters of war, had suffered a calamitous setback in the late summer of 1946 as a result of one of the worst droughts in Russian history. Vast areas of crops in White Russia, the Ukraine and the black earth provinces as far as the middle Volga were lost. This natural disaster was complicated by further agrarian troubles, particularly the partial breakdown of the collective system during the war; the recalcitrant behaviour of the peasants in large areas of the Ukraine; and the failure of the industries concerned to achieve the very moderate target for agricultural machinery and road transport during the first year of the plan. Throughout the earlier part of the year the press devoted the greater part of its front-page space to interminable exhortations to the peasants and the publishing of a monotonous stream of pledges to "the Great Stalin" from every collective in the country. Meanwhile, rationing was severe and prices in the "commercial" shops astronomical. In the afflicted areas, although wide-scale famine was avoided, many died of hunger, most were weak with undernourishment, and the state of affairs was reflected in the falling off of industrial production during the first quarter of the year. The spring sowings were gravely hampered by the shortage of machinery and horses. It was no uncommon sight to see gangs of women turning the soil with spades for lack of the simplest plow. As a result of unremitting effort and with the help of favourable weather, the 1947 harvest was a good one. Nearly every region exceeded its target, not only for production, but also for grain deliveries to the state, although, as always, delivery lagged behind production and was effected only under harsh and ruthless pressure. In October, nevertheless, it was officially announced that the 1946 harvest had been exceeded by 58%, although no aggregate figures were


RUSSIA'S NEW CITIES

(*Built Since 1945*)

Exclusive UNITED NATIONS WORLD Map by James Cutter

RUSSIANS queued up for potatoes at an outdoor market in Stalingrad during April 1947. Potatoes were being sold at the soviet equivalent of $1.20 per pound in U.S. currency

published. The success of the harvest was reflected, long before the deliveries were completed, by a sharp fall in the price of essential food in the "commercial shops," in some cases by as much as 70% in a fortnight.

The peasant, nevertheless, was given no rest. During the course of the year two decrees were published directed at increasing the efficiency of the collectives. In June a new inspectorate of harvest yields was created, headed by B. V. Savelev, with 450 deputy inspectors stationed throughout the U.S.S.R. This inspectorate was an offshoot of the state planning commission, and its chief functions were to ensure the delivery of harvested crops to the state, to carry out all means of raising the yield per acre, and to recommend special rewards for particularly efficient collectives and individuals. This last function went hand in hand with a departure from the old system of payment by "work days" and a venture into a new piece-work system conditioned by quality of work. Until then responsibility for overseeing the grain deliveries had been vested in the machine tractor stations, but a clause in the decree setting up the state inspectorate indicated that the officials at these centres were becoming absorbed into the life of their local communities and thus too sympathetic to local interests; it emphasized that one of the main duties of the inspectorate was to shield the grain deliveries "from the influence of parochial tendencies running counter to the interests of the state." The second development was the abolition by decree in July of the *Gosstrakhfond,* or state insurance fund, which had been set up originally to enable collectives to buy first-grade seed. *Gosstrakhfond,* the decree stated, "has in fact become a fund for doling out loans for the support of idle administrations." Over and above these sharp measures designed to put the screw on the peasants, agriculture in the larger sphere was shaken up by a ministerial reorganization in Feb. 1947, when the ministries of industrial crops and of the livestock industry were absorbed into the old ministry of agriculture under its existing chief, Ivan Benediktov. Nikolai Skvortsov, formerly minister of industrial crops, became chief of an entirely new ministry of state farms. The main purpose of this reorganization seems to have been to concentrate the collective farms (*kolkhozy*) in every branch of agriculture under one minister (doubtless as part of the drive for purifying the collectives), and to put all the state farms (*sovkhozy*) under another minister, instead of leaving them under the control of a variety of ministries utilizing their products, such as the ministry of food. In 1938 the collectives accounted for more than 60% of all agricultural produce and the state farms, of which there were 4,000, with an average extent of 7,000 ac., for only 10%, mainly pedigree livestock, while personal holdings accounted for the remainder.

It seemed probable that beneath the new dispensation the state farm system, which involved treating the peasants as employees of the state, was to be expanded as a result of serious trouble in certain districts with the collective system. It was probable, furthermore, that a development of the state farm system was called for by the tremendous program for the extension of agriculture in new areas of the U.S.S.R., notably east of the Urals. The size of this program was best indicated by comparing the production targets for the Ukraine, the ancient granary of Russia, with those of the R.S.F.S.R. (Russian Soviet Federated Socialist Republic), which includes much of Siberia, under the new plan. The 1950 target for grain in the R.S.F.S.R. was 88,440,000 short tons, or two-thirds of the total planned output for the U.S.S.R., while the 1950 target for the Ukraine, which had hitherto provided almost precisely two-thirds of the total output, was only 29,700,000 short tons.

This development of Asiatic Russia was not confined to agriculture. The Ukraine, until 1941, was not only the granary of the U.S.S.R.; it was also the leading centre of heavy industry. But by 1950 the R.S.F.S.R. was scheduled to overtake the

Ukrainian production of pig iron, increasing its 1940 figure by 66% to 10,450,000 short tons, while the Ukraine production during the same period was to improve on its 1940 figure by only 5%, to 10,670,000 short tons.

Nothing at all was known about the rate of development of arsenals in the east, nor of the development of atomic energy. Molotov in his speech on Nov. 6, 1947, observed that the atom bomb had been no secret for a long time past, a remark which was taken by most western commentators at less than its face value; but it was known that the U.S.S.R. was devoting itself unsparingly to the problem of atomic energy, including, presumably, its lethal properties. The state had at its disposal a leading nuclear physicist in Professor Peter Kapitza, and was able to benefit to an unknown extent from the experience of German physicists and engineers. Lavrenti P. Beria, former head of the security police and one of the ablest organizers and most powerful men in the U.S.S.R., was reputed to be in charge of the atomic project.

Industry generally in 1947 did well. In 1946, the first year of the new plan, the industrial program as a whole was fulfilled up to only 96%. But on Nov. 6 Molotov was able to announce that during the first nine months of 1947 the second year's target had been overfulfilled by 10%. This was all the more remarkable in view of the poor performance of many industries during the first quarter of the year. It meant that the industrial targets of the first two years of the plan, taken together, were successfully attained. The most serious failure during 1946 was in the road transport and agricultural machinery industries. In a country which had been left by the Germans with scarcely a plow or a tractor in the whole of its western provinces, this failure was critical. In 1947 it was successfully made up. Molotov in his speech also stated that in spite of serious shortcomings in the iron and steel industry and in the output of the oil industry, more coal was being mined than before the war, while in the month of October the gross output of the large-scale industry reached the average monthly output of 1940.

RECONSTRUCTION WORK in progress at the Krasny Oktyabr iron and steel works in Stalingrad, U.S.S.R. Scheduled for completion in 1947, the work of restoration included the laying of a new oil pipe line and railway feeder

The most marked failure was in the timber industry, which still fell well below its target, with unfortunate effects on the rehousing program. This failure was largely bound up with a lack of transport facilities. From the soviet point of view one of the main advantages of the Anglo-Soviet trade pact, negotiations for which dragged on intermittently over several months of the year, was the proposed supply by Great Britain of light rails for transporting timber. In this context, throughout 1947 the housing shortage continued to bear heavily on the people of the U.S.S.R., and in Byelorussia and the Ukraine hundreds of thousands were still living in extemporized dug-outs. About 400,000 new dwellings were built in the years 1946–47, but this was a small contribution toward replacement of the 6,000,000 buildings destroyed by the Germans—from peasant huts to modern apartment-blocks—and the 25,000,000 soviet citizens rendered homeless. This shortage of houses was likely to remain a nightmare for many years in view of the expanding population and the radical deterioration of many of the existing buildings in the cities.

On Dec. 14 the supreme soviet decreed the simultaneous abolition of rationing and the devaluation of the currency. This devaluation, on the face of it an anti-inflationary device and an insurance against the buying up of all the goods in the new open market by hoarders and speculators, in fact struck more deeply. For ten roubles in the old currency one new one was given in exchange for cash in hand. This not only hit black marketeers but also ordinary citizens, above all peasants, who preferred the stocking to the bank. When it came to the conversion of the state loan the rich and the very rich appeared to be the main sufferers. Deposits below 3,000 roubles were unaffected; deposits from 3,000 to 10,000 roubles were written down at the rate of 2 new roubles for 3 old ones, while deposits from 10,000 roubles upwards were halved. Nor was the picture complete without reference to the new fixed prices following the end of rationing. Here basic foodstuffs (apart from milk, eggs, tea and fruit) remained at the low "ration-price" level, or went slightly down. The poor could thus buy as much as they could afford at the old prices; but the rich, hitherto relying on the "commercial shops" for off-the-ration purchases and paying up to 20 times more, could now buy as much food as they wanted at, for them, heavily reduced prices. As for consumer goods, these were reduced by two-thirds below the old "commercial" prices, while remaining well above the old "ration" prices, putting them often out of reach of the majority while making them cheaper to the rich. It remained to be seen whether this manipulation was a deliberate attempt to confirm gross inequalities of income, or whether this was an accidental aspect only. The official rate of exchange remained at 5.3 roubles to the United States dollar. The rate of exchange for diplomats was set at 8 roubles to the dollar, instead of the old rate of 12.

Meanwhile, in the cultural and social sphere, the diplomatic isolationism of the Soviet Union was paralleled by an intensive domestic drive, in which all the arts were conscripted, to exalt the superiority of "soviet man" over all other men and to dissociate the vaunted strength and vitality of soviet culture from the so-called decadence of western culture. This campaign touched its peak during the summer. First, the Spaniard, Pablo Picasso, *doyen* of Communist artists, was execrated in Moscow as the supreme and most contemptible exponent of decadent western "formalism." A little later, the soviet minister for agitation and propaganda, Gheorghi Alexandrov, until then respon-

THRESHERS on a collective farm in Kabarda, U.S.S.R., who were awarded the Red Banner (left) for outstanding labour achievement in their district during 1947

sible for the whole campaign for ideological purity, and the scourge of errant writers, was himself publicly rebuked by Andrei Zhdanov for certain passages in his *History of Western Philosophy* which suggested that Marxism arose by a process of natural evolution from the old philosophies of the west, whereas, according to the 1947 soviet doctrine, Marxism was something utterly new, owing nothing to the past, and marking an absolute break with it.

While writers and artists were being bidden to glorify the spirit of soviet man and never to look beyond him, the soviet people were summoned by every publicist in the country to believe in themselves and to cast no tender glances westwards. At the same time a number of official acts were calculated on the one hand to close the last chinks in the iron curtain and on the other to help the Russian people feel a new security and optimism. Thus, in March the supreme soviet passed a law forbidding marriage between a soviet citizen and any foreigner. In June a new decree about state secrets was issued, which, after defining every category of state secret and the punishments for divulging them, contained a blanket clause to prevent any soviet citizen from discussing his work, of whatever kind, with any foreigner. The issue of this decree was accompanied by a strong attack on those scientists who, by wanting to publish their discoveries, set their own vanity above the security of their fatherland.

On the other hand, there was a great deal of activity in revising the penal code. The chief and, in Russian eyes, supremely important aspect of this, was the formal abolition of the death penalty in May and its substitution by 25 years confinement in "reformatory labour-camps." At the same time, the citizens of the U.S.S.R. were invited to contemplate the majesty and grandeur of their judicial system, regarded as a strong shield against ill-doers of every kind—in other words, the people were expected to realize that the law was for them and not, as might sometimes seem, against them. This campaign, taken together with hints of a new and more liberal constitution, all of it coming on top of the division of the central administration of the ministry of the interior during the previous year, seemed to have been calculated to reassure the people and convince them that although their country might be an armed camp in a hostile world, life within it, for the ordinary citizen, was on the way to becoming milder.

**Education.**—(1946) Total scholars in elementary and secondary schools 29,339,000; universities and colleges 772, students 653,000.

**Finance.**—Budget estimates (1947, in millions of roubles): revenue 394,200, expenditure 374,000 (industry 79,900; agriculture 4,300; transport and communications 3,500; commerce and stocks 3,800; education 52,400; health and physical culture 18,900; social insurance 9,300; family allocations 1,500; social security 20,500; armed forces 67,000; loan services 6,100; administrative expenses 12,800). Budgets of the federal republics: estimated revenue and expenditure for 1947 was balanced at the following (in millions of roubles): Russian S.F.S.R. 45,852; Ukrainian S.S.R. 1,789; Byelorussian S.S.R. 3,192; Uzbek S.S.R. 3,161; Kazakh S.S.R. 2,868; Georgian S.S.R. 2,160; Azerbaijan S.S.R. 1,761; Kirghiz S.S.R. 845; Tadzhik S.S.R. 956; Armenian S.S.R. 1,041; Turkmen S.S.R. 819; Moldavian S.S.R. 949; Lithuanian S.S.R. 1,065; Latvian S.S.R. 1,261; Estonian S.S.R. 649; Karelo-Finnish S.S.R. 540.

**Communication and Transport.**—Communications: roads (1945) 849,520 mi.; railways (1945) length of lines 66,000 mi.; new lines under construction (1946) 1,991 mi.; planned (1947) 1,552 mi.; lines newly electrified (1946) 372 mi.; planned (1947) 298 mi.; navigable rivers 68,000 mi.

**Agricultural Production.**—(Plantings, in thousands of acres, with acreage from different regions):

| | | Acreage 1946 | Acreage 1947 |
|---|---|---|---|
| Autumn wheat | U.S.S.R.. | 13,984 | 19,908 |
| | Ukraine | ... | 10,860 |
| Spring wheat | Siberia | 17,395 | 20,740 |
| | Volga | 5,189 | 6,422 |
| | Central north | 2,716 | 3,953 |
| | Ukraine | 1,448 | 1,853 |

Other agricultural plantings for the whole of the U.S.S.R. (in thousands of acres):

| | Acreage 1946 | Acreage 1947 |
|---|---|---|
| Vegetables | 2,471 | 3,212 |
| Maize | 4,892 | 5,584 |
| Sarrazin | 2,668 | 3,706 |
| Millet | nil | 2,471 |
| Rice | 3,333 | 370 |
| Cotton | 3,211 | 3,624 |
| Sugar beets | 2,317 | 2,614 |
| Flax | 2,307 | 3,212 |
| Potatoes | 18,955 | 19,553 |
| Tobacco | 202 | 242 |

Livestock pop. (est. 1947): cattle 52,000,000; sheep 24,000,000; pigs 13,400,000; horses 11,900,000; draft oxen 3,500,000.

**Industrial Production.**—Current production figures were not published. Unofficial estimates for 1946 were (in thousands of short tons): steel 14,870; pig iron 16,530; laminations 14,326. In 1940 official figures were: steel 21,048; coal 181,830; under the postwar five-year plan the figures for 1950 were expected to reach: 26,448 for steel; 275,500 for coal. An unofficial estimate of soviet gold production for 1946 was 3,000 fine oz.

(*See* also Atomic Energy; Bulgaria; Communism; Finland; Poland; Rumania; United Nations.)

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## Unitarian Church.

For the Unitarian churches the year 1947 was one of increased activities. The Service committee, at the request of the World Health Organization Interim commission, sent to Austria a medical teaching mission similar to that sent during 1946 to Czechoslovakia; and an occupational therapy team to Czechoslovakia at the request of the Czech ministry of health. It renovated a large hospital in Piekary, Upper Silesia, Poland; operated a dental clinic in Vienna for former concentration camp inmates and supplied a team of child-care specialists for displaced persons centres in the British and United States zones of Germany. A southwest area project was established to meet needs of migrant workers in that part of the U.S. Officers and staff members of the Service committee were decorated by the French and Hungarian governments.

Under the division of education of the American Unitarian association, 26 Unitarian young people worked on rehabilitation projects in various parts of central Europe. More than 1,000 adults attended leadership training institutes held in various parts of the U.S., and ten specialized training institutes were held for young people. The most significant step in the educational field was the employment of Dr. E. Merrill Bush as full-time director of adult education and social relations.

During the year The Beacon Press expanded its field to include philosophy, biography and art and a number of its volumes by internationally known authors had wide sales, such as *Albert Schweitzer: An Anthology, The Wit and Wisdom of Whitehead,* or the companion volumes of Renaissance woodcuts illustrating the Old Testament and the life of Jesus. Curriculum material for liberal church schools and pamphlets expounding Unitarian views were issued in increasing quantity. It may be noted that there was a marked advance in press notices and articles concerning Unitarian affairs. Magazines and newspapers with a total circulation of more than 240,000,000 carried such items.

At the annual meeting of the American Unitarian association in Boston in May and at the biennial general conference in Washington in October, unusually vigorous discussions took place concerning the denominational journal, *The Christian Register.* It was a healthy display of the zeal of Unitarians for the maintenance of a medium for the free exchange of opinion. (J. H. L.)

## United Church of Canada.

The United Church of Canada, which in 1925 united the Presbyterian Church in Canada, the Methodist Church (Canada) and the Congregational Churches of Canada, reported for 1946 a membership of 767,998 with 1,820,050 persons under pastoral oversight, a Sunday school enrolment of 481,870 and 6,670 preaching places. The church owned property worth approximately $95,211,619 and raised a total of $17,817,949 for all purposes.

The missionary and maintenance givings of the church in 1946 totalled $1,988,098, an increase of $115,735 over 1945. It was estimated that the church would need a budget of $2,750,000 by 1950.

Among the important features in the life of the United Church during 1947 were the sending of a deputation to India and the far east to study the missionary situation and report; a plan to bring selected students from Europe to Canada to be educated in one or more theological colleges; the setting up of a summer school for the training of lay ministers; a planned effort to raise the level of ministerial salaries; progress in negotiations to bring both the British and the African Methodist Episcopal Churches (Negro) into the United Church of Canada; and the appointment of six representatives to attend the first meeting of the World Council of Churches.

Two new appointments were made as follows: Rev. W. Harold Young, secretary of the board of colleges and secondary schools; Rev. W. G. Berry, assistant secretary of the board of evangelism and social service. (G. A. Si.)

**United Kingdom:** *see* GREAT BRITAIN AND NORTHERN IRELAND, UNITED KINGDOM OF.

## United Nations (U. N.).

The year 1947 was the second year of the actual operation of the United Nations. During 1946 the work of the U.N. was to a large extent organizational in character. It was necessary during this first year to determine detailed organization, procedures and methods needed for performing the functions of the U.N. and achieving the purposes set down in the charter. The year 1947, by contrast, was devoted more largely to the consideration of substantive problems.

**Membership.**—Two new members were admitted during the year, Pakistan and Yemen, bringing the total membership of the organization to 57. The membership at the close of the year 1947 was as follows: Afghanistan, Argentina, Australia, Belgium, Bolivia, Brazil, the Byelorussian Soviet Socialist Republic, Canada, Chile, China, Colombia, Costa Rica, Cuba, Czechoslovakia, Denmark, the Dominican Republic, Ecuador, Egypt, El Salvador, Ethiopia, France, Greece, Guatemala, Haiti, Honduras, Iceland, India, Iran, Iraq, Lebanon, Liberia, Luxembourg, Mexico, the Netherlands, New Zealand, Nicaragua, Norway, Pakistan, Panamá, Paraguay, Peru, the Republic of the Philippines, Poland, Saudi Arabia, Siam, Sweden, Syria, Turkey, the Ukrainian Soviet Socialist Republic, the Union of South Africa, the Union of Soviet Socialist Republics, the United Kingdom, the United States of America, Uruguay, Venezuela, Yemen and Yugoslavia.

Eight new applications for membership—from Austria, Bulgaria, Finland, Hungary, Italy, Pakistan, Rumania and Yemen—were received during the year. Of these six were turned down by the Security council. Three received the necessary majority of seven, but were opposed by one or more of the permanent members. Three failed to receive the necessary majority support. The five applications for membership refused by the Security council in 1946, that is, the applications from Albania, Eire (Ireland), the Mongolian People's Republic, Portugal and Trans-Jordan, were reconsidered by the Security council at the request of the general assembly and the earlier action reaffirmed. The failure of the Security council to take favourable action on 11 out of 17 applications received during 1946–47 led the general assembly to consider the whole matter at some length in its second session. There was criticism of the permanent members of the Security council, particularly the Soviet Union, for voting against applications for reasons not stated in the charter and for even voting against applications while admitting the qualification of the applicant under the terms of the charter. The general assembly adopted a resolution expressing the judgment that six of the applicant states which had thus been refused admission, *i.e.*, Austria, Eire, Finland, Italy, Portugal, and Trans-Jordan, were "peace-loving" within the meaning of the charter. It adopted a second resolution asking the International Court of Justice for an advisory opinion on the question whether a member of the Security council was justified in voting against a membership application on grounds not stated in article 4 of the charter. The general assembly also asked the permanent members of the Security council to consult with a view to reaching agreement on applications for membership.

**The General Assembly.**—The first special session of the general assembly was held during 1947. It met in New York from April 28 to May 15 to consider the Palestine question brought before it at the request of the British government. The second regular session met in New York from Sept. 16 to Nov. 29. Forty-three items were on the provisional agenda and 19 on the supplementary list. Additional items were introduced during the session. Forty-five plenary sessions were held, 455 committee and subcommittee meetings were held and 93 resolutions were adopted.

Dr. Oswaldo Aranha (*q.v.*) of Brazil, who had been elected president of the general assembly at its special session, was elected to the office for the second regular session. The chairmen of the six main committees were as follows: (1) Political and Security, Joseph Bech, Luxembourg; (2) Economic and Financial, Hernán Santa Cruz, Chile; (3) Social, Humanitarian and Cultural, Dr. Oscar Lange, Poland; (4) Trusteeship, Sir Carl A. Berendsen, New Zealand; (5) Administrative and Budgetary, Justice Fazl Ali, India; and (6) Legal, Faris Bey el-Khouri, Syria. The heads of the delegations of the following states were elected vice-presidents: China, Cuba, France, Mexico, the Soviet Union, the United Kingdom and the United States. The president, the six committee chairmen, and the seven vice-presidents constituted the General committee.

The matters which were considered by the general assembly during its second session included the following: the Palestine question, the Balkan situation involving relations between Greece and its northern neighbours, the Korean situation resulting from the failure of the United States and the Soviet Union to agree on a plan for the establishment of a Korean government, the United States proposal for a "little assembly," the alleged abuse of the veto by the permanent members of the Security council, the treatment of Indians by the government of the Union of South Africa, the Franco government in Spain, the soviet charge of warmongering, the action of the Security council on applications for membership, the failure of the government of the Union of South Africa to submit a trusteeship agreement for the mandated territories of South Africa, reports from members administering nonself-governing territories, agreements with specialized agencies defining their relationship to the U.N., problems of refugees and displaced persons, the development and codification of international law, the transfer to the U.N. of League of Nations functions regarding traffic in women and children, the U.N. budget for 1948, plans for the permanent headquarters of the U.N. and the headquarters agreement with the United States. On practically all of these matters, resolutions of varying degrees of force and adequacy were adopted. As one of its last acts, the second session decided that the third regular session should be held in Europe at a place to be selected by a special committee.

To carry out its functions under the charter, more particularly in connection with matters before it at the second session, the general assembly created a number of subsidiary organs. These included: (1) the Commission for Palestine to supervise the carrying out of the plan for the partition of that country into Jewish and Arab states; (2) the Special Balkan committee to watch over the carrying out of the general assembly's recommendations for the settlement of the Balkan question; (3) the Temporary Commission on Korea, to supervise the holding of elections in Korea and assist in the establishment of a Korean government; (4) the Interim committee, established to perform certain functions of the general assembly during the interval between the sessions of that organ; and (5) an advisory committee to assist the Security council in carrying out plans for the construction of permanent headquarters.

**The Security Council.**—The composition of the Security council during 1947 was as follows: permanent members—China, France, the Soviet Union, the United Kingdom and the United States; members elected by the general assembly—Australia, Brazil and Poland (terms expiring Dec. 31, 1947) and Belgium, Colombia and Syria (terms expiring Dec. 31, 1948). During the second session the general assembly elected Argentina, Canada and the Ukraine for two-year terms beginning Jan. 1, 1948. The Ukraine was elected on the 13th ballot after a prolonged deadlock, caused by opposition to the Ukraine as a successor to Poland and to considerable feeling that the Asiatic-Pacific area was entitled to an elected representative, had been broken by the withdrawal of India as a candidate.

Among the matters which came before the Security council during 1947 were the following: the implementation of the general assembly resolution of Dec. 14, 1946, on principles governing the regulation and reduction of armaments; the first report of the Atomic Energy commission; the Statute of Trieste, and the appointment of the first governor; the proposals of the United States for placing the former Japanese mandated islands under trusteeship; the Corfu incident between the United Kingdom and Albania; the Egyptian complaint against the continued presence of British troops and failure to settle the Sudan question; the outbreak of hostilities in Indonesia; the report of the Commission of Investigation Concerning Greek Frontier Incidents; the report of the Military Staff committee; and the consideration of new and the reconsideration of old applications for membership in the U.N.

The requirement of the unanimity of the permanent members for decisions on substantive questions prevented Security council action on many of these matters. Thus the Security council was unable to reach a decision on the merits of the Corfu incident, the Egyptian complaint and the report of the Greek commission. On only 2 of the 13 applications for membership considered by the council during 1947 was it possible to arrive at a decision in favour of recommendation. The same disagreements which prevented unanimous recommendations by the Military Staff committee and the Atomic Energy commission on the questions referred to them persisted in the Security council and prevented substantive decisions from being taken on the reports of these bodies. The whole question of the alleged "abuse of the veto" was considered by the general assembly at some length and referred to the Interim committee for study. The inability of the Security council to take action resulted in greater use of the general assembly and the establishment of the Interim committee with a view to making it possible to bring a matter before the general assembly, or its subsidiary organ, at any time.

Article 43 of the charter provides for agreements defining the military forces and facilities to be placed at the disposal of the Security council for enforcement action. The Military Staff committee had been asked to study and report on principles governing the organization of such forces. This report was submitted on April 30. It contained 41 articles, on 25 of which there was full agreement. The 16 remaining articles, however, dealt with such fundamental questions as the size of contributions to be made, the nature of facilities to be made available, the location of forces at the disposal of the Security council and the amount of such forces. As the consequence of the failure to agree on these matters, no progress was made during 1947 in implementing the provisions of article 43.

"WEARIED AND GETTING NOWHERE," was how Bishop of the *St. Louis Star-Times* viewed the effect of soviet blocking in U.N. affairs during 1947

**Economic and Social Council.**—During 1947 the Economic and Social council was composed of the following members: those with terms expiring Dec. 31, 1947—Cuba, Czechoslovakia, India, Norway, the Soviet Union and the United Kingdom; those with terms expiring Dec. 31, 1948—Belgium, Canada, Chile, China, France and Peru; those with terms expiring Dec. 31, 1949—Byelorussian S.S.R., Lebanon, New Zealand, Turkey, the United States and Venezuela. During the second session of the general assembly the following were elected members with three-year terms beginning Jan. 1, 1948: Australia, Brazil, Denmark, Poland, the Soviet Union and the United Kingdom. The council held two sessions in 1947, both at Lake Success, its fourth session from Feb. 28 to March 29, and its fifth session from July 19 to Aug. 17. The president of the council during 1947 was Sir A. Ramaswami Mudaliar of India. Because of his inability to be present at the fifth session the first vice-president, Dr. Jan Papanek of Czechoslovakia, presided.

At its fourth session, the council established two regional commissions, the Economic Commission for Europe and the Economic Commission for Asia and the Far East, to assist it in the economic reconstruction and development of these areas. Added to the 9 commissions established in 1946, this made a total of 11 commissions. All of these commissions held their first meetings in 1947 except for the Narcotics commission, which met in Dec. 1946. The council relies heavily on these commissions for detailed studies and recommendations and technical advice, as well as for the performance of limited administrative functions. At the fifth session, consideration was given to the establishment of two additional regional commissions, one for Latin America and one for the near east. An *ad hoc* committee was created to consider factors bearing on the establishment of the first.

The matters which came before the Economic and Social council for consideration and decision during 1947 included the following: reports of the council's commissions, including the Economic Commission for Europe and the Economic Commission for Asia and the Far East, reports on the work of the International Children's Emergency fund, negotiations with specialized agencies of agreements defining their relationship to the U.N., preparations for a Conference on Trade and Employment which convened at Havana, Cuba, on Nov. 21, preparations for a Conference on Freedom of Information to be held at Geneva in the spring of 1948, preparation of a draft convention defining the crime of genocide, a report from the International Labour organization on the right of workers to organize, steps to bring certain synthetic drugs of a habit-forming nature within the system of international narcotics control, and the granting of consultive status to additional nongovernmental organizations. The decision was taken to hold two sessions of the council in 1948, the first at Lake Success in February, and the second at Geneva, Switzerland, in July.

**Trusteeship Council.**—As the result of the failure of any trusteeship agreements to enter into force until Dec. 13, 1946, it was not possible for the Trusteeship council to be organized and to hold its first session until after this date. The initial composition of the Trusteeship council was as follows: (1) members administering trust territories—Australia, Belgium, France, New Zealand and the United Kingdom; (2) other permanent members of the Security council—China, the Soviet Union and the United States; (3) members elected by the general assembly for three-year terms beginning Jan. 1, 1947—Iraq and Mexico. The Soviet Union was not represented because of its refusal to accept the Trusteeship council as properly constituted, in view of the manner in which trusteeship agreements had been made and their provisions.

Following the entrance into force on July 18 of the trusteeship agreement for the administration of the former Japanese mandated islands by the United States, it became necessary for the general assembly to elect two additional members of the council to restore the balance between members administering trust territories and those not administering such territories. This was done during the second session of the general assembly when Costa Rica and the Republic of the Philippines were elected for three-year terms ending Jan. 1, 1951, but with the special provision that they take office immediately upon election.

The council held two sessions during 1947, both at Lake Success: the first from March 26 to April 28, and the second from Nov. 20 to Dec. 16. Francis B. Sayre and Sir Carl Berendsen were elected president and vice-president respectively at the first session, to hold office until their successors were elected in the June 1948 session.

The first session of the council was devoted almost entirely to procedural matters. The council adopted its rules of procedure, which are of special importance as they determine the manner in which the functions of the council are to be performed. The council also drafted a provisional questionnaire which was to serve as the basis for reports made by the administering authorities. It received a number of petitions and decided to send a visiting mission to Western Samoa. In its second session, the council gave consideration to additional petitions that had been received, arrangements for periodic visiting missions to trust territories, a revision of the original questionnaire, the report of its visiting mission to Western Samoa, and relations with the Economic and Social council and the Security council.

**International Court of Justice.**—The International Court of Justice had one case submitted to it during 1947—the dispute between Albania and the United Kingdom over the Corfu channel incidents. This case was submitted by the parties following recommendation by the Security council. (For further details, *see* INTERNATIONAL COURT OF JUSTICE.)

**Consideration of Disputes and Situations Affecting Friendly Relations.**—During 1947 the organs of the U.N. were called upon to deal with a number of disputes and situations affecting friendly relations and in some instances involving the threat or actuality of hostilities. On Jan. 10, the British government brought before the Security council its dispute with Albania arising from damage to British ships and loss of life as the result of mine explosions and firing from shore batteries in the Corfu channel. The council was unable to take any decision on the merits of the case because of the refusal of the Soviet Union to accept the conclusion that Albania was responsible, but the council finally decided to ask the parties to refer the matter to the International Court of Justice. The case was submitted and was to come up for decision early in 1948.

The claim of the Greek government that Albania, Bulgaria and Yugoslavia were giving support to guerrilla activities along its northern frontier was the subject of investigation by a commission of the Security council which made its report on May 27. The majority of the commission found that the Greek charges were substantiated and recommended measures to deal with the situation. The Soviet Union opposed the findings of the commission and its conclusions, and prevented any decision of the Security council from being reached. Finally, on Sept. 15, the matter was removed from the list of matters with which the Security council was seized, and on the initiative of the United States was brought before the general assembly. On Oct. 21, the general assembly adopted a resolution calling upon the states directly concerned to settle the dispute peacefully, making recommendations looking to the establishment of normal relations, and establishing a special Balkan commission to assist in carrying out these recommendations. The members of the soviet bloc opposed the adoption of the resolution and announced that they did not intend to co-operate.

The Palestine question was brought before the general assembly at the request of the United Kingdom following failure to reach agreement with the Jewish and Arab groups. The general assembly in its first special session voted to establish a special committee to investigate the situation and made recommendations for the settlement of the problem. During the summer of 1947 this committee made a thorough investigation of the situation, and submitted a report which the general assembly considered during its second session. The majority recommendations of the committee, providing for partition, with provision for economic unity, and the establishment of Jerusalem as a trust territory under the Trusteeship council, were incorporated in the resolution adopted by the general assembly. The general assembly established a five-member commission to supervise the carrying out of the plan. Enforcement action was recognized to be the function of the Security council.

Following an extended deadlock in diplomatic negotiations, the Egyptian government on July 11 brought before the Security council its dispute with the United Kingdom over the continued presence of British troops in Egyptian territory and the future status of the Sudan. None of the proposed resolutions received the support necessary to adoption. After all proposals had been considered and defeated, the council turned to other business, leaving the question on the list of matters with which it was seized.

The Indonesian question was brought before the Security council by the Indian and Australian governments on July 30, following an outbreak of armed conflict between the Dutch and Indonesian forces. On Aug. 1, the council adopted a resolution calling upon the parties to cease hostilities and settle their differences by peaceful means. Though the two parties agreed, hostilities did not cease in fact, and on Aug. 26 the Security council voted to call for strict observation of the Aug. 1 resolution, asked the career consuls in Batavia to report on the situation, and tendered its good offices. After receiving a report from the consular commission indicating an unsatisfactory condition, the Security council on Oct. 3 requested its Committee of Good Offices to proceed immediately with its work. Later on Oct. 14 it adopted a resolution requesting the parties to consult with each other with a view to giving effect to the resolution of Aug. 1 and directed the Committee of Good Offices to assist.

The question of the treatment of Indians in South Africa was brought before the general assembly by India. The general assembly in Dec. 1946 adopted a resolution expressing the opinion that treatment should be in accordance with international obligations and requesting the two governments to report on measures adopted. The matter was taken up again during the second session and after extended discussion a resolution requesting round table discussions between the two governments on the basis of respect for international obligations failed to receive the necessary two-thirds majority support. A somewhat similar result occurred with respect to the Spanish situation. In its second session the general assembly adopted a resolution which failed to reaffirm the action it had taken in 1946 in calling upon members to withdraw their ambassadors and ministers and simply expressed confidence that the Security council would exercise its responsibilities.

Failure of the United States and the Soviet Union to agree on steps to be taken to implement the decisions of the Council of Ministers at Moscow in Dec. 1945, with respect to Korea led the United States to bring this matter before the general assembly at its second session. In the face of strong soviet opposition the general assembly adopted a resolution recommending the holding of elections in Korea for establishing a democratic Korean government and creating a temporary commission to aid in carrying out the program. The Soviet Union announced that it would not co-operate.

**Security and Regulation of Armaments.**—In carrying out the terms of the general assembly resolution of Dec. 13, 1946, on principles governing the reduction of armaments, the Security council considered the first report of the Atomic Energy commission and after extensive discussion, in the course of which the disagreements which had emerged in the council were repeated, decided on May 10 to refer the matter back to the council for further study and for the preparation of the necessary treaties and conventions. New soviet proposals submitted to the council on June 11 did not substantially narrow the area of disagreement and the second report of the commission adopted on Sept. 11 by a vote of ten to one, with one abstention, left the same impasse and substantially the same points of disagreement as had formerly existed. (*See* ATOMIC ENERGY.)

To prepare and report on proposals for the limitation of armaments not falling within the category of atomic weapons and other weapons of mass destruction, the Security council, by decision of Feb. 13, created the Commission on Conventional Armaments. On July 8, the Security council approved a plan of work for this commission. No further progress was made.

A similar lack of success attended the efforts to implement the enforcement provisions of articles 42 and 43 of the charter. The report of the Military Staff committee showed disagreement among the permanent members on important issues, and no progress was made in the Security council in resolving these differences. Consequently, responsibility for enforcement action by military means continued to rest on the permanent members of the Security council under the transitional arrangements contained in article 106 of the charter.

The general assembly during its first session also created an *ad hoc* commission on the progressive development of international law and its codification. (*See* INTERNATIONAL LAW.)

**Economic and Social Co-operation.**—The work of the U.N. in this field followed the general lines that had been laid down in 1946. For the most part it consisted of fact-finding, analysis and the preparation of recommendations and the bases of possible agreement between governments.

The needs of economic reconstruction and development were considered in great detail and from many angles. The Economic Commission for Europe held two sessions, as the result of which machinery was set up to take over the functions of the Emergency Economic Committee for Europe, the European Central Inland Transport organization and the European Coal organization. It was decided that at its next session in Jan. 1948, it would consider measures of concerted action for the reconstruction of Europe. The task of the commission was limited, however, by the initiation of Secretary George C. Marshall's proposals for economic reconstruction outside the framework of the U.N. (*See* EUROPEAN RECOVERY PROGRAM.) The work of the Economic Commission for Asia and the Far East was advanced by the decision of the Economic and Social council that specified dependent territories should have associate membership in the council. At Geneva the Preparatory committee of the U.N. Conference on Trade and Employment completed the draft charter of a proposed international trade organization and arrangements were made for the holding of a U.N. Conference on Trade and Employment at Havana which began its meetings on Nov. 21. Negotiations between 16 countries at Geneva with a view to the reduction of tariffs were successfully completed. Arrangements were made for regular reports on world economic conditions and trends.

In the area of social policy, the U.N. reaffirmed its position that while every reasonable effort should be made to secure the return of displaced persons to countries of origin, the permanent settlement of persons not so returned is an international responsibility. Necessary support, financial and other, was given to the Interim committee of the International Refugee organization. The secretary-general continued his efforts to facilitate the relief activities of national governments and private agencies, made necessary by the termination of U.N.R.R.A. (*See* UNITED NATIONS RELIEF AND REHABILITATION ADMINISTRATION.) The work of the International Children's Emergency fund was vigorously carried on. Functions of the League of Nations in relation to traffic in women and children were taken over by the U.N. The international control of narcotic drugs was perfected, with special attention to synthetic drugs of a habit-forming nature.

To promote respect for basic human rights and improve cultural relations, plans were laid for a world conference on freedom of information to be convened at Geneva, March 3, 1948. The Commission on Human Rights, meeting at Geneva, completed the first draft of an international bill of rights. The general assembly in its second session adopted resolutions calling upon members to encourage the dissemination of information expressing the desire of peoples for peace and to consider measures to combat the diffusion of false or distorted reports. The general assembly also requested that members improve education on the U.N.

**Specialized Agencies.**—Much of the work for the achievement of the purposes of the U.N. in the economic and social fields continued to be accomplished through the specialized agencies. Specialized agencies in existence or in process of formation in 1947 were the following:

*International Labour Organization* (I.L.O.).—*See* separate article.

*Food and Agriculture Organization* (F.A.O.).—*See* FOOD SUPPLY OF THE WORLD.

*International Monetary Fund* (Fund).—*See* separate article.

*International Bank for Reconstruction and Development* (Bank).—*See* separate article.

*International Civil Aviation Organization* (I.C.A.O.).—*See* AVIATION, CIVIL.

*International Refugee Organization* (I.R.O.).—*See* REFUGEES.

*Universal Postal Union* (U.P.U.).

*International Telecommunications Union* (I.T.U.).

*International Trade Organization* (I.T.O.).—*See* TARIFFS.

*United Nations Educational, Scientific and Cultural Organization* (U.N.E.S.C.O).

The work of U.N.E.S.C.O. during 1947 stemmed from the program adopted at the Paris conference in 1946. It consisted of gathering and co-ordinating information on the needs for educational reconstruction, assistance to governments in developing programs of fundamental education, the promotion of international understanding by such methods as scholarships and the exchange of teachers, co-operation with U.N. organs in preparing for the Conference on Freedom of Information, scientific exploration of the Hylean Amazon and related activities. The second general conference met at Mexico City, Nov. 26 to Dec. 4. Austria, Colombia, Cuba, El Salvador, Hungary, Italy, Liberia, Luxembourg and Switzerland were admitted to membership, bringing the total number of members to 39. The work of the year 1947 was reviewed and a program giving education first priority was adopted for 1948. It was decided to hold the 1948 conference in Beirut, Syria.

(*See* also LIBRARIES.)

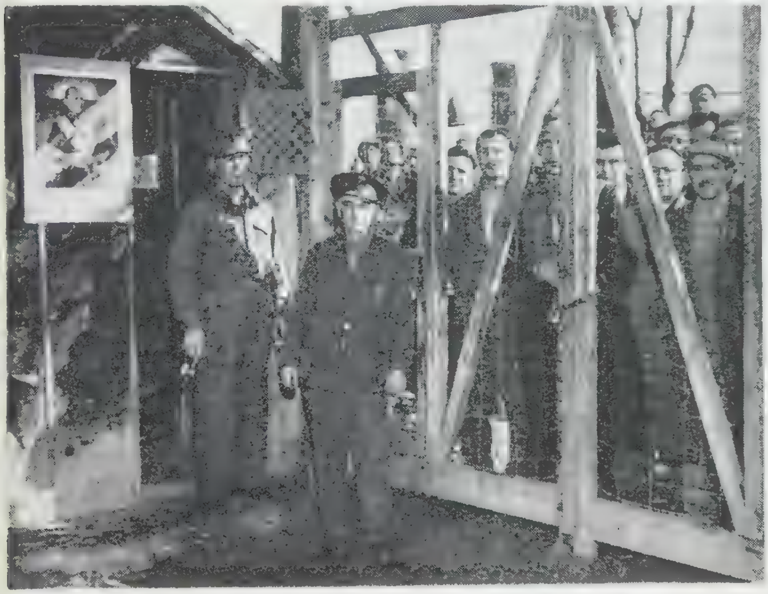
*World Health Organization* (W.H.O.).—The constitution of the World Health organization was originally signed by 64 states. Ratification by 26 U.N. members was necessary to bring the constitution into force. At the end of 1947, 24 states had ratified, of which 17 were members of the U.N. Pending the establishment of W.H.O., the Interim commission performed numerous health activities which would later be assumed by the permanent organization. The commission took over the functions of the League of Nations Health organization. It took over the Singapore Epidemiological station and assumed certain of the functions of U.N.R.R.A. in the health field. It also took over the duties of the Office international d'hygiène publique at Paris. Operating through committees of experts and special missions, the commission assisted in combatting the cholera outbreak in Egypt and in developing long-range programs for malaria and tuberculosis. It provided technical aid for countries in need, including Austria, China, Greece and Poland, and put into operation a fellowship program permitting doctors and other health experts to study in world centres of medical knowledge.

The general assembly in its second session approved agreements defining the relationship of the U.N. to the fund, the bank, U.P.U., I.T.U. and W.H.O. These agreements, because of the specialized character of certain of the agencies concerned, contained features not found in the earlier agreements with F.A.O., I.L.O., U.N.E.S.C.O. and I.C.A.O. In particular, the agreements with the fund and the bank went less far than the other agreements in providing the U.N. with effective means of co-ordinating the activities of the specialized agencies with those of the U.N.

The Co-ordination commission, consisting of the secretary-general of the U.N. and of corresponding officers of the specialized agencies brought into relationship with it, held its first meeting on Feb. 4. To implement agreements that had been reached, a working committee was set up.

**Nonself-Governing Territories and Trusteeship Matters.**—Under article 73e of the charter members are obligated to transmit regularly to the secretary-general statistical and other information of a technical character on the economic, social, and educational conditions in nonself-governing territories in which they are represented. By its resolution of Dec. 14, 1946, the general assembly directed the secretary-general to summarize, classify, and analyze this information and established an

Above: SESSION of the 18-nation U.N. Economic and Social council, meeting at Lake Success, N.Y., in Feb. 1947, to discuss human rights, world resources conservation, international trade and other international matters



Above: MOTOR CAVALCADE bearing U.N. members of the special commission on Palestine arriving in Tel Aviv on June 25, 1947, during their tour of inspection in the Holy Land

Left: PRISON GUARDS (left) and inmates at the detention camp for political prisoners outside Salonika, Greece, which was visited by an 11-member U.N. inquiry commission into Balkan affairs, early in 1947

Below: FIELD TEAM of the U.N. Balkan Inquiry commission travelling through a mountain area of Greece in March 1947, to meet with guerrillas of the "Democratic Free army" active in the border regions

*ad hoc* committee to examine the summary thus prepared and make recommendations to the general assembly at its second session. Eight members of the U.N. listed 74 territories in respect to which they intended to transmit information. Information with respect to 62 territories was received and summarized by the secretary-general, in time for consideration by the *ad hoc* committee. The committee recommended to the general assembly that a permanent special committee be created to assist the general assembly in the consideration of this information, with a standard form to be used in its preparation, that the secretary-general in preparing his own summary be allowed to use supplementary sources of information, and that the transmission of political information be encouraged. The general assembly adopted resolutions along these lines. Thus considerable progress was made in the development of a system of international accountability for all nonself-governing territories.

The year 1947 saw the establishment of the trusteeship system in effective operation and substantial progress in the development of procedures for carrying out its purposes. In addition to the eight agreements approved in 1946, the general assembly in its second session approved a trust agreement for the island of Nauru to be administered by Australia on behalf of Australia, New Zealand and the United Kingdom. The trusteeship system was first extended to a strategic area by the approval of the Security council and the subsequent ratification by the United States of an agreement for the administration by the United States of the former Japanese mandated islands. Under the terms of the agreement, the United States accepted the provisions of articles 87 and 88 of the charter subject only to the right to determine the extent of their application in areas closed for security reasons.

In its first session the Trusteeship council determined its procedure for hearing reports, receiving petitions and conducting inquiries. It also drafted a provisional questionnaire to be used as the basis of reports by administering authorities. It received a number of petitions, including one from groups in Western Samoa asking for greater autonomy, which led it to exercise its right to investigate on the spot by sending a visiting mission to the islands. The mission made a report containing concrete recommendations for the improvement of the administration of the islands. These recommendations were adopted by the Trusteeship council in its second session and accepted by New Zealand, the administering authority. The Trusteeship council in its second session also established a working committee to prepare a detailed statute for the city of Jerusalem and gave consideration to a petition for the unification of Eweland, which was divided between Togoland under British administration and Togo under French administration. Plans were advanced for periodic visits to trustee territories. (For further consideration of the trusteeship system, *see* TRUSTEE TERRITORIES.)

**General Administration.**—The details of the internal organization of the secretariat were substantially altered during 1947, but the original departmental organization was preserved. Only one change was made in the top personnel. John B. Hutson resigned as assistant secretary-general in charge of the Department of Administrative and Financial Services and was replaced by Byron Price. Progress was made in the building up of a permanent staff. Salary adjustments were made in response to rising living costs. A joint staff pension scheme was inaugurated on Jan. 27.

On Dec. 14, 1946, the general assembly had decided on the location of the permanent headquarters in New York city. Early in Jan. 1947 a headquarters planning staff was established which prepared a general plan for the permanent headquarters, including designs of buildings. This plan was approved by the general assembly in its second session. At the same time the secretary-general was authorized to negotiate a $65,000,000 interest-free loan with the United States government for the construction of the permanent headquarters.

The secretary-general was authorized by the general assembly resolution of Dec. 14, 1946, to conclude with the appropriate authorities of the United States an agreement concerning arrangements required for the satisfactory performance of the organization's work as the result of the establishment of the headquarters in New York. On June 26 the text of an agreement between the United Nations and the United States was signed by Secretary-General Trygve Lie and Secretary of State Marshall, and was subsequently approved by the general assembly. Further accessions to the Convention on the Privileges and Immunities were received, but the secretary-general in his annual report felt it necessary to call the attention of members to the urgency of more speedy action.

**Finances.**—The financial year corresponds to the calendar year. The 1948 budget adopted by the general assembly provided for the expenditure of $34,825,125. The members of the soviet bloc abstained from voting because the budget made provision for the Interim committee and the Greek and Korean commissions which they had opposed as contrary to the charter. The assembly also appropriated $876,568 as a supplement to the original 1947 budget of $27,740,000. The U.N. budgets for the years 1947 and 1948 compared with the budget of $19,390,000 in 1946. The working capital fund for 1948 was maintained at $20,000,000.

The scale of members' contributions to the 1948 budget as adopted by the general assembly at its second session differed only slightly from the 1947 scale. The allocations ranged from 0.04% for Costa Rica, Yemen and several other members to 39.89% for the United States. The U.S. representative on the Administrative and Budgetary committee of the general assembly stated that his country accepted the figure for 1948 only because of existing economic conditions.

(*See* also TARIFFS.)

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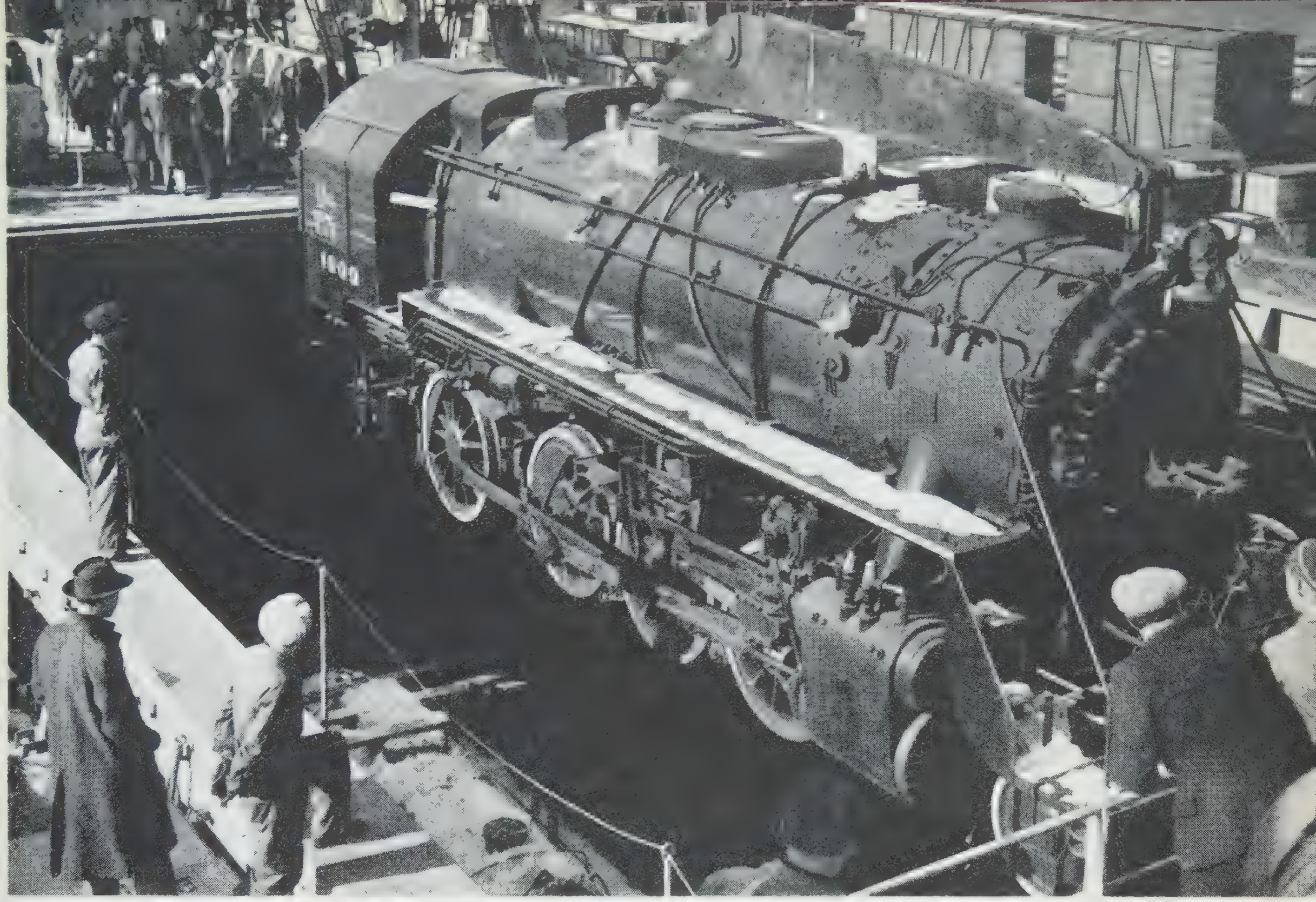
## United Nations Relief and Rehabilitation Administration.

The United Nations Relief and Rehabilitation administration (U.N.R.R.A.), an international agency, composed of 48 United Nations, completed its programs of postwar aid during 1947. Created in 1943 to help victims of World War II in liberated areas, its operations concentrated primarily on assisting those nations with the greatest need and without adequate foreign exchange resources to finance their own relief imports. The assistance consisted of relief supplies—food, clothing, fuel, medicines; relief services—trained personnel to advise how best to use the supplies; and rehabilitation supplies and services—seeds, fertilizers, insecticides, basic farm tools, repair parts for the rehabilitation of industry, transportation and other public utilities and raw materials. In addition, U.N.R.R.A. also furnished aid for the care and repatriation of millions of the war's displaced persons.

As operator of the largest peacetime shipping business in history, U.N.R.R.A. sent out more than 25,000,000 long tons of supplies. The value of the goods shipped was almost $3,000,000,000, or about three times the relief goods distributed after World War I.

The principal supplies shipped (as of Sept. 30, 1947), are shown in Table I on page 753.



RAILROAD LOCOMOTIVE, one of 47 built for U.N.R.R.A. for shipment to China, being lowered into the hold of the S.S. "Beljeanne" at Weehawken, N.J., on Feb. 11, 1947

Table I.—*Principal U.N.R.R.A. Supplies Shipped as of Sept. 30, 1947, and Countries Assisted*

| Category | Value | Long Tons |
|---|---|---|
| Food | $1,242,846,000 | 8,952,804 |
| Clothing, textiles and footwear | 436,590,000 | 607,050 |
| Medical and sanitation | 108,392,000 | 105,308 |
| Agricultural rehabilitation | 315,341,000 | 2,277,721 |
| Industrial rehabilitation | 629,816,000 | 11,266,350 |
| Unclassified | 8,785,000 | 33,472 |
| Other supplies, mostly from military surpluses | 116,097,000 | 610,110 |

| Countries Assisted | Value | Long Tons |
|---|---|---|
| Albania | $ 25,803,000 | 134,892 |
| Austria | 135,172,000 | 1,101,118 |
| Byelorussian S.S.R. | 60,440,000 | 133,244 |
| China | 490,827,000 | 2,372,581 |
| Czechoslovakia | 260,339,000 | 1,532,273 |
| Dodecanese Islands* | 4,028,000 | 33,680 |
| Ethiopia | 625,000 | 1,699 |
| Finland* | 2,422,000 | 7,646 |
| Greece | 346,726,000 | 2,877,791 |
| Hungary* | 4,413,000 | 19,056 |
| Italy | 417,410,000 | 10,264,721 |
| Korea* | 916,000 | 6,322 |
| Philippines | 9,887,000 | 36,095 |
| Poland | 471,300,000 | 2,211,539 |
| Republic of San Marino* | 30,000 | 214 |
| Ukrainian S.S.R. | 188,302,000 | 434,093 |
| Yugoslavia | 407,152,000 | 2,539,137 |

*Programs of limited emergency aid.

Member nations not invaded during World War II were asked to contribute for operating expenses a total of 2% of their national income for the fiscal year ending June 30, 1943. All member nations, including those that were invaded, made contributions toward the administrative expenses. The three largest contributors were United States ($2,700,000,000), United Kingdom ($624,650,000) and Canada ($138,738,000).

Compelled by the conditions in the liberated countries, U.N.R.R.A. was forced to concentrate on immediate relief needs, rather than on a full-rounded rehabilitation program that would put the countries back on their feet. Since hunger had to be dealt with first, the bulk of U.N.R.R.A. shipments was food, undoubtedly the deciding factor in the prevention of widespread starvation during the first two postwar years.

During 1947 U.N.R.R.A. transferred its major health activities to the World Health organization; some of its welfare activities and functions to the International Children's Emergency fund; some of its technical and advisory services in connection with agricultural rehabilitation to the Food and Agriculture organization; and all its responsibility for the displaced persons to the Preparatory commission of the International Refugee organization; and to implement these transfers sums aggregating approximately $10,000,000 were conveyed to the appropriate agencies.

Missions to aid relief programs in Europe were closed on June 30, 1947. The office in China remained open through December, and a trusteeship plan, to be administered under a board including both foreign and Chinese nationals, was set up to carry forward the U.N.R.R.A.-initiated, long-range rehabilitation projects in that country. (*See* also FOOD SUPPLY OF THE WORLD; REFUGEES.) (L. W. R.)

**United Nations War Crimes Commission:** *see* WAR CRIMES.

## United States.

According to figures released by the bureau of the census on Nov. 28, 1947, the population of continental United States on Oct. 1 was 144,708,000, of whom 143,373,000 were civilians and 1,335,000 were still in the armed forces. The increase in population from April 1940 was more than 13,000,000, or 7% of the population in 1940. The urban population increased 12.7%, and the rural nonfarm population 14.3%, while the farm population fell off about 9.6% from 30,219,000 in 1941 to 27,305,000 in 1947. On a regional basis the increase of 24.7% in the west contrasted sharply with that of 2.7% in the south; and the rate of increase of the nonwhite population exceeded that of the whites in the ratio of 11.6% to 7.5%. There was little change in the two trends of population noticeable in recent decades: namely, the slow rate of increase as compared with that of the early and middle years of the country, and the growing tendency toward a higher age level of the population. The total area of continental United States is 3,022,387 sq.mi.

**History.**—On the domestic front the chief concerns of the people of the U.S. in 1947 were the constantly mounting cost of food, clothing and other necessities of life, which resulted from the spiral of inflation caused by reciprocal boosts in wages and prices as well as to the excess of demand over supplies; and the persistent shortage of housing, which President Harry S. Truman declared in November to be "the foremost of the many problems facing the nation." On the international front, despite all the meetings of the foreign ministers (the tenth being held in London, Nov.–Dec. 1947) and of the delegates to the United Nations, little or no progress was made toward harmony between the western democracies and the U.S.S.R. To be sure, treaties were signed with the former German satellite states; but the major settlements with Germany and Austria had not made any substantial progress when the year came to an end. On every question affecting the future peace and security of the world—the control of atomic energy, the check to the spread of communism in Europe, the plans for United States aid to the destitute peoples of the old world, the scheme for giving the smaller nations a larger influence in the councils of the United Nations—the soviet representatives, on instructions from Moscow, interposed their veto and reiterated the charges that the U.S., aiming at an imperialistic domination of the world, was fomenting the war spirit. It was evident that no reconciliation of the opposing ideologies of the two great protagonists, the U.S. and the Union of Soviet Socialist Republics, seemed possible. Whether they could live together in the same world without coming to blows was a question which hung over the heads of the people like the sword of Damocles.

**Congress.**—The 80th congress convened on Jan. 3, 1947, with 51 Republicans and 45 Democrats in the senate and 245 Republicans and 187 Democrats in the house. It was the first time in 16 years that the Republicans had control of both houses, and the first time after Woodrow Wilson's second ad-

*Major Legislation Passed by U.S. Congress in 1947*

| Act | House Vote | Senate Vote | Date of Enactment (or Veto) |
|---|---|---|---|
| 1st Tax Reduction bill (Provided "across the board" reduction in personal income taxes) | 220–99<br>Yeas: Reps. 183, Dems. 37<br>Nays: Reps. 1, Dems. 97, A.L. 1 | 48–28<br>Yeas: Reps. 42, Dems. 6<br>Nays: Reps. 2, Dems. 26 | Vetoed June 16<br>Veto upheld by house, June 17<br>Voting to override, 268; to sustain 137<br>Yeas: Reps. 233, Dems. 35<br>Nays: Reps. 2, Dems. 134, A.L. 1 |
| 2nd Tax Reduction bill (Substantially same as first, with effective date changed to Jan. 1, 1948) | 302–112<br>Yeas: Reps. 233, Dems. 69<br>Nays: Reps. 2, Dems. 109, A.L. 1 | 60–32<br>Yeas: Reps. 48, Dems. 12<br>Nays: Reps. 2, Dems. 30 | Vetoed July 18<br>Veto overridden by house 299–108<br>Yeas: Reps. 236, Dems. 63<br>Nays: Reps. 2, Dems. 105, A.L. 1<br>Veto upheld by senate 57–36<br>Yeas: Reps. 47, Dems. 10<br>Nays: Reps. 3, Dems. 33 |
| Labor-Management Relations act (Taft-Hartley) (Aimed to check certain labour practices and reduce the danger of national paralysis strikes) | 320–79<br>Yeas: Reps. 217, Dems. 103<br>Nays: Reps. 12, Dems. 66, A.L. 1 | 54–17<br>Yeas: Reps. 37, Dems. 17<br>Nays: Reps. 2, Dems. 15 | Vetoed June 20<br>Overridden by house 331–83<br>Yeas: Reps. 225, Dems. 106<br>Nays: Reps. 11, Dems. 71, A.L. 1<br>Overridden by senate, June 23, 68–25<br>Yeas: Reps. 48, Dems. 20<br>Nays: Reps. 3, Dems. 22 |
| Portal-to-Portal Pay act<br>(Outlawed suits for back portal-to-portal pay) | 173–27 | Passed by voice vote | Signed May 14 |
| Rent control extension<br>(Extended rent controls from June 30, 1947, to Feb. 29, 1948, with many modifications) | 163–73 | Passed by voice vote | Signed June 30 |
| Greek-Turkish Aid bill<br>(Authorized $400,000,000 to assist Greece and Turkey) | 287–107<br>Yeas: Reps. 127, Dems. 160<br>Nays: Reps. 93, Dems. 13, A.L. 1 | 67–23<br>Yeas: Reps. 35, Dems. 32<br>Nays: Reps. 16, Dems. 7 | Signed May 22 |
| General Foreign Relief act<br>(Authorized $350,000,000 in aid to various foreign countries) | 288–86<br>Yeas: Reps. 150, Dems. 137, A.L. 1<br>Nays: Reps. 68, Dems. 18 | Passed by voice vote | Signed May 31 |
| Army-Navy Unification<br>(Provided for civilian secretary of defense, with supervision of the three service branches, each headed by a secretary without cabinet rank) | Passed by voice vote | Passed by voice vote | Signed July 26 |
| Terminal leave bonds<br>(Allowed World War II veterans to cash their five-year non-negotiable terminal leave bonds, beginning Sept. 1, 1947) | 386–0 | 85–0 | Signed July 26 |
| Presidential Succession act<br>(Placed speaker of the house first, and president pro tempore of the senate second in line of succession to the presidency, followed by secretary of state and other members of cabinet) | 365–11<br>Yeas: Reps. 222, Dems. 142, A.L. 1<br>Nays: Rep. 1, Dems. 10 | 50–35<br>All negative votes were Democrats | Signed July 18 |
| Two-term limit for presidency*<br>(If ratified by legislatures of three-fourths of the states within seven years, becomes part of constitution) | 285–121<br>Yeas: Reps. 238, Dems. 47<br>Nays: Dems. 120, A.L. 1 | 59–23<br>Yeas: Reps. 46, Dems. 13<br>Nays: Dems. 23 | |
| Peace treaty with Italy<br>(Provided for withdrawal of all U.S. forces of occupation 90 days after treaty became effective; treaties with three former Axis satellites—Hungary, Rûmania, Bulgaria—ratified by voice votes) | | 79–10<br>Yeas: Reps. 42, Dems. 37<br>Nays: Reps. 7, Dems. 3 | Instruments of ratification signed June 14 |
| Stop-gap foreign relief<br>(Provided authorization for a $597,000,000 aid program, pending approval of the long-range European Recovery program) | 313–82<br>Yeas: Reps. 161, Dems. 152<br>Nays: Reps. 70, Dems. 11, A.L. 1 | Passed by voice vote | Signed Dec. 17 |
| Stop-gap inflation bill<br>(Called for extensions of export and transportation controls; granted authority for the president to limit or prohibit, until Jan. 31, 1948, use of grain in distilleries, authorized voluntary agreements on allocation of scarce commodities and on regulation of commodity speculation) | 281–73<br>Yeas: Reps. 178, Dems. 102, A.L. 1<br>Nays: Reps. 29, Dems. 44 | 77–10<br>Yeas: Reps. 45, Dems. 32<br>Nays: Reps. 3, Dems. 7 | Sent to president Dec. 19, the last day of the Special Session |
| Inter-American Treaty of Reciprocal Assistance | | 72–1<br>Nay: Rep. 1 | Ratified Dec. 8 |

*As of Feb. 1948, the following 18 states had ratified the proposed amendment: California, Colorado, Connecticut, Delaware, Illinois, Iowa, Kansas, Maine, Michigan, Missouri, Nebraska, New Hampshire, New Jersey, Ohio, Oregon, Pennsylvania, Vermont and Wisconsin.

GRAVE RECEPTION of Pres. Truman's speech of March 12, 1947, outlining the U.S. plan to aid Greece and Turkey in combating communism. Left to right, top: Sen. C. W. Brooks, Sen. A. Wiley and C. B. Henderson, an RFC director; bottom: Sen. Tom Connally and Sen. W. H. White

ministration that the president and the majorities in congress were of opposite parties. The Republican victory in the 1946 elections brought changes in the presiding officers of congress and the chairmanship of the standing committees (which had been reduced from 33 to 15 in the senate and from 48 to 19 in the house). Joseph W. Martin, Jr., of Massachusetts replaced Sam Rayburn of Texas as speaker of the house, and Arthur H. Vandenberg of Michigan became president pro tem. of the senate and succeeded Tom Connally of Texas as chairman of the foreign relations committee. Robert A. Taft, regarded as the most influential man in the senate and a prominent candidate for the presidential nomination in 1948, became the chairman of the key committee on policy.

The Republicans came into power pledged to two major measures: tax reduction and effective labour legislation to replace the Wagner act of 1935. They had insisted in their campaign on reductions in income taxes ranging from 10% to 30%, and the first bill introduced into the house made such provisions. It was passed in June by a vote of 220 to 99, the senate concurring by 48 to 28. Both President Truman and Secretary of the Treasury John W. Snyder insisted that the anticipated surplus in the treasury should be used for the reduction of the debt, and warned that, in view of the financial aid which must be furnished to the distressed countries of Europe, it would be unwise to reduce taxes. On June 16, therefore, the president vetoed the bill, despite the fact that the veto of a tax bill was a most unusual thing. The house failed by 2 votes (268 to 137) to muster the two-thirds majority to override the veto, and the first project of the Republicans was killed.

They were more successful, however, in the second. There had been a growing feeling, strengthened by the unprecedented wave of strikes in 1946 and the defiance of the government by John L. Lewis, that the Wagner act was overweighted in favour of labour, and on this feeling the Republicans capitalized in writing the Taft-Hartley bill of 1947. President Truman warned against the passage of any "vindictive law" against labour, with a clear indication that he would veto such a law. But the Republican leaders paid little attention to his counsel. The Taft-Hartley bill, passed by votes of 320 to 79 in the house and 54 to 17 in the senate, contained drastic curbs on the privileges of labour. It forbade the closed shop and the secondary boycott, gave the employer the same right as the union to appeal to the National Labor Relations board, prescribed a cooling-off period before a strike could begin, authorized injunction proceedings in certain cases and generally held labour responsible for complying with the rules and regulations which business had to observe in regard to its financial operations. President Truman vetoed the bill, but his veto was overridden in both houses of congress.

Other measures of the session, which ended on July 26, were the appropriation of $34,500,000,000 to run the government for the ensuing year; the ratification of the peace treaties with Italy, Hungary, Rumania and Bulgaria; a constitutional amendment limiting the presidency to two terms; a law fixing the presidential succession (the speaker of the house and then the president pro tem of the senate); a small appropriation ($12,000,000) for the continuance of the "Voice of America"; a $400,000,000 appropriation for combating communistic influence in Greece and Turkey; and an act merging the armed forces into a single department of national defense, with separate secretaries (noncabinet members) for army, navy and air. The most important matters left unsettled were the Marshall plan for European recovery, universal military training, health and housing legislation, flood control, and the (Stratton) bill for the admission of displaced persons.

On Oct. 23 President Truman called congress together for Nov. 17, in the first extra session after 1939: (1) to provide immediate relief for France, Italy and Austria, whose resources would not tide them over the winter, and (2) to curb the rising price index. As its final act before adjournment on Dec. 19, congress voted $540,000,000 "stop-gap" aid for the three European countries plus China, and on the same day sent to the president an anti-inflation bill which he was expected to sign, although it fell short of granting him the powers he had asked.

**The Budget.**—On Jan. 10, 1947, the president sent to congress his budget message for the year 1948, estimating expenditures at $37,500,000,000, of which national defense and veterans' benefits comprised approximately one-half. In mid-August the budget went into the black for the first time after 1930, showing a surplus of $184,000,000. The national debt had been reduced from $279,000,000,000 in 1946 to $259,000,000,000. The estimated income for the ensuing year was $37,700,000,000. The administration, backed by the Democratic minority in congress, favoured the devotion of such surplus as might accrue, after furnishing aid to the European countries, to a further reduction of the debt, while the Republicans argued that the president's "rock-bottom" estimate of expenses could be reduced by $4,000,000,000 to $5,000,000,000 and that a lowering of taxes would release funds for investment and provide a consequent stimulus to increased production. As mentioned above, the president vetoed the tax reduction bill; but the Republican leaders, prophesying a surplus of several billions for the next fiscal year, had ready in December a (Knutson) bill, calling for tax reductions of more than $5,000,000,000, for introduction into the second session of the 80th congress beginning Jan. 6, 1948. (*See* also TAXATION.)

In May of 1947 the nation was producing at an annual rate of $210,000,000,000, and the current rate of annual income was $177,000,000,000, as against $168,000,000,000 in 1946. On the whole the financial situation of the country seemed to justify the optimism of the president's midsummer economic report. Profits were at the highest level in history. The average per capita income was $1,060 compared with $479 in 1939, and five times as much money was being paid in taxes as in the earlier year. Weekly earnings in the manufacturing industries were 70% higher than in 1941, while living costs had increased by approximately 50%. There were approximately 58,000,000 employed workers. But there were two alarming factors in the situation. First, prices were mounting at a rate which defied any curbs that either the government or voluntary efforts could impose; and second, exports were mounting to more than $1,000,000,000 a month as against imports of scarcely more than half that figure—an imbalance which could be remedied only by the restoration of normal exporting power in foreign countries and the willingness of the U.S., in spite of the advocates of prohibitive tariffs, to take the products of those countries on equitable terms.

**Agriculture.**—In spite of heavy spring rains and midsummer droughts which cut down the corn harvest to the smallest after 1936, the total crop production of the country in 1947 was the fourth largest on record, being surpassed only in the years 1942, 1944, and 1946. The final estimate (Dec. 1947) was 2,400,952,000 bu. of corn (26% less than the 1946 yield) and 1,364,917,000 bu. of wheat. The farm population of 27,305,000 represented slightly less than one-fifth of the total population, and the farmers' profits were at an all-time peak. Farm income for the year 1947 was estimated (Dec. 20) at $18,000,000,000, or 20% above the figure for 1946 and 400% above that of 1940. Bank deposits in 20 leading farm states were 5% higher than a year earlier. But fewer than one-third of the 6,000,000 farms produced more than two-thirds of the crops, by virtue of their superior equipment in machinery, electric power and scientific fertilization. The total farm assets were reckoned at about $90,000,000,000, or more than double the figure of a decade earlier. Yet only about one-half the farm homes had electric light, one in four had running water, one in six had bathrooms, and fewer still had central heating. Fruits, vegetables and dairy products maintained the high levels of the previous year, and while livestock declined from the peak figures of the war years, the supply of meat was sufficient to enable the civilian population to increase their per capita consumption to about 150 lb. a year, as compared with 125 lb. in the prewar period. In the same period only 2.6% of the national food supply went into exports; but during the war the needs of the armed forces and the demands of lend-lease and U.N.R.R.A. (the United Nations Relief and Rehabilitation administration) took up to 17% and 8.8% respectively of the country's farm products. With the termination of these agencies, food exports reverted to normal levels.

However, the fluctuations in prices and markets occasioned in 1946 by the vacillating policy of lifting, restoring and finally removing price controls were succeeded in 1947 by a continuous rise in farm prices. Based on 100 for the year 1939, the index of all farm prices reached 275. The protests of housewives against the exorbitant cost of meat, eggs and butter did not avail to halt the upward swing. Farmers were solidly opposed to any government action to reduce prices or to the cancellation of farm subsidies. In view of the need of food supplies to tide the hungry people of Europe over the winter, the administration in the late autumn recommended a voluntary conservation program. People should cut meat from their diet on Tuesdays and eggs and poultry on Thursdays. Hotels and restaurants were asked not to serve bread unless it was called for by the customers. But sumptuary regulation, especially in time of peace, is difficult to enforce. There was a widespread suspicion that products were being withheld from the market in the hope of still further rises in price.

One farm was said to have more than 600,000 bu. of wheat stored in warehouses; and a poll of late Nov. 1947 reported

"UMTEES" at mess in the experimental camp for 18-year-olds maintained by the U.S. army at Fort Knox, Ky., as a testing ground for a possible universal military training (UMT) program

45% of the farmers consulted as expecting prices to rise still further in 1948. On Dec. 18 the senate adopted unanimously a resolution authorizing Secretary of Agriculture Clinton P. Anderson to make public the names of all speculators in grain and other commodities.

**Industry.**—On Aug. 21 President Truman issued a report on the industrial situation, based on the figures submitted by his council of economic advisers. It was a highly optimistic report. The U.S. had more than half the industrial capacity, the gold, and the shipping of the world. Production was humming, jobs were plentiful and incomes were high. Corporation profits after the deduction of taxes were $17,000,000,000 for the first half of the year, as compared with $12,000,000,000 in the same period of 1946. Exports in midsummer were running at the rate of about $15,000,000,000 a year, which was more than five times the prewar figure. They comprised 6.5% of the gross production of the country, and the chief exported commodities in order of value were machinery, grain, textiles, automobiles and iron and steel. Imports, however, the chief of which were coffee, sugar, rubber, wool and paper, failed by half to keep pace with exports, and the serious question was raised as to how foreign countries would be able to meet their unfavourable balances of trade. Obviously, they could not borrow themselves out of debt or expect the U.S. to support them like poor relatives. The only remedy lay in the recovery of their own volume of production and the readiness of the U.S. to take their goods without prohibitive tariff restrictions.

A plan to help Europe help itself out of its economic plight was proposed by Secretary of State George C. Marshall in a speech at Harvard on June 5, 1947. The "Marshall plan," later named the European Recovery program (E.R.P.), envisaged the expenditure of a large sum of money, perhaps from $16,000,000,000 to $20,000,000,000 over a period of four years, to encourage the rebuilding by their own people of the shattered industries and finances of the European states. It was a kind of pump-priming for foreign recovery. Delegates of 16 nations meeting at Paris made a careful study of Europe's needs. In the U.S., committees headed by Secretary of the Interior Julius A. Krug, Secretary of Commerce W. Averell Harriman, and the government economist Edwin G. Nourse, prepared reports on the capacity of the country to undertake the program proposed and on its effects on U.S. industrial and financial prosperity. On Dec. 18 William L. Clayton, former under secretary of state for economic affairs, declared that by devoting only from 2% to 2½% of the gross national production to the implementation of the Marshall plan over the next four years, the United States could restore the economy of western Europe and forestall the danger of communist domination there, without prejudice to its own high standard of living.

**Labour.**—The most important event of the year 1947 in the realm of labour was the passage over the president's veto of the Taft-Hartley Labor-Management Relations bill (see *Congress*). Although by the end of the year enough time had not yet passed after the act became effective (Aug. 23) to test the claims of either its champions or its opponents, there seemed to be few indications that management intended to use the law to deprive labour of its fundamental rights of unionization, collective bargaining, and the strike (except in certain industries "affected with the public welfare"); nor had organized labour staged such a revolt as might have been expected against an act which its leaders characterized as "infamous." Indeed, as contrasted with the turbulent year preceding, when 113,000,000 man-days were lost through strikes, 1947 was remarkably free from labour strife. For the first 3 months of the year the man-days lost were less than 10% of the 58,000,000 man-days lost in the same period of 1946. However, in April there came threats of strikes in the coal, telephone, steel and automotive industries. The substantial wage increases of 1946, averaging 18.5 cents an hour, did not satisfy the workers, who were moved to demand another round of wage raises both by the rising cost of living and the mounting profits of the corporations. Yet there were no such sinister incidents as John L. Lewis' defiance of the government the year before. On the whole, Lewis had gained more for his United Mine Workers than any other labour leader had done for his union, their wages having risen from an average of $30.86 in 1941 to more than double that figure in 1947.

On March 25 at Centralia, Ill., 111 men were killed in the worst mine accident that had occurred in 20 years. Mr. Lewis, asserting gross negligence on the part of the government, whose management of the mines was about to terminate, demanded that all but two of the soft coal mines of the country be closed until their safety could be certified, and proclaimed a "mourning" strike of a week in memory of the Centralia victims.

The most controversial part of the Taft-Hartley act proved to be section 9(h), which required officers of the unions to file affidavits disclaiming any connection with communism. The question was whether the regulation applied to the heads of the unions. The C.I.O. was bitterly opposed to the requirement;

but William Green of the A.F. of L., who was hardly more favourable to the act as a whole, was inclined to accept section 9(h). Whereupon Lewis withdrew his 600,000 United Mine Workers from the A.F. of L., which they had rejoined a few months before, and sent Green the curt message "We disaffiliate."

**Housing.**—Adequate housing both for the returning veterans and for the general public remained a major problem throughout the year. There was a vast backlog demand for housing, created during the depression and later during World War II, when building was virtually stopped. The Wagner-Ellinger-Taft bill of 1945, a plan for the construction of 12,000,000 to 15,000,000 new housing units over a period of 10 years, had passed the senate in 1946, but had died in the house committee. In March 1947, with 20,000,000 persons living in crowded and substandard quarters, congress again took up the question. The construction of at least 1,000,000 housing units a year was needed. Approximately 40% of the G.I.s were living "doubled up" with relatives or friends, and 25% of the married veterans were vainly seeking homes. From 400,000 to 500,000 new families were being added to the population annually. Programs for public construction of big housing projects for families of low income were opposed by realty interests as a threat to private enterprise. The construction of small houses within the price limits of the average family was frustrated by the great increase in labour wages and in building materials. Lumber had advanced 100% from 1941 prices; hardware was up 114%; many items (like window shades) were 300% more expensive. From Jan. to April 1947 only about 60,000 new houses were built. Furthermore, after the removal of war controls from building materials, not only did the prices of the materials skyrocket, but the supply tended to be absorbed by the demand for the construction of new factories, stores, banks and other commercial buildings. Old houses, many of them lacking heating, plumbing and running water, were scarce at twice their prewar prices; and less than one-fifth of the new houses built could be afforded by families with an income of $2,000 a year. Before the war, President Franklin D. Roosevelt had deplored the fact that one-third of the people of the United States were "ill-housed." More than two years after the end of the war little had been done to remedy that situation. (*See* also BUILDING AND CONSTRUCTION INDUSTRY; HOUSING.)

**The Armed Forces.**—A plan, which had been under discussion ever since the Spanish-American war, was consummated in 1947: namely the unification of the armed forces of the country. It had been generally favoured by the army, but opposed by the navy on the ground that the larger arm of the service would tend to absorb or overshadow the navy's functions. In July, however, congress passed and the president signed the unification bill. It provided for a (civilian) secretary of national defense with a seat in the cabinet, and separate noncabinet secretaries for the army, the navy and the air force. James Forrestal, then secretary of the navy, was appointed secretary of national defense, while the three minor posts were given to Kenneth C. Royal (army), J. L. Sullivan (navy), and W. S. Symington (air force). The act also created new agencies: a national security council, a resources board, a munitions board, a research board, and a joint board of chiefs of staff.

The draft, established by the Selective Service act of 1940, ended on March 31, 1947, and was not extended by the president. But the voluntary enlistments relied upon failed to supply the 30,000 men per month wanted by the army and the 12,500 sought by the navy, to keep the former's strength at 1,070,000 and the latter's at 570,000 (including 98,000 marines) for the year 1948. Universal military training for young men from 18 to 20 years of age, with 6 months in camp and 6 months in school or college, was favoured by the army as a better recruiting agency than the draft.

The strong desire of the soldiers of the U.S. to get back home after the cessation of hostilities and of their families to have them back resulted in some deterioration in the quality of the forces which had to be left as garrisons in Europe and Asia. Younger and less experienced officers took the place of those familiar with the conditions abroad, and there were complaints of irregular conduct, such as black-market operations, on the part of the soldiers. There were altogether more than 300,000 men of the U.S. armed forces in garrison duty abroad, about 150,000 in Germany and the same number in Japan, with smaller forces elsewhere. Since the announced purpose was to maintain U.S. garrisons abroad until a satisfactory peace was made (as expressed in former Secretary of State James F. Byrnes' Stuttgart speech of Sept. 1946), and Secretary Marshall in his first press conference had declared the U.S. would "avoid unilateral disarmament," it was of great importance to maintain not only the numbers but also the quality of the armed forces. The U.S. planned to spend 34% of its 1948 budget on military items, as against 26% set aside by Great Britain and 19% by the U.S.S.R. Only China, with 80%, planned to spend a larger share of its budget on its armed forces than the U.S. The total expenses for the world's armies of 19,000,000 men were estimated at $27,000,000,000. U.S. naval tonnage of 3,820,000 exceeded the combined tonnage of the rest of the world by approximately 1,000,000 tons, and compared with Great Britain's 1,531,600 tons, the U.S.S.R.'s 445,000 tons, and France's 250,000 tons. (*See* ARMIES OF THE WORLD; NAVIES OF THE WORLD.)

A defense problem of the first importance was presented by the condition of the U.S. air force. At the peak of the wartime effort the army was operating about 80,000 planes, and during the year 1944 U.S. factories produced the enormous number of 96,000 planes. By 1947, the rapid advance in engineering had rendered obsolete many types of planes rated as first class three or four years before. For example, the navy's new jet and rocket powered "Skyrocket," which was being tested at the end of the year, was expected to travel at a speed of 1500 to 1700 mi. an hour. The huge B-29 bombers, which did such effective work against Japan, had already been superseded by the B-36's, the largest land-based bombers in the world, powered by six 28-cylinder engines, and said to be capable of a nonstop round trip flight to the most remote spot on the earth. The commanding general of the air force, Gen. Carl Spaatz, declared in 1947 that the U.S. had in use only about 5,000 military planes of highest quality, whereas it needed at least 7,000 in active operation, besides a considerable reserve force. Shortly after the war, the army air force developed an expansion program providing for an outlay of $270,000,000 a year but congress, intent on cutting government expense all along the line, granted less than the $147,000,000 which President Truman had asked for the year 1947–1948. (*See* also AVIATION, MILITARY.)

Little progress was made during 1947 on the vexing question of the control of atomic energy. On Dec. 30, 1946, the United Nations Atomic Energy commission adopted the Baruch plan (with the U.S.S.R. and Poland dissenting) and sent it to the Security council. Its main features were the creation of an international Atomic Development authority (the A.D.A.), with a monopoly of the production of fissionable materials and a vetoless power of inspection and punishment for the infraction of the A.D.A.'s regulations. When assured of the promise of adequate control, but not before, the U.S. would consent to surrender its stockpile of atomic bombs. The soviet proposal, put forth by Andrei A. Gromyko, reversed the Baruch plan. The U.S. must first destroy its bombs and then the machinery would be set up for the international control of atomic energy. The controlling authority, Gromyko insisted, should be vested not in the A.D.A. but in the Security council, where a Russian veto would be effective. (*See* also ATOMIC ENERGY.)

**Latin-American Relations.**—The outstanding event of the year in Latin-American relations was the meeting of the foreign ministers of all the American republics except Nicaragua at Rio de Janeiro, Brazil, in August to conclude a pact for hemispheric defense. The Rio de Janeiro pact, known officially as the "Inter-American Treaty of Reciprocal Assistance," was to supplement and implement the Act of Chapultepec drafted at Mexico City in March 1945. On Sept. 2, 1947, all the American nations except Nicaragua and Ecuador signed the treaty (and it was provided that those states and Canada could sign later, if they should desire). It provided that all should assist in repelling an armed attack from outside upon any of them, and advocated the settlement of all disputes between them by the use of "procedures in force in the inter-American system." It bound the nations not to resort to war in violation of the provisions of the charter of the United Nations. Secretary of State Marshall and Senators Vandenberg and Connally were cordially received at Rio, and contributed much to the drafting of the pact. "We are building upon mutual trust," said the secretary; "this is a true partnership, which represents the greatest advance ever made in the business of collective peace." The senate ratified the pact in December. At the same time an economic commission for Latin-America was recommended by a subcommittee of the United Nations at Lake Success "to promote the development of industry, agriculture, transportation and communications in the undeveloped areas" of Latin-America. A heartening aspect of these procedures was the adherence of Argentina, with whom U.S. relations had been strained for some years. (*See* also INTER-AMERICAN DEFENSE CONFERENCE.)

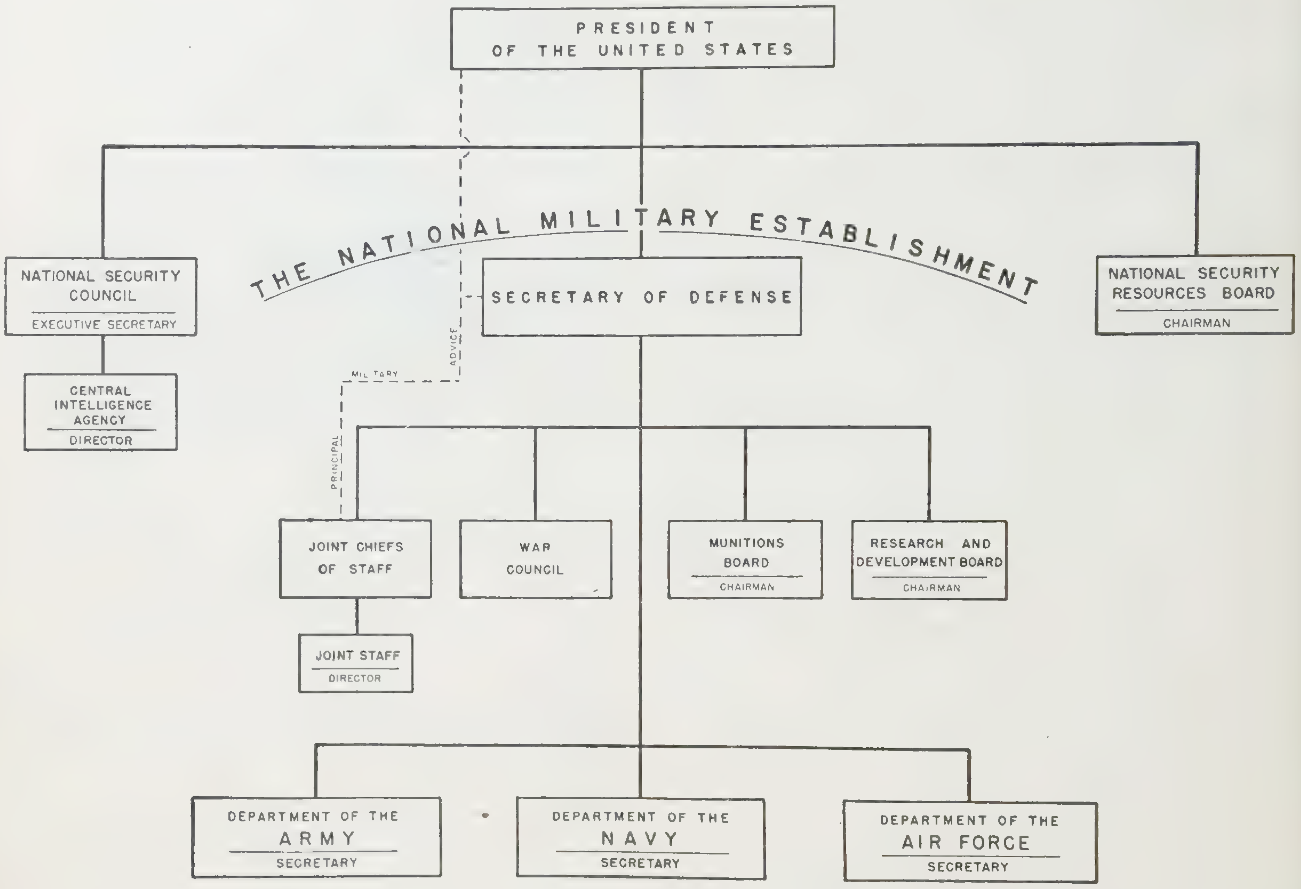
A ninth Pan-American congress was planned to be held at Bogota, Colombia, in Jan. 1948.

**International Affairs.**—Aside from the encouraging events noted in relations between the U.S. and other American countries, there was little progress made during the year 1947 in solving the persistent problem of the world's unrest. The fate of nearly 400,000,000 persons in Europe (exclusive of the U.S.S.R.), belonging to 29 governments and speaking 44 languages, depended on the restoration of political order and economic security. The 17 countries occupied by the nazis had been "liberated" only to fall a prey to factional strife within or the threat of domination by the expanding soviet power. The central problem was the formulation of peace treaties with Germany, Austria, Italy and the Balkan satellite states, a task which was entrusted to the foreign ministers of the great powers (the United States, Great Britain, Russia and later France) by the Potsdam agreement of Aug. 1945. Time and again the foreign ministers met, at Moscow, London, Paris and New York, but aside from the treaties with the minor states, concluded in Dec. 1946, nothing was accomplished. Secretary Byrnes made seven trips to foreign capitals, travelling 70,000 mi. and spending three-fifths of his 18 months of tenure abroad. General George C. Marshall, chief of staff of the army, returned from a special mission in China in January, to succeed Secretary Byrnes. In March he left for Moscow to attend the ninth meeting of the foreign ministers, which sat for 46 days in complete deadlock. On his return he warned the country that the patient (Germany) was sinking while the doctors deliberated. At Potsdam the heads of state (Truman, Clement R. Attlee and Joseph Stalin) had pledged a united Germany; but the country remained divided into four zones under the military government of the four great powers. The Russians in the eastern zone were accused of setting up a communistic puppet State and of draining the resources of the country in reparations; while they accused the three other occupying powers of attempting to convert western Germany into a separate hostile state. On Nov. 25, 1947, the foreign ministers met again, at London, only to have the conference terminated after a brief session filled with bitter denunciation of the Western democracies by Vyacheslav Molotov, the soviet foreign minister, and General Marshall's patient but firm rebuttal of the extravagant abuse. As the year closed the rift between the Soviet government and the Western powers seemed wider than ever. (*See* also FOREIGN MINISTERS' CONFERENCES.)

**"SIFTING 'EM OUT,"** a Roche cartoon which appeared in the *Buffalo Courier Express* following Pres. Truman's order of March 22, 1947, banning members of or sympathizers with communist parties from employment in the executive branch of the government

Two propositions made by the U.S. government in 1947 added to the tension between Washington and Moscow. The first was the announcement by President Truman on March 12 of a plan (the so-called "Truman doctrine") to "contain" the expansion of communism in southeastern Europe by furnishing financial and military aid to Greece and Turkey. The regimes which it was proposed to support in those countries were not democracies; and the plan was not only resented in Moscow, but was opposed by many Americans as an encouragement of reactionary governments and a meddling in the turbid affairs of Greece which would prolong factional strife and sacrifice American lives. However, for better or worse, the $400,000,000 was voted by congress. The second provocative proposition was the Marshall plan or European Recovery program which recommended generous U.S. aid to the states of Western Europe for the recovery of their economic stability. The initiative, insisted Marshall, must come from the European countries themselves. They must show a convincing readiness to speed up their production, straighten out their finances, and co-operate in sound methods of trade and commerce. On July 3 representatives of 16 European nations met at Paris and, after a session of 12 weeks, submitted a 25,000 word report on their resources and their needs. On the basis of the reports of three committees who were working in the United States on estimates of the

ORGANIZATION FOR NATIONAL SECURITY



country's capacity to furnish extensive aid to Europe and on the effect of such aid on the U.S. standard of living, President Truman sent a long message to congress a few hours before its adjournment on Dec. 19. He asked for a provision of $15,000,000,000 to $17,000,000,000 over a period of four years, with an initial grant of $6,800,000,000 for the first 15 months to July 1, 1949. The administration of the fund, he suggested, should be vested in a single director with a salary of $20,000, a deputy at $17,000, and a roving official with ambassadorial rank and a salary of $25,000, to co-ordinate the work in the various countries receiving aid. He sent in this message before the legislators dispersed for the Christmas recess, in order that they might have time to study the plan before the opening of the second session of the 80th congress on Jan. 6, 1948. He hoped that congress would act on the plan by April of the new year. But it was certain that the measure would produce heated debates in congress, both as to the size of the sum asked for and as to its administration. Russia and its satellites protested that they would make every effort to sabotage the Marshall plan, declaring that it was nothing less than a scheme of the U.S. to impose an economic dictatorship on the countries of western Europe. (*See* also EUROPEAN RECOVERY PROGRAM.)

**Education.**—*See* the articles EDUCATION; UNIVERSITIES AND COLLEGES.

**Foreign Trade.**—*See* the articles BUSINESS REVIEW; EXPORT-IMPORT BANK OF WASHINGTON; INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT; INTERNATIONAL MONETARY FUND; INTERNATIONAL TRADE; LEND-LEASE; TARIFFS.

**Communications.**—For statistics, *see* the articles AVIATION, CIVIL; CANALS AND INLAND WATERWAYS; ELECTRIC TRANSPORTATION; MOTOR TRANSPORTATION; POST OFFICE; RADIO; RAILROADS; ROADS AND HIGHWAYS; SHIPBUILDING; SHIPPING, MERCHANT MARINE; TELEGRAPHY; TELEPHONE; TELEVISION.

**Agriculture.**—Statistical material pertaining to this subject may be found under AGRICULTURE; FOOD SUPPLY OF THE WORLD; also in the articles on separate crops and agricultural products.

**Mineral Production.**—*See* the articles on individual minerals; also MINERAL AND METAL PRODUCTION AND PRICES; STRATEGIC MINERAL SUPPLIES.

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**United States-Canadian War Committees:** *see* Permanent Joint Board on Defense.

**United States Government Departments and Bureaus:** *see* Government Departments and Bureaus. Also *see* under specific name, *i.e.*, Coast Guard, U.S., etc.

**United States Housing Authority:** *see* Housing.

## U.S. Investments Abroad.

The value of U.S. investments in foreign countries on June 30, 1947,[1] was at the unprecedented peak of $26,700,000,000, following a net outflow of $5,800,000,000 of loans and investments in the first 6 months of the year, practically all U.S. government capital. The major portion of the total value of investments, $16,000,000,000, was private capital and the remainder of $10,700,000,000 was government. These were $400,000,000 and $5,400,000,000 higher, respectively, than on Dec. 31, 1946. The major portion of the outflow from the U.S., both private and government, was in the form of long-term capital, although the outflow of private short-term capital (assets with an original maturity of one year or less) exceeded $200,000,000 during the first half of 1947. Increased U.S. investments of various types in foreign countries raised the net creditor position of the U.S. to $9,300,000,000 on June 30, 1947 (*see* also Foreign Investments in the United States).

The U.S. government invested $2,745,000,000 in the International Monetary fund and $317,000,000 in the International bank in the 6 months under discussion. The United Kingdom borrowed an additional $1,450,000,000 of its loan of $3,750,000,000, while Export-Import bank loans, credit sales of surplus property and surplus vessels and other long-term loans to foreigners aggregated an additional $750,000,000. In the third quarter of 1947 the U.S. government advanced an additional $1,384,000,000 of long-term credits to foreigners.

Increased foreign aid and loans from the U.S. government to foreign governments were imminent at the end of 1947 in the so-called "Marshall plan." (*See* European Recovery Program.)

The foreign shortage of U.S. dollars with which to purchase vitally needed foodstuffs and commodities for reconstruction and development became particularly acute in the fall of 1947 as most of the relief planned and credits granted to foreigners for these purposes approached exhaustion. On Oct. 13, the Export-Import bank liberalized the terms and purposes of an earlier credit to France whereby that country was able to purchase industrial raw materials, such as coal, with funds originally loaned for the purchase of items such as machinery. A month later, the same bank granted a $300,000,000 credit to Canada to enable that country to continue making purchases of essential U.S. equipment and raw materials.

The movement of private U.S. capital to foreign countries was of a mixed character. The U.S. department of commerce reported a very definite movement to foreign countries of direct investment capital in the first half of the year, while in contrast, the repatriation of capital formerly loaned to foreigners continued.

The outflow of direct investment capital exceeded $200,000,000 compared with a return flow from abroad of about $25,000,000 during 1946.

Among the operations of U.S.-controlled enterprises in foreign countries (direct investments), the intensive quest for oil-bearing land and the development of oil resources received most attention during 1947. Practically every large U.S. petroleum company was reported to be making sizable capital investments abroad, of which the most spectacular was the program announced by the Standard Oil company (New Jersey) and its subsidiaries. The expansion program of this and of other enterprises was based on estimates by some economists that by 1951 the oil industry could expect a world demand of nearly 3,750,000,000 bbl. of crude oil and refined products annually. This potential market, if attained, would represent a 35% increase over world consumption in 1945, when military demand was at its peak. Most of the new sources of petroleum, mainly in the middle east and Venezuela, were expected to direct their products principally to Europe and the far east.

The Standard Oil group planned to spend $100,000,000 to construct a refinery, pipe line, tanker terminal and town in Venezuela; $140,000,000 to erect a large refinery in England, an unstated amount to restore refining facilities in France, and with other U.S. companies perhaps several hundred million dollars for two pipe lines running from the Persian gulf to the Mediterranean about 1,000 mi. away.

Other well known petroleum companies were making or planning additional foreign investments. The Gulf Oil corporation announced that it had borrowed $100,000,000 presumably to fulfil its intention of extensive exploration work in the United States, Canada, Venezuela, Colombia, Nicaragua, Cuba, Denmark and the Bahamas, and to drill new wells in the Persian gulf area. It was also reported that a number of smaller U.S. companies had affiliated and raised about $100,000,000 for the purpose of operating in the middle east and elsewhere. The press noted that the state department would aid U.S. companies interested in obtaining oil concessions in this area.

The Sinclair Oil corporation was drilling a well on its concession of 335,000 sq.mi. in Ethiopia. The Phillips Petroleum company was expected to spend between $10,000,000 and $15,000,000 in Venezuela in 1947. The California-Texas corporation planned to build an $18,000,000 refinery in Holland. A subsidiary of the Standard-Vacuum Oil Company, Inc., joined with Australian and British companies in a search for both oil and gas on the Australian continent. Bolivia, which had excluded foreign oil companies from that country since 1936, granted a U.S. company a concession to drill 50 wells in one field.

Other U.S. industries were also actively engaged in developing new facilities and in expanding existing investments in foreign countries, particularly in the production of iron ore, steel, copper, newsprint, wood pulp, gold, automobiles, agricultural machinery, lead, and hotel construction.

Gradual depletion of high-grade iron ore reserves in the U.S.

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[1] Including investments in the International Bank for Reconstruction and Development and the International Monetary fund.

*Estimated Value of United States Investments Abroad, by Type and Geographic Distribution, June 30, 1947, and December 31, 1946*

(In millions of dollars)

| Type of investment | Canada and Newfoundland | Latin America | Europe | Africa Asia Oceania | June 30, 1947 | Dec. 31, 1946 |
|---|---|---|---|---|---|---|
| Private: | | | | | | |
| Long-term: | | | | | | |
| Direct | 2,610 | 3,230 | 2,065 | 920 | 8,825 | 8,500 |
| Foreign dollar bonds | 1,105 | 195 | 95 | 125 | 1,520 | 1,535 |
| Foreign currency securities | 1,400 | 165 | 1,030 | 155 | 2,750 | 2,900 |
| Estates and trusts | 25 | 10 | 160 | 15 | 210 | 210 |
| Miscellaneous | 135 | 185 | 890 | 75 | 1,285 | 1,235 |
| Long-term, total | 5,275 | 3,785 | 4,240 | 1,290 | 14,590 | 14,380 |
| Short-term | 225 | 610 | 400 | 210 | 1,445 | 1,225 |
| Private, total | 5,500 | 4,395 | 4,640 | 1,500 | 16,035 | 15,605 |
| Government: | | | | | | |
| Long-term | 5 | 220 | 5,765 | 580 | 6,570 | 4,390 |
| Short-term | — | 310 | 170 | 240 | 720 | 565 |
| Government, total | 5 | 530 | 5,935 | 820 | *10,676 | *5,278 |
| Total | 5,505 | 4,925 | 10,575 | 2,320 | *26,711 | *20,883 |

*Includes investments by the U. S. government of $3,386,000,000 on June 30, 1947, and $323,000,000 on Dec. 31, 1946, in the International Bank for Reconstruction and Development and in the International Monetary fund. These are not included in the data for the areas noted.

Source: Estimates prepared by the United States treasury department, commerce department, and the author.

had turned the attention of several U.S. companies to foreign iron ore deposits. The Bethlehem Steel corporation allocated $37,500,000 for the development of iron ore properties and facilities in Latin America. The M. A. Hanna company was awarded a 50-year contract for the exploration of iron ore deposits in the Brazilian federal district of Amapa on the northernmost coast. This area was estimated to hold 160,000,000 tons of iron ore and would require the construction of a railroad into the district. The same company together with a Canadian enterprise was reported to have made some investments in the exploration and development of the vast undeveloped tracts of rich iron ore astride the Labrador-Canada boundary. In Egypt, the establishment of that country's first steel plant was forecast by a reported $60,000,000 commitment by a U.S. financial group.

The Anaconda Copper Mining company was reported ready to invest up to $150,000,000 more in copper mines in Chile. A group of eastern and central U.S. publishers agreed during the year to construct a newsprint mill in Canada costing $65,000,000 or more. In Mexico, an attempt was made to meet the newsprint shortage through the use of local vegetation by erecting a pulp factory with U.S. and Mexican capital. The plant was to use bamboo, banana stalks and other Mexican vegetation as raw materials.

In South Africa, the American-Anglo-Transvaal corporation, formed in 1946 by a United States-United Kingdom financial group, became actively interested in gold mining during 1947 and was expected to exercise great influence over the industry in that country. A U.S. tire manufacturing company opened a new plant in the Union of South Africa and another competitor announced it would also open a new tire plant there. In Australia, $3,250,000 was to be spent on the extension of plants manufacturing Ford automobiles and $3,000,000 for General Motors cars; International Harvester Ltd. planned to expand its agricultural machinery works with an additional investment of $8,000,000.

Private U.S. capital was not unequivocally welcome in all countries, however, and at least two countries were added to the list of those imposing restrictions on importation of foreign capital. It was reported during April 1947 that Belgium had rejected the offer of a leading U.S. glass manufacturer to invest some $3,500,000 on the grounds that there was no room for an additional competitor in the industry. In July, the government of Mexico decreed that foreigners must obtain permission from the ministry of foreign affairs to invest their capital in that country and limited their share holdings in certain types of enterprises to 49% of the stock.

Private U.S. loan capital, as distinguished from equity capital (mainly direct investment), evidenced no particular desire during 1947 to share substantially in the dollar financing required for world reconstruction. A major exception to this situation was the U.S. subscription in July to practically all of the $250,000,000 of bonds offered for sale by the International Bank for Reconstruction and Development. Since the U.S. government's subscription to the bank's shares was well in excess of this sum, it was generally believed that holders of the bonds would suffer no loss in the event that the bank's debtors defaulted on their obligations. Nevertheless, during the last half of the year, this issue and all other foreign issues (except Canadian) offered in the U.S. during the preceding 12 months were quoted at less than offering prices, and in the case of Australian issues, considerably less. The Australian government, which had very successfully marketed 3 issues in the New York market, but found that a fourth and fifth had not sold so promptly, announced that there would be no further operations in that market before 1952.

Denmark's plans to convert its 6% obligations into a new dollar bond issue bearing a lower interest rate had to be abandoned because of the deterioration of the market in the United States for foreign bonds. Instead the credit was obtained from Swiss bankers.

During the latter half of 1947 a few small borrowers paid off their U.S. loans, and little progress was made toward the settlement of defaulted dollar bonds. The republic of Haiti and the Dominican Republic announced the redemption of their bonds payable in U.S. dollars.

The Italian government proposed a plan to resume partial service on Italian dollar bonds, service on which had been suspended since 1940. The terms of the Peruvian government's plan to resume service on its debt held in the U.S. and elsewhere appeared to have received unenthusiastic response from investors.

The U.S. government announced that U.S. holders of the dollar obligations of Germany and Japan could file claims until Sept. 2, 1947, against the properties of those countries in the U.S. seized by it.

(*See* also EXPORT-IMPORT BANK OF WASHINGTON; INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT; INTERNATIONAL MONETARY FUND; LEND LEASE.)

(M. AB.)

**United States Mint:** *see* COINAGE.

**United States Office of Education:** *see* EDUCATION; FEDERAL SECURITY AGENCY.

**United States of Indonesia:** *see* NETHERLANDS INDIES.

## Universities and Colleges.

The following eight pages carry a selected list of nationally or regionally accredited universities, colleges, junior colleges, and technical schools of college grade in the U.S. and Canada, with location, year founded, chief executive, enrolment, size of faculty, endowment and number of library volumes, for the academic year 1947–48.

The symbol * denotes 1946–47 data; || denotes data previous to 1946–47. (*See* also EDUCATION.)

| Institution and Location | Year Founded | Chief Executive | Full Time Students | Students under Veterans' Program | Faculty | Endowment | Library Volumes |
|---|---|---|---|---|---|---|---|
| A | | | | | | | |
| Acadia University, Wolfville, N.S., Can. | 1838 | F. W. Patterson | 879 | 333 | 65 | $ 1,105,364 | 87,000 |
| Adams State Col., Alamosa, Colo. | 1921 | Ira Richardson | 706 | 530 | 59 | — | 24,000 |
| Adelphi College, Garden City, N. Y. | 1896 | Paul D. Eddy | 2,173 | 1,032 | 125 | 50,000 | 42,138 |
| Agnes Scott College, Decatur, Ga. | 1889 | James R. McCain | 530 | 4 | 55 | 2,355,000 | 54,000 |
| Akron, University of, Akron, Ohio | 1870 | H. E. Simmons | 2,983 | 1,694 | 134 | 135,412 | 72,648 |
| Alabama, University of, University, Ala. | 1831 | Ralph E. Adams | 8,729 | 5,136 | 525 | 6,053,925 | 350,000 |
| Alabama A. and M. College, Normal, Ala. | 1875 | Joseph F. Drake | 835 | 365 | 53 | — | 12,236 |
| Alabama College, Montevallo, Ala. | 1896 | John T. Caldwell | 782 | 37 | 76 | 636,930 | 52,900 |
| Alabama Polytechnic Inst., Auburn, Ala. | 1872 | Ralph B. Draughon | 7,208 | 4,655 | 420 | 554,873 | 112,000 |
| Alabama State Tch. Col., Florence, Ala. | 1872 | J. A. Keller | 1,227 | 565 | 63 | — | 47,046 |
| Alabama State Tch. Col., Jacksonville, Ala. | 1883 | Houston Cole | 1,068 | 513 | 41 | — | 22,833 |
| Alabama State Tch. Col., Livingston, Ala. | 1835 | W. W. Hill | 406 | 171 | 32 | — | 24,470 |
| Alabama State Tch. Col., Montgomery, Ala. | 1874 | H. Councill Trenholm | 1,275 | 338 | 65 | — | 13,407 |
| Alabama State Tch. Col., Troy, Ala. | 1887 | C. B. Smith | 775 | 410 | 39 | — | 25,000 |
| Alaska, University of, College, Alaska | 1917 | Charles E. Bunnell | 293 | 172 | 37 | — | 20,000 |
| Albany State College, Albany, Ga. | 1903 | Aaron Brown | 655 | 87 | 38 | — | 12,700 |
| Alberta, Univ. of, Edmonton, Alta., Can. | 1906 | Robert Newton | 4,757 | 2,387 | 256 | 500,000 | 110,000 |
| Albertus Magnus Col., New Haven, Conn. | 1925 | Sister M. Irmina | 259 | 3 | 40 | 6,175 | 22,000 |
| Albion College, Albion, Mich. | 1835 | W. W. Whitehouse | 1,256 | 461 | 62 | 3,016,376 | 67,000 |
| Albright College, Reading, Pa. | 1856 | Harry V. Masters | 779 | 396 | 53 | 993,497 | 27,506 |
| Alcorn A. and M. College, Alcorn, Miss. | 1871 | William H. Pipes | 462 | 177 | 90 | — | 17,000 |
| Alfred University, Alfred, N.Y. | 1836 | J. E. Walters | 890 | 471 | 97 | 1,074,000 | 66,787 |
| Allegheny College, Meadville, Pa. | 1815 | Chester A. Darling | 1,045 | 430 | 72 | 2,200,000 | 125,000 |
| Allen University, Columbia, S.C | 1870 | Samuel R. Higgins | 889 | 212 | 40 | — | 13,203 |
| Alliance Col., Cambridge Springs, Pa. | 1912 | John J. Kolasa | 305 | 219 | 22 | 2,500,000 | 10,000 |
| Alma College, Alma, Mich. | 1886 | Dale D. Welch | 635 | 387 | 40 | 285,573 | 52,523 |
| Alverno College, Milwaukee, Wis. | 1936 | Mother M. Corona | 181 | — | 23 | — | 24,873 |
| Amarillo College (Jr.), Amarillo, Tex. | 1929 | A. M. Meyer | 640 | 229 | 42 | — | 11,000 |
| American Int. Col., Springfield, Mass. | 1885 | William Gellermann | 1,374 | 830 | 50 | — | 14,000 |
| American University, Washington, D.C. | 1893 | Paul F. Douglass | 1,703 | 1,101 | 180 | 829,707 | 115,038 |
| Amherst College, Amherst, Mass. | 1821 | Charles W. Cole | 1,166 | 570 | 101 | 13,383,666 | 263,636 |
| Anderson College, Anderson, Ind. | 1917 | John A. Morrison | 626 | 250 | 47 | 35,000 | 13,553 |
| Andrew College (Jr.), Cuthbert, Ga. | 1854 | S. C. Olliff | 95 | 1 | 12 | 300,000 | 5,000 |
| Antioch College, Yellow Springs, Ohio | 1852 | A. D. Henderson | 1,120 | 398 | 76 | 2,238,000 | 73,000 |
| Appalachian State Tch. Col., Boone, N.C. | 1903 | B. B. Dougherty | 1,005 | 402 | 51 | — | 36,300 |
| Aquinas College, Grand Rapids, Mich. | 1923 | Arthur F. Bukowski | 512 | 183 | 32 | 1,411,666 | 16,000 |
| Arizona, University of, Tucson, Ariz. | 1885 | James B. McCormick | 4,903 | 2,757 | 279 | 73,641 | 210,000 |
| Arizona State Col., Flagstaff, Ariz. | 1899 | Lacey A. Eastburn | 747 | 411 | 58 | — | 26,376 |
| Arizona State Col., Tempe, Ariz. | 1885 | Grady Gammage | 2,960 | 1,492 | 108 | — | 57,000 |
| Arkansas, University of, Fayetteville, Ark. | 1871 | Lewis W. Jones | 5,165 | 3,103 | 420 | 132,667 | 227,817 |
| Arkansas A. and M. Col., Monticello, Ark. | 1909 | W. E. Morgan | 600 | 300 | 32 | — | 15,000 |
| Arkansas Polytech. Col. (Jr.), Russellville, Ark. | 1909 | J. W. Hull | 1,245 | 693 | 52 | — | 17,000 |
| Arkansas State Agri. and Mech. Col. (Jr.), Magnolia, Ark. | 1910 | Charlie S. Wilkins | 601 | 256 | 30 | — | 14,500 |
| Arkansas State College, Jonesboro, Ark. | 1910 | W. J. Edens | 1,257 | 607 | 72 | — | 22,050 |
| Arkansas State Tch. Col., Conway, Ark. | 1907 | Nolen M. Irby | 1,273 | 634 | 72 | — | 31,393 |
| Armstrong Junior College, Savannah, Ga. | 1935 | Foreman M. Hawes | 448 | 180 | 22 | 20,000 | 6,000 |
| Asbury College, Wilmore, Ky. | 1890 | Z. T. Johnson | 938 | 262 | 40 | 926,000 | 32,138 |
| Ashland College, Ashland, Ohio | 1878 | Raymond W. Bixler | 586 | 316 | 43 | 401,251 | 22,300 |
| Atlanta University, Atlanta, Ga. | 1867 | Rufus E. Clement | 294 | 134 | 61 | 4,595,857 | 80,000 |
| Atlantic Union College, S. Lancaster, Mass. | 1882 | G. Eric Jones | 322 | 105 | 33 | 31,000 | 25,858 |
| Augusta, Junior College of, Augusta, Ga. | 1925 | Eric W. Hardy | 393 | 76 | 21 | — | 12,000 |
| Augustana College, Sioux Falls, S.D. | 1860 | L. M. Stavig | 868 | 399 | 52 | 450,000 | 25,582 |
| Augustana College and Theological Seminary, Rock Island, Ill. | 1860 | Conrad Bergendoff | 1,333 | 560 | 60 | 1,686,944 | 92,100 |
| Aurora College, Aurora, Ill. | 1893 | T. P. Stephens | 466 | 249 | 38 | 77,710 | 29,956 |
| Averett College (Jr.), Danville, Va. | 1859 | Curtis V. Bishop | 279 | 27 | 27 | 80,000 | 8,500 |
| B | | | | | | | |
| Baker University, Baldwin City, Kan. | 1858 | Nelson P. Horn | 640 | 220 | 42 | 1,437,664 | 68,500 |
| Bakersfield College, Bakersfield, Calif. | 1913 | Grace V. Bird | 1,106 | 482 | 42 | — | 13,000 |
| Baldwin-Wallace College, Berea, Ohio | 1845 | Louis C. Wright | 1,607 | 815 | 77 | 2,366,271 | 50,078 |
| Ball State Teachers College, Muncie, Ind. | 1918 | John R. Emens | 2,424 | 1,076 | 160 | — | 98,916 |
| Barat College of the Sacred Heart, Lake Forest, Ill. | 1919 | Mother M. Reilly | 309 | 1 | 30 | — | 20,000 |
| Barber-Scotia College, Concord, N.C. | 1867 | L. S. Cozart | 151 | 2 | 21 | 800,000 | 12,000 |
| Bard College, Annandale-on-Hudson, N.Y. | 1860 | Edward C. Fuller | 285 | 102 | 41 | 173,760 | 60,000 |
| Barnard College, New York, N.Y. | 1889 | F. D. Fackenthal | 1,165 | 60 | 136 | 5,221,388 | 65,000 |
| Bates College, Lewiston, Me. | 1864 | Charles F. Phillips | 792 | 92 | 58 | 2,295,760 | 80,000 |
| Bay City Junior College, Bay City, Mich. | 1922 | Geo. E. Butterfield | 717 | 352 | 31 | — | 12,000 |
| Baylor Univ., Waco, Tex. | 1845 | Pat M. Neff | 4,311 | 2,296 | 210 | 2,781,759 | 148,000 |
| Beaver College, Jenkintown, Pa. | 1853 | Raymon D. Kistler | 622 | 15 | 57 | — | 22,000 |
| Belmont Abbey Col. (Jr.), Belmont, N.C. | 1878 | Vincent G. Taylor | 275 | 110 | 33 | — | 55,882 |
| Beloit College, Beloit, Wis. | 1846 | Carey Croneis | 1,047 | 385 | 75 | 2,600,000 | 140,000 |
| Bemidji State Tch. Col., Bemidji, Minn. | 1919 | C. R. Sattgast | 598 | 338 | 53 | — | 30,000 |
| Benedict College, Columbia, S.C. | 1870 | J. A. Bacoats | 754 | 174 | 40 | $ 337,118 | 19,736 |
| Bennett College, Greensboro, N.C. | 1873 | David D. Jones | 482 | 1 | 35 | 893,495 | 22,500 |
| Bennett Junior College, Millbrook, N.Y. | 1891 | Courtney Carroll | 186 | — | 34 | 200,000 | 11,000 |
| Bennington College, Bennington, Vt. | 1932 | F. H. Burkhardt | 323 | 1 | 46 | 105,000 | 28,500 |
| Berea College, Berea, Ky. | 1855 | Francis S. Hutchins | 1,087 | 268 | 90 | 11,750,000 | 102,758 |
| Bethany College, Bethany, W.Va. | 1840 | Wilbur H. Cramblet | 784 | 312 | 45 | 3,006,588 | 43,000 |
| Bethany College, Lindsborg, Kan. | 1881 | Emory Lindquist | 420 | 138 | 28 | 443,818 | 24,000 |
| Bethel College, North Newton, Kan. | 1887 | Edmund G. Kaufman | 439 | 50 | 37 | 615,143 | 26,000 |
| Bethune-Cookman Col., Daytona Beach, Fla. | 1904 | Richard V. Moore | 904 | 354 | 46 | 534,738 | 14,361 |
| Birmingham-South. Col., Birmingham, Ala. | 1856 | George R. Stuart | 1,331 | — | 64 | 800,000 | 52,000 |
| Bishop College, Marshall, Tex. | 1881 | Joseph J. Rhoads | 752 | 281 | 37 | 14,220 | 15,927 |
| Bishop's College, U. of, Lennoxville, Que., Can. | 1845 | A. H. McGreer | 218 | 50 | 18 | 1,250,000 | 30,000 |
| Blackburn College (Jr.), Carlinville, Ill. | 1857 | Robert W. McEwen | 343 | 59 | 27 | 1,533,148 | 14,800 |
| Black Hills Teachers College, Spearfish, S.D. | 1883 | Russell E. Jonas | 384 | 207 | 34 | — | 23,000 |
| Bluefield State College, Bluefield, W. Va. | 1895 | H. L. Dickason | 609 | 173 | 33 | — | 17,000 |
| Blue Mountain Col., Blue Mountain, Miss. | 1873 | Lawrence T. Lowrey | 265 | — | 28 | 508,000 | 18,215 |
| Boise Junior College, Boise, Idaho | 1932 | Eugene B. Chaffee | 740 | 373 | 53 | — | 11,000 |
| Boston, Teachers College of the City of, Boston, Mass. | 1852 | W. H. J. Kennedy | 274 | 3 | 25 | — | 30,000 |
| Boston College, Chestnut Hill, Mass. | 1863 | Wm. L. Keleher | 4,900 | 3,205 | 314 | 852,000 | 209,049 |
| Boston University, Boston, Mass. | 1839 | Daniel L. Marsh | 9,977 | 6,007 | 1,050 | 6,325,893 | 275,000 |
| Bowdoin College, Brunswick, Me. | 1794 | Kenneth C. M. Sills | 1,089 | 649 | 68 | 8,726,500 | 211,500 |
| Bowling Green St. Univ., Bowling Green, O. | 1910 | Frank J. Prout | 4,422 | 1,898 | 230 | — | 85,000 |
| Bradford Junior College, Bradford, Mass. | 1803 | Dorothy M. Bell | 276 | — | 24 | 115,675 | 17,835 |
| Bradley University, Peoria, Ill. | 1897 | David B. Owen | 3,070 | 2,115 | 187 | 2,449,668 | 67,000 |
| Branch Agri. Col. of Utah, Cedar City, Utah | 1897 | H. Wayne Driggs | 505 | 173 | 34 | — | 15,000 |
| Briar Cliff College, Sioux City, Iowa | 1930 | Sister Jean Marie | 190 | 10 | 25 | 75,000 | 17,880 |
| Briarcliff Junior Col., Briarcliff Manor, N.Y. | 1933 | Clara Tead | 211 | 1 | 27 | — | 9,000 |
| Bridgeport, Univ. of, Bridgeport, Conn. | 1927 | James H. Halsey | 1,359 | 882 | 84 | — | 12,700 |
| Bridgewater College, Bridgewater, Va. | 1880 | Jacob I. Baugher | 507 | 185 | 34 | 497,526 | 15,000 |
| Brigham Young University, Provo, Utah | 1875 | Howard S. McDonald | 4,423 | 1,690 | 190 | 300,000 | 146,525 |
| British Columbia, Univ. of, Vancouver, B.C., Can. | 1915 | N. A. M. MacKenzie | 9,100 | 4,339 | 331 | 245,844 | 175,000 |
| Brooklyn, Polytechnic Inst. of, Brooklyn, N.Y. | 1854 | H. S. Rogers | 1,708 | 1,152 | 122 | 1,508,234 | 39,046 |
| Brooklyn College, Brooklyn, N.Y. | 1930 | Harry D. Gideonse | 7,725 | 2,615 | 761 | 19,927 | 175,997 |
| Brownsville Junior Col., Brownsville, Tex. | 1926 | John F. Barron | 938 | 635 | 30 | — | 13,152 |
| Brown University, Providence, R.I. | 1764 | Henry M. Wriston | 4,920 | 2,902 | 250 | 13,800,000 | 720,000 |
| Bryn Mawr College, Bryn Mawr, Pa. | 1880 | Katharine E. McBride | 685 | 20 | 90 | 7,535,670 | 197,500 |
| Bucknell University, Lewisburg, Pa. | 1846 | Herbert L. Spencer | 2,239 | 1,258 | 152 | 1,541,925 | 105,000 |
| Buffalo, University of, Buffalo, N.Y. | 1846 | Samuel P. Capen | 6,535 | 4,798 | 805 | 7,000,000 | 221,256 |
| Butler University, Indianapolis, Ind. | 1855 | Maurice O. Ross | 4,304 | 2,500 | 239 | 5,081,082 | 86,000 |
| C | | | | | | | |
| California, University of, Berkeley, Los Angeles, Santa Barbara, San Francisco, Davis, Mount Hamilton, La Jolla, and Riverside, Calif. | 1868 | Robert G. Sproul | 42,637 | 21,003 | 3,235 | 37,936,473 | 2,245,754 |
| California Inst. of Tech., Pasadena, Calif. | 1891 | Lee A. DuBridge | 1,330 | 831 | 195 | 20,653,699 | 65,414 |
| Calvin College, Grand Rapids, Mich. | 1876 | Henry Schultze | 1,375 | 480 | 50 | 195,000 | 32,000 |
| Campbell College (Jr.), Buies Creek, N.C. | 1887 | Leslie H. Campbell | 689 | 269 | 34 | 179,337 | 10,400 |
| Canal Zone Jr. Col., Balboa Heights, C.Z. | 1933 | Roger C. Hackett | 201 | 35 | 33 | — | 9,000 |
| Canisius College, Buffalo, N.Y. | 1870 | Raymond W. Schouten | 2,015 | 1,215 | 84 | 140,000 | 43,000 |
| Capital University, Columbus, Ohio | 1850 | Harold L. Yochum | 1,010 | 279 | 91 | 650,472 | 52,450 |
| Carbon College (Jr.), Price, Utah | 1938 | Aaron E. Jones | 260 | 100 | 35 | — | 5,500 |
| Carleton College, Northfield, Minn. | 1866 | Laurence M. Gould | 1,127 | 324 | 93 | 3,863,447 | 145,279 |
| Carnegie Institute of Tech., Pittsburgh, Pa. | 1900 | Robert E. Doherty | 3,646 | 2,935 | 303 | 23,830,000 | 55,000 |
| Carroll College, Helena, Mont. | 1909 | Emmet J. Riley | 386 | 166 | 22 | 500,000 | 19,000 |
| Carroll College, Waukesha, Wis. | 1846 | N. V. Russell | 813 | 412 | 54 | 971,524 | 35,500 |
| Carson-Newman Col., Jefferson City, Tenn. | 1851 | James T. Warren | 736 | 232 | 36 | 644,748 | 25,000 |
| Carthage College, Carthage, Ill. | 1870 | Erland Nelson | 711 | 284 | 36 | 742,921 | 31,000 |
| Case Institute of Technology, Cleveland, O. | 1880 | T. Keith Glennan | 1,585 | 1,211 | 180 | 5,984,627 | 38,500 |
| Catawba College, Salisbury, N.C. | 1851 | A. R. Keppel | 782 | 415 | 42 | 594,818 | 27,340 |
| Catholic Univ. of America, Wash., D.C. | 1887 | Patrick J. McCormick | 3,589 | 1,800 | 451 | 4,288,985 | 328,264 |
| Cedar Crest College, Allentown, Pa. | 1867 | Dale Hendry Moore | 387 | 9 | 41 | 141,653 | 24,000 |
| Centenary College of La., Shreveport, La. | 1825 | Joe J. Mickle | 1,407 | 702 | 71 | 868,409 | 28,601 |
| Centenary Junior Col., Hackettstown, N.J. | 1867 | Hurst R. Anderson | 339 | — | 23 | 27,542 | 9,324 |
| Central College, Fayette, Mo. | 1855 | E. P. Puckett | 803 | 310 | 47 | 1,021,000 | 50,000 |
| Central College, Pella, Iowa | 1853 | G. T. Vander Lugt | 491 | 177 | 44 | 417,000 | 22,950 |
| Central Michigan College of Education, Mt. Pleasant, Michigan | 1892 | Charles L. Anspach | 2,190 | 1,030 | 160 | — | 60,000 |
| Central Missouri St. Col., Warrensburg, Mo. | 1871 | G. W. Diemer | 1,314 | 497 | 74 | — | 67,838 |
| Central State College, Edmond, Okla. | 1891 | R. R. Robinson | 1,051 | 481 | 66 | — | 33,120 |
| Central Wash. Col. of Educ., Ellensburg, Wash. | 1891 | Robert E. McConnell | 1,118 | 414 | 78 | — | 50,000 |
| Centre College of Kentucky, Danville, Ky. | 1819 | Walter A. Groves | 642 | 295 | 46 | 1,911,200 | 52,500 |
| Chaffey College (Jr.), Ontario, Calif. | 1883 | Gardiner W. Spring | 985 | 460 | 55 | — | 40,000 |
| Charleston, College of, Charleston, S.C. | 1770 | George D. Grice | 454 | 98 | 29 | 420,500 | 32,270 |

| Institution and Location | Year Founded | Chief Executive | Full Time Students | Students under Veterans' Program | Faculty | Endowment | Library Volumes |
|---|---|---|---|---|---|---|---|
| Chattanooga, Univ. of, Chattanooga, Tenn. | 1886 | David A. Lockmiller | 1,442 | 840 | 100 | $ 802,102 | 70,000 |
| Chestnut Hill College, Philadelphia, Pa. | 1871 | Sister Maria Kostka | 488 | 8 | 48 | 400,000 | 31,600 |
| Chicago, School of the Art Inst. of, Chicago, Ill. | 1879 | C. Hubert Ropp | 917 | 517 | 77 | — | 53,000 |
| Chicago, University of, Chicago, Ill. | 1891 | Robert M. Hutchins | 8,515 | 4,473 | 785 | 72,521,247 | 1,750,000 |
| Chicago City Junior College, Chicago, Ill. | | | | | | | |
| Herzl Branch | 1934 | H. L. Klein | 1,349 | 232 | 53 | — | 15,821 |
| Wilson Branch | 1934 | James I. Swearingen | 3,072 | 785 | 95 | — | 68,000 |
| Wright Branch | 1934 | Leland L. Medsker | 4,486 | 1,797 | 150 | — | 37,570 |
| Chicago Teachers College, Chicago, Ill. | 1869 | James I. Swearingen | 838 | 99 | 56 | — | 68,000 |
| Christian College (Jr.), Columbia, Mo. | 1851 | J. C. Miller | 365 | — | 36 | 100,000 | 14,000 |
| Cincinnati, University of, Cincinnati, Ohio | 1819 | Raymond Walters | 7,933 | 4,498 | 730 | 11,264,314 | 606,452 |
| Citadel, The, Charleston, S.C. | 1842 | C. P. Summerall | 2,124 | 1,078 | 127 | — | 40,850 |
| Clark College, Atlanta, Ga. | 1869 | James P Brawley | 807 | 215 | 42 | 921,957 | 15,000 |
| Clarke College, Dubuque, Iowa | 1843 | Sister Mary Graham | 430 | 1 | 53 | 211,150 | 25,126 |
| Clarkson Col. of Technology, Potsdam, N.Y. | 1895 | Jess H. Davis | 1,744 | 1,262 | 85 | 1,420,000 | 13,500 |
| Clark University, Worcester, Mass. | 1887 | Howard B. Jefferson | 966 | 516 | 67 | 6,099,938 | 180,000 |
| Clemson Agricultural Col., Clemson, S.C. | 1889 | Robert F. Poole | 3,240 | 2,100 | 250 | 281,000 | 93,000 |
| Coe College, Cedar Rapids, Iowa | 1851 | Byron S. Hollinshead | 805 | 492 | 55 | 2,150,000 | 56,000 |
| Coker College, Hartsville, S.C. | 1908 | Donald C. Agnew | 372 | 33 | 32 | 693,000 | 22,646 |
| Colby College, Waterville, Maine | 1813 | Julius S. Bixler | 1,050 | 406 | 75 | 4,000,000 | 120,000 |
| Colby Junior College, New London, N.H. | 1837 | H. Leslie Sawyer | 407 | 1 | 39 | 500,000 | 18,000 |
| Colgate University, Hamilton, N.Y. | 1819 | Everett N. Case | 1,478 | 917 | 119 | 5,812,781 | 166,931 |
| Colorado, University of, Boulder, Colo. | 1876 | Robert L. Stearns | 9,345 | 4,758 | 560 | 960,226 | 661,180 |
| Colorado College, Colorado Springs, Colo. | 1874 | Thurston J. Davies | 1,176 | 553 | 72 | 2,951,616 | 138,000 |
| Colorado School of Mines, Golden, Colo. | 1874 | Ben. H Parker | 1,127 | 861 | 95 | 105,000 | 50,000 |
| Colorado State College of Agriculture and Mechanic Arts, Fort Collins, Colo. | 1876 | Roy M. Green | 3,709 | 2,304 | 228 | 565,000 | 117,000 |
| Colorado State Col. of Educ., Greeley, Colo. | 1890 | William R. Ross | 1,801 | 775 | 120 | — | 115,416 |
| Colorado Woman's College (Jr.), Denver, Colo. | 1888 | James E. Huchingson | 515 | — | 39 | 113,088 | 10,698 |
| Columbia College, Columbia, S. C. | 1854 | J. C. Guilds | 347 | 4 | 34 | 574,023 | 15,004 |
| Columbia University, New York, N.Y. | 1754 | Frank D. Fackenthal | 31,604 | 15,047 | 2,269 | 90,911,308 | 1,806,375 |
| Compton Junior College, Compton, Calif. | 1927 | O. Scott Thompson | 4,925 | 1,225 | 125 | — | 25,000 |
| Concord College, Athens, W.Va. | 1872 | Virgil H. Stewart | 931 | 401 | 43 | — | 20,000 |
| Concordia College, Moorhead, Minn. | 1891 | J. N. Brown | 1,001 | 337 | 59 | 570,958 | 33,561 |
| Concordia Collegiate Inst., Bronxville, N. Y. | 1881 | Arthur J. Doege | 175 | 40 | 26 | — | 15,000 |
| Connecticut, Tch. Col. of, New Britain, Conn. | 1849 | Herbert D. Welte | 1,263 | 703 | 112 | — | 37,000 |
| Connecticut, University of, Storrs, Conn. | 1881 | A. N. Jorgensen | 7,276 | 4,500 | 418 | 159,163 | 105,000 |
| Connecticut College, New London, Conn. | 1911 | Rosemary Park | 842 | 3 | 97 | 2,257,764 | 113,500 |
| Converse College, Spartanburg, S.C. | 1889 | Edw. M. Gwathmey | 430 | 5 | 47 | 640,239 | 32,000 |
| Cooper Union, New York, N. Y. | 1859 | Gano Dunn | 1,740 | 584 | 177 | 9,108,039 | 125,000 |
| Copiah-Lincoln Jr. Col., Wesson, Miss. | 1928 | J. M. Ewing | 657 | 216 | 37 | — | 8,000 |
| Cornell College, Mount Vernon, Iowa | 1853 | Russell D. Cole | 782 | 243 | 64 | 2,425,728 | 60,000 |
| Cornell University, Ithaca, N.Y. | 1865 | Edmund Ezra Day | 10,143 | 5,024 | 1,286 | 35,895,862 | 1,299,798 |
| Corpus Christi Jr. Col., Corpus Christi, Tex. | 1935 | E. L. Harvin | 937 | 396 | 42 | — | 6,635 |
| Cottey Junior College, Nevada, Mo. | 1884 | Marjorie Mitchell | 159 | — | 20 | 58,359 | 8,635 |
| Creighton University, Omaha, Neb. | 1878 | William H. McCabe | 2,852 | 1,920 | 297 | 2,322,500 | 148,903 |
| Culver-Stockton College, Canton, Mo. | 1853 | W. H. McDonald | 492 | 185 | 32 | 810,000 | 30,000 |
| Cumberland Col. (Jr.), Williamsburg, Ky. | 1889 | J. M. Boswell | 380 | 115 | 19 | 650,000 | 8,000 |
| **D** | | | | | | | |
| Dakota Wesleyan University, Mitchell, S.D. | 1885 | Samuel M. Hilburn | 400 | 178 | 42 | 574,410 | 30,000 |
| Dalhousie Univ., Halifax, N.S., Can. | 1818 | Alexander E. Kerr | 1,816 | 761 | 181 | 4,228,839 | 120,000 |
| Danbury State Tch. Col., Danbury, Conn. | 1904 | Ruth A. Haas | 288 | 77 | 46 | — | 25,000 |
| Dartmouth College, Hanover, N.H. | 1769 | John Sloan Dickey | 2,977 | 1,876 | 322 | 24,000,000 | 635,367 |
| Davidson College, Davidson, N.C. | 1836 | John R. Cunningham | 980 | 400 | 58 | 5,123,000 | 45,000 |
| Davis and Elkins Col., Elkins, W. Va. | 1904 | R. B. Purdum | 790 | 427 | 37 | 222,000 | 21,355 |
| Dayton, University of, Dayton, Ohio | 1850 | George J. Renneker | 2,303 | 1,409 | 138 | — | 44,825 |
| elaware, University of, Newark, Del. | 1833 | William S. Carlson | 2,148 | 1,146 | 175 | 5,000,000 | 125,000 |
| elaware State College, Dover, Del. | 1891 | Howard D. Gregg | 338 | 170 | 35 | — | 8,000 |
| elta State Tch. Col., Cleveland, Miss. | 1925 | William M. Kethley | 590 | 279 | 51 | — | 17,000 |
| enison University, Granville, Ohio | 1831 | Kenneth I. Brown | 1,339 | 498 | 88 | 3,647,394 | 113,833 |
| enver, University of, Denver, Colo. | 1864 | James F. Price | 8,117 | 5,979 | 511 | 2,141,230 | 200,276 |
| e Paul University, Chicago, Illinois | 1898 | Comerford J. O'Malley | 4,913 | 3,009 | 344 | 5,640,000 | 85,000 |
| Pauw University, Greencastle, Ind. | 1837 | Clyde E. Wildman | 2,125 | 702 | 130 | 6,377,156 | 103,463 |
| troit, University of, Detroit, Mich. | 1877 | William J. Millor | 7,168 | 4,983 | 414 | 1,700,000 | 131,700 |
| kinson College, Carlisle, Pa. | 1773 | William W. Edel | 919 | 478 | 72 | 2,067,784 | 77,635 |
| ard University, New Orleans, La. | 1930 | Albert W. Dent | 602 | 158 | 51 | 3,000,000 | 32,000 |
| ie Junior College, St. George, Utah | 1911 | Glenn E. Snow | 300 | 100 | 20 | — | 9,000 |
| ane College, Crete, Neb. | 1872 | Harry M. Gage | 460 | 144 | 38 | 1,336,350 | 31,779 |
| ke University, Des Moines, Iowa | 1881 | H. G. Harmon | 4,018 | 2,482 | 216 | 2,702,874 | 113,000 |
| w University, Madison, N.J. | 1867 | Arlo Ayres Brown | 685 | 236 | 61 | 8,610,618 | 198,163 |
| kel Institute of Tech., Philadelphia, Pa. | 1891 | James Creese | 3,214 | 1,865 | 242 | 3,036,843 | 92,475 |
| y College, Springfield, Mo. | 1873 | J. F. Findlay | 765 | 348 | 66 | 1,000,922 | 50,000 |
| uque, University of, Dubuque, Iowa | 1852 | Samuel S. George | 636 | 224 | 42 | 1,052,000 | 31,000 |
| Duchesne College, Omaha, Neb. | 1881 | Mother Eleanor Regan | 258 | 3 | 21 | $ — | 18,000 |
| Duke University, Durham, N.C. | 1838 | Robert Lee Flowers | 4,890 | 2,249 | 598 | 47,685,097 | 766,099 |
| Duluth Junior College, Duluth, Minn. | 1927 | R. D. Chadwick | 504 | 359 | 34 | — | 9,241 |
| Dunbarton College of Holy Cross, Wash., D.C. | 1935 | Sr. Mary Frederick | 200 | 1 | 30 | — | 20,261 |
| Duquesne University, Pittsburgh, Pa. | 1878 | Francis P. Smith | 3,599 | 2,695 | 223 | 2,000,000 | 49,162 |
| D'Youville College, Buffalo, N.Y. | 1908 | Sister Jane Frances | 449 | 5 | 35 | — | 27,000 |
| **E** | | | | | | | |
| Earlham College, Richmond, Ind. | 1847 | Thomas E. Jones | 724 | 236 | 53 | 1,477,850 | 72,000 |
| East Carolina Tch. Col., Greenville, N.C. | 1907 | J. D. Messick | 1,404 | 547 | 87 | — | 61,256 |
| East Central Junior Col., Decatur, Miss. | 1928 | L. O. Todd | 551 | 241 | 25 | — | 6,000 |
| East Central State College, Ada, Oklahoma | 1909 | A. Linscheid | 1,201 | 596 | 73 | — | 37,413 |
| Eastern Illinois State Col., Charleston, Ill. | 1895 | Robert G. Buzzard | 1,382 | 694 | 106 | — | 66,000 |
| Eastern Kentucky St. Tch. Col., Richmond, Ky. | 1906 | W. F. O'Donnell | 1,355 | 625 | 84 | — | 75,661 |
| Eastern Montana St. Normal Sch., Billings, Mont. | 1925 | A. G. Peterson | 371 | 146 | 19 | — | 14,200 |
| Eastern Nazarene College, Wollaston, Mass. | 1919 | Samuel Young | 470 | 123 | 34 | — | 18,000 |
| Eastern New Mexico Col., Portales, N. Mex. | 1927 | Floyd D. Golden | 582 | 256 | 53 | — | 21,001 |
| Eastern Oregon Col. of Educ., La Grande, Ore. | 1929 | Roben J. Maaske | 689 | 293 | 40 | 1,000 | 25,689 |
| Eastern Washington Col. of Educ., Cheney, Wash. | 1890 | Walter W. Isle | 1,321 | 550 | 90 | — | 71,581 |
| East Los Angeles Jr. Col., Los Angeles, Calif. | 1945 | Rosco C. Ingalls | 1,252 | 445 | 58 | — | 2,166 |
| East Tennessee St. Col., Johnson City, Tenn. | 1911 | C. C. Sherrod | 1,279 | 505 | 71 | — | 35,000 |
| East Texas State Tch. Col., Commerce, Tex. | 1889 | James G. Gee | 2,062 | 875 | 104 | — | 96,392 |
| Edinburg Junior College, Edinburg, Tex. | 1927 | R. P. Ward | 625 | 300 | 35 | — | 11,500 |
| Elizabeth City St. Tch. Col., Elizabeth City, N.C. | 1891 | Sidney D. Williams | 489 | 45 | 26 | — | 15,000 |
| Elmhurst College, Elmhurst, Ill. | 1871 | Timothy Lehmann | 648 | 249 | 40 | 271,000 | 43,000 |
| Elmira College, Elmira, N.Y. | 1855 | W. S. A. Pott | 396 | 5 | 52 | 544,863 | 59,419 |
| Emmanuel College, Boston, Mass. | 1919 | Sr. Margaret Patricia | 759 | 3 | 58 | — | 27,800 |
| Emmanuel Miss. Col., Berrien Spgs., Mich. | 1874 | Alvin W. Johnson | 992 | 406 | 54 | 300,000 | 35,500 |
| Emory and Henry College, Emory, Va. | 1836 | Foye G. Gibson | 539 | 271 | 25 | 613,869 | 25,100 |
| Emory at Oxford (Jr.), Oxford, Ga. | 1836 | Virgil Y. C. Eady | 276 | 106 | 17 | — | 5,900 |
| Emory Junior College, Valdosta, Ga. | 1928 | E. D. Whisonant | 242 | 125 | 14 | — | 4,500 |
| Emory University, Emory University, Ga. | 1836 | Goodrich C. White | 4,026 | 2,200 | 256 | 12,500,000 | 275,957 |
| Erskine College, Due West, S.C. | 1839 | R. C. Grier | 463 | 187 | 35 | 389,000 | 30,000 |
| Evansville College, Evansville, Ind. | 1854 | Lincoln B. Hale | 1,575 | 1,018 | 96 | 400,986 | 24,878 |
| Eveleth Junior College, Eveleth, Minn. | 1919 | E. T. Carlstedt | 162 | 65 | 8 | — | 12,000 |
| **F** | | | | | | | |
| Fairmont State College, Fairmont, W.Va. | 1867 | George H. Hard | 1,002 | 495 | 57 | — | 28,385 |
| Fayetteville State Tch. Col., Fayetteville, N.C. | 1877 | J. W. Seabrook | 585 | 79 | 26 | — | 24,699 |
| Fenn College, Cleveland, Ohio | 1881 | Cecil V. Thomas | 1,395 | 1,191 | 116 | 809,060 | 30,000 |
| Finch Junior College, New York, N.Y. | 1900 | Jessica G. Cosgrave | 279 | 6 | 42 | — | 8,500 |
| Findlay College, Findlay, Ohio | 1882 | H. Clifford Fox | 409 | 200 | 25 | 442,997 | 19,500 |
| Fisk University, Nashville, Tenn. | 1866 | Charles S. Johnson | 966 | 271 | 57 | 4,142,236 | 92,650 |
| Flat River, Junior Col. of, Flat River, Mo. | 1922 | Wesley A. Deneke | 184 | 64 | 19 | — | 10,000 |
| Flint Junior College, Flint, Mich. | 1923 | L. A. Pratt | 850 | 500 | 40 | — | 14,000 |
| Florida, University of, Gainesville, Fla. | 1853 | J. Hillis Miller | 8,738 | 5,608 | 496 | 312,049 | 292,396 |
| Florida A. and M. Col., Tallahassee, Fla. | 1887 | Wm. H. Gray, Jr. | 1,655 | 589 | 253 | — | 18,464 |
| Florida Normal and Industrial College, St. Augustine, Fla. | 1892 | John Lee Tilley | 337 | 33 | 27 | — | 6,000 |
| Florida Southern College, Lakeland, Florida | 1885 | Ludd M. Spivey | 2,000 | 1,067 | 100 | 1,325,000 | 71,000 |
| Florida State Univ.., Tallahassee, Fla. | 1905 | Doak S. Campbell | 4,000 | 895 | 250 | 206,000 | 112,071 |
| Fontbonne College, Saint Louis, Mo. | 1923 | Mother Mary Berenice O'Neill | 383 | 1 | 45 | — | 25,500 |
| Fordham University, New York, N.Y. | 1841 | Robert I. Gannon | 6,481 | 4,157 | 390 | 844,000 | 228,456 |
| Fort Hays Kansas State Col., Hays, Kansas | 1902 | L. D. Wooster | 980 | 409 | 83 | — | 65,000 |
| Fort Valley State College, Fort Valley, Ga. | 1895 | H. A. Bowen | 549 | 124 | 52 | 38,529 | 13,867 |
| Frances Shimer Col. (Jr.), Mount Carroll, Ill. | 1853 | Albin C. Bro | 263 | 13 | 30 | 190,000 | 13,850 |
| Franklin and Marshall Col., Lancaster, Pa. | 1787 | Theodore A. Distler | 1,320 | 785 | 76 | 1,619,878 | 110,000 |
| Franklin College, Franklin, Ind. | 1834 | William G. Spencer | 630 | 267 | 35 | 1,171,170 | 34,806 |
| Fresno State College, Fresno, Calif. | 1911 | Frank W. Thomas | 2,707 | 1,201 | 164 | — | 69,052 |
| Fullerton Junior College, Fullerton, Calif. | 1913 | W. T. Boyce | 1,680 | 629 | 72 | — | 15,930 |
| Furman University, Greenville, S.C. | 1826 | John Laney Plyler | 1,367 | 558 | 69 | 3,236,038 | 70,000 |
| **G** | | | | | | | |
| General Beadle St. Tch. Col., Madison, S.D | 1881 | V. A. Lowry | 178 | 66 | 29 | — | 25,000 |
| Geneva College, Beaver Falls, Pa. | 1848 | M. M. Pearce | 891 | 467 | 53 | 670,000 | 37,000 |
| George Peabody Col. for Tch., Nashville, Tenn. | 1875 | Henry H. Hill | 1,850 | 907 | 75 | 5,490,857 | 489,089 |
| George Pepperdine Col., Los Angeles, Calif. | 1937 | Hugh M. Tiner | 1,500 | 758 | 95 | 895,897 | 26,520 |
| Georgetown College, Georgetown, Ky. | 1829 | Samuel S. Hill | 696 | 275 | 55 | 583,268 | 15,538 |
| Georgetown University, Washington, D.C. | 1789 | Lawrence C. Gorman | 5,476 | 3,526 | 561 | 3,500,000 | 394,142 |
| George Washington Univ., Washington, D.C. | 1821 | Cloyd H. Marvin | 6,421 | 4,224 | 760 | 2,700,000 | 160,000 |
| George Williams College, Chicago, Ill. | 1890 | Harold Coe Coffman | 345 | 222 | 26 | 239,8 | |
| Georgia, University of, Athens, Ga. | 1785 | Harmon W. Caldwell | 6,76 | 2,7 | | | |

| Institution and Location | Year Founded | Chief Executive | Full Time Students | Students under Veterans' Program | Faculty | Endowment | Library Volumes |
|---|---|---|---|---|---|---|---|
| Georgia, Univ of, Atlanta Div., Atlanta, Ga. | 1914 | George M. Sparks | 4,819 | 1,854 | 150 | — | 21,000 |
| Georgia Military Col. (Jr.), Milledgeville, Ga. | 1879 | J. H. Jenkins | 550 | 135 | 35 | — | 5,000 |
| Georgian Court College, Lakewood, N.J. | 1908 | Mother Mary John | 236 | — | 34 | — | 35,000 |
| Georgia School of Tech., Atlanta, Ga. | 1885 | Blake R. Van Leer | 5,403 | 3,913 | 425 | $ 639,212 | 100,000 |
| Georgia Southwestern Col. (Jr.), Americus, Ga. | 1924 | Peyton Jacob | 375 | 102 | 19 | — | 14,387 |
| Georgia State Col., Industrial College, Ga. | 1891 | James A. Colston | 1,175 | 555 | 60 | — | 14,525 |
| Georgia St. Col. for Wom., Milledgeville, Ga. | 1889 | Guy H. Wells | 1,126 | 4 | 105 | — | 41,730 |
| Georgia State Womans Col., Valdosta, Ga. | 1906 | Frank R. Reade | 350 | 3 | 29 | — | 23,675 |
| Georgia Teachers College, Collegeboro, Ga. | 1908 | Judson C. Ward, Jr. | 633 | 206 | 46 | — | 33,000 |
| Gettysburg College, Gettysburg, Pa. | 1832 | Henry W. A. Hanson | 1,203 | 721 | 86 | 500,000 | 62,000 |
| Glendale College (Jr.), Glendale, Calif. | 1927 | Elmer T. Worthy | 2,188 | 1,009 | 86 | — | 12,500 |
| Glenville State College, Glenville, W.Va. | 1873 | Harry B. Heflin | 485 | 212 | 28 | — | 22,000 |
| Gonzaga University, Spokane, Wash. | 1887 | Francis E. Corkery | 1,537 | 1,082 | 140 | 2,221,581 | 102,000 |
| Good Counsel College, White Plains, N.Y. | 1923 | Mother M. Aloysia | 387 | 2 | 33 | 48,000 | 15,528 |
| Gordon Military Col. (Jr.), Barnesville, Ga. | 1852 | J. E. Guillebeau | 130 | 52 | 12 | — | 5,000 |
| Goshen College, Goshen, Ind. | 1894 | Ernest E. Miller | 572 | 56 | 38 | 353,282 | 33,000 |
| Goucher College, Baltimore, Md. | 1885 | David A. Robertson | 731 | 4 | 57 | 2,117,446 | 85,350 |
| Graceland College, Lamoni, Iowa | 1895 | E. J. Gleazer | 635 | 238 | 35 | 261,000 | 20,000 |
| Grand Rapids Jr. Col., Grand Rapids, Mich. | 1914 | Arthur Andrews | 1,495 | 751 | 70 | — | 16,500 |
| Great Falls Col. of Educ., Great Falls, Montana | 1932 | Sister Mary Dorothy | 542 | 153 | 27 | — | 20,000 |
| Green Mountain Junior Col., Poultney, Vt. | 1834 | Howard C. Ackley | 305 | — | 26 | 106,911 | 13,000 |
| Greensboro College, Greensboro, N.C. | 1838 | Luther L. Gobbel | 371 | 1 | 35 | 635,656 | 29,505 |
| Grinnell College, Grinnell, Ia. | 1846 | Samuel N. Stevens | 1,137 | 380 | 81 | 5,210,049 | 120,000 |
| Grove City College, Grove City, Pa. | 1876 | Weir C. Ketler | 1,356 | 651 | 58 | 836,000 | 45,000 |
| Guilford College, Guilford College, N.C. | 1837 | Clyde A. Milner | 586 | 276 | 34 | 689,439 | 29,000 |
| Gulf Park College (Jr.), Gulfport, Miss. | 1919 | Richard G. Cox | 254 | — | 28 | — | 7,706 |
| Gustavus Adolphus Col., St. Peter, Minn. | 1862 | Edgar M. Carlson | 1,258 | 510 | 68 | 601,000 | 27,163 |
| **H** | | | | | | | |
| Hamilton College, Clinton, N.Y. | 1812 | Thomas Brown Rudd | 596 | 327 | 56 | 4,399,691 | 213,446 |
| Hamline University, St. Paul, Minn. | 1854 | Charles N. Pace | 1,186 | 449 | 81 | 4,181,607 | 51,830 |
| Hampden-Sydney Col., Hamp.-Sydney, Va. | 1776 | Edgar G. Gammon | 442 | 188 | 24 | 832,000 | 36,150 |
| Hampton Institute, Hampton, Va. | 1868 | Ralph P. Bridgman | 1,698 | 790 | 131 | 9,972,815 | 75,000 |
| Hanover College, Hanover, Ind. | 1827 | Albert G. Parker, Jr. | 655 | 285 | 35 | 1,500,000 | 40,000 |
| Hardin College, Wichita Falls, Tex. | 1922 | James B. Boren | 1,838 | 659 | 104 | 381,000 | 14,869 |
| Hardin-Simmons University, Abilene, Tex. | 1891 | Rupert N. Richardson | 1,662 | 762 | 93 | 1,280,000 | 36,000 |
| Harris Teachers College, St. Louis, Mo. | 1857 | Charles A. Naylor, Jr. | 1,159 | 243 | 60 | — | 25,632 |
| Harvard University, Cambridge, Mass. | 1636 | James B. Conant | 12,603 | 8,628 | 2,250 | 182,824,335 | 4,965,731 |
| Hastings College, Hastings, Neb. | 1882 | Wm. M. French | 736 | 317 | 51 | 681,649 | 36,000 |
| Haverford College, Haverford, Pa. | 1833 | Gilbert F. White | 550 | 252 | 60 | 6,000,000 | 172,000 |
| Hawaii, University of, Honolulu, T.H. | 1907 | Gregg M. Sinclair | 3,420 | 986 | 240 | 67,542 | 181,546 |
| Heidelberg College, Tiffin, Ohio | 1850 | F. D. Lemke | 800 | 224 | 55 | 1,184,355 | 36,190 |
| Henderson St. Tch. Col., Arkadelphia, Ark. | 1929 | D. D. McBrien | 813 | 350 | 46 | — | 28,572 |
| Hendrix College, Conway, Ark. | 1884 | Matt L. Ellis | 586 | 230 | 40 | 1,300,000 | 50,200 |
| Hershey Junior College, Hershey, Pa. | 1938 | V. H. Fenstermacher | 127 | 67 | 17 | 30,000 | 15,990 |
| Hibbing Junior College, Hibbing, Minn. | 1916 | S. A. Patchin | 419 | 147 | 29 | — | 6,418 |
| Highland Park Junior Col., Highland Pk., Mich. | 1918 | G. O. Withey | 1,829 | 855 | 57 | — | 6,500 |
| Hillsdale College, Hillsdale, Mich. | 1844 | Harvey L. Turner | 620 | 265 | 48 | 745,518 | 31,000 |
| Hinds Junior College, Raymond, Miss. | 1917 | G. M. McLendon | 691 | 306 | 47 | — | 6,500 |
| Hiram College, Hiram, Ohio | 1850 | Paul H. Fall | 650 | 343 | 37 | 1,250,000 | 50,000 |
| Hobart College, Geneva N. Y. | 1822 | Walter H. Durfee | 905 | 572 | 58 | 707,046 | 89,188 |
| Hofstra College, Hempstead, N.Y. | 1935 | John C. Adams | 1,914 | 1,183 | 133 | 741,000 | 22,719 |
| Hollins College, Hollins College, Va. | 1842 | Bessie C. Randolph | 368 | 1 | 46 | 567,601 | 42,479 |
| Holmes Jr. College, Goodman, Miss. | 1925 | Ras M. Branch | 413 | 189 | 26 | — | 7,000 |
| Holy Cross, Col. of the, Worcester, Mass. | 1843 | William J. Healy | 1,709 | 959 | 104 | — | 142,800 |
| Holy Names, Col. of the, Oakland, Calif. | 1880 | Sr. Rose Emmanuella | 286 | 5 | 42 | — | 30,770 |
| Holy Names College, Spokane, Wash. | 1907 | Sister M. F. Xavier | 160 | 5 | 24 | — | — |
| Hood College, Frederick, Md. | 1893 | Henry I. Stahr | 521 | 2 | 49 | 867,333 | 28,200 |
| Hope College, Holland, Mich. | 1866 | Irwin J. Lubbers | 1,221 | 503 | 62 | 960,553 | 52,000 |
| Houghton College, Houghton, N.Y. | 1883 | Stephen W. Paine | 741 | 217 | 44 | 312,154 | 24,640 |
| Howard College, Birmingham, Ala. | 1842 | Harwell G. Davis | 1,286 | 833 | 63 | 753,329 | 34,595 |
| Howard University, Washington, D.C. | 1867 | Mordecai W. Johnson | 4,799 | 2,514 | 467 | 1,146,417 | 237,252 |
| H. Sophie Newcomb Mem. Col. for Women, Tulane Univ., New Orleans, La. | 1886 | Logan Wilson | 812 | 12 | 82 | — | 311,007 |
| Hunter College of the City of New York, New York, N.Y. | 1870 | George N. Shuster | 6,555 | 886 | 392 | — | 159,364 |
| Huntingdon College, Montgomery, Ala. | 1854 | Hubert Searcy | 850 | 225 | 55 | 500,000 | 31,000 |
| Huron College, Huron, S.D. | 1883 | George F. McDougall | 307 | 163 | 26 | 712,595 | 26,000 |
| **I** | | | | | | | |
| Idaho, College of, Caldwell, Ida. | 1891 | William W. Hall, Jr. | 525 | 250 | 40 | 500,000 | 22,500 |
| Idaho, University of, Moscow, Ida. | 1889 | J. E. Buchanan | 3,550 | 1,960 | 240 | 4,875,402 | 110,000 |
| Idaho State College, Pocatello, Ida. | 1927 | Carl W. McIntosh | 1,666 | 921 | 109 | — | 24,500 |
| Illinois, University of, Urbana, Ill. | 1867 | George D. Stoddard | 28,284 | 16,497 | 2,886 | 2,106,221 | 2,457,463 |
| Illinois College, Jacksonville, Ill. | 1829 | Harris G. Hudson | 564 | 292 | 38 | $ 1,311,079 | 35,559 |
| Illinois Institute of Technology, Chicago, Ill. | 1892 | Henry Townley Heald | 3,450 | 2,367 | 175 | 1,800,000 | 125,000 |
| Illinois State Normal Univ., Normal, Ill. | 1857 | R. W. Fairchild | 1,954 | 609 | 208 | — | 87,559 |
| Illinois Wesleyan Univ., Bloomington, Ill. | 1850 | M. J. Holmes | 1,281 | 578 | 82 | 1,506,960 | 45,000 |
| Immaculata College, Immaculata, Pa. | 1920 | V. L. Burns | 360 | 1 | 45 | — | 23,000 |
| Immaculata Junior Col., Wash., D.C. | 1920 | Sister St. Philomene | 104 | — | 15 | — | 8,000 |
| Immaculate Heart College, Los Angeles Cal. | 1916 | Mother Eucharia | 407 | 15 | 42 | — | 21,000 |
| Incarnate Word College, San Antonio, Tex. | 1881 | Sister M. Columkille | 513 | 32 | 67 | 122,312 | 36,367 |
| Indiana Central College, Indianapolis, Ind. | 1902 | Lynd Esch | 422 | 185 | 32 | 103,383 | 19,700 |
| Indiana State Tch. Col., Terre Haute, Ind. | 1865 | Ralph N. Tirey | 2,555 | 1,308 | 158 | — | 150,206 |
| Indiana University, Bloomington, Ind. | 1820 | Herman B. Wells | 14,176 | 6,486 | 1,754 | 2,500,000 | 700,000 |
| Iowa, State University of, Iowa City, Ia. | 1847 | Virgil M. Hancher | 10,130 | 5,665 | 1,035 | 1,283,964 | 674,989 |
| Iowa State College, Ames, Ia. | 1858 | Charles E. Friley | 9,700 | 5,596 | 822 | 1,156,853 | 375,000 |
| Iowa State Tch. Col., Cedar Falls, Ia. | 1876 | Malcolm Price | 2,840 | 850 | 248 | — | 140,000 |
| Iowa Wesleyan College, Mount Pleasant, Ia. | 1842 | Stanley B. Niles | 606 | 274 | 56 | 700,000 | 29,278 |
| **J** | | | | | | | |
| Jackson Junior College, Jackson, Mich. | 1928 | G. L. Greenawalt | 549 | 224 | 33 | — | 5,207 |
| James Millikin University, Decatur, Ill. | 1901 | J. Walter Malone | 1,510 | 826 | 70 | 2,000,000 | 40,000 |
| James Ormond Wilson Tch. Col., Wash., D.C. | 1873 | Walter E. Hager | 485 | 70 | 52 | — | 27,013 |
| Jamestown College, Jamestown, N.D. | 1883 | Howard J. Bell, Jr. | 503 | 181 | 35 | 1,135,991 | 23,123 |
| John B. Stetson University, De Land, Fla. | 1883 | H. C. Garwood | 2,140 | 1,147 | 136 | 900,000 | 54,945 |
| John Carroll University, Cleveland, Ohio | 1886 | Frederick E. Welfle | 2,034 | 1,488 | 92 | 3,381,000 | 43,648 |
| John McNeese Jr. Col., L.S.U., Lake Charles, La. | 1939 | L. E. Frazar | 615 | 240 | 34 | — | 6,830 |
| John Muir College, Pasadena, Calif. | 1946 | Archie M. Turrell | 2,442 | 845 | 113 | — | 12,500 |
| Johns Hopkins University, Baltimore, Md. | 1876 | Isaiah Bowman | 2,683 | 1,545 | 561 | 35,399,629 | 750,000 |
| Johnson C. Smith University, Charlotte, N.C. | 1867 | Hardy Liston | 761 | 278 | 37 | 2,000,000 | 23,000 |
| John Tarleton Agri. Col. (Jr.), Stephenville, Tex. | 1899 | E. J. Howell | 1,407 | 497 | 73 | 137,626 | 28,000 |
| Joliet Junior College, Joliet, Ill. | 1901 | E. W. Rowley | 603 | 220 | 45 | — | 12,000 |
| Jones County Junior Col., Ellisville, Miss. | 1927 | J. B. Young | 798 | 441 | 60 | — | 14,000 |
| Judson College, Marion, Ala. | 1838 | J. I. Riddle | 210 | — | 25 | 545,000 | 19,419 |
| Juniata College, Huntingdon, Pa. | 1876 | Calvert N. Ellis | 635 | 259 | 40 | 780,000 | 55,000 |
| **K** | | | | | | | |
| Kalamazoo College, Kalamazoo, Mich. | 1833 | Paul L. Thompson | 651 | 294 | 57 | 1,170,733 | 37,524 |
| Kansas, University of, Lawrence, Kan. | 1865 | Deane W. Malott | 9,279 | 5,230 | 1,127 | 1,230,000 | 383,000 |
| Kansas City, Jr. College of, Kansas City, Mo. | 1915 | A. M. Swanson | 1,961 | 512 | 67 | — | 36,000 |
| Kansas City, University of, Kansas City, Mo. | 1929 | Clarence R. Decker | 2,261 | 1,543 | 182 | — | 222,329 |
| Kansas State College, Manhattan, Kan. | 1863 | Milton S. Eisenhower | 6,968 | 4,211 | 450 | 555,841 | 145,901 |
| Kansas State Tch. Col., Emporia, Kan. | 1863 | D. L. MacFarlane | 1,305 | 632 | 112 | 250,000 | 95,000 |
| Kansas State Tch. Col., Pittsburgh, Kan. | 1903 | Rees H. Hughes | 1,904 | 1,215 | 158 | — | 80,000 |
| Keene Teachers College, Keene, N.H. | 1909 | Lloyd P. Young | 413 | 121 | 33 | — | 26,499 |
| Kemper Military School (Jr.), Boonville, Mo. | 1844 | A. M. Hitch | 492 | 6 | 35 | 250,000 | 9,000 |
| Kent State University, Kent, Ohio | 1910 | George A. Bowman | 5,335 | 3,210 | 238 | — | 85,000 |
| Kentucky, University of, Lexington Ky. | 1865 | H. L. Donovan | 7,539 | 4,629 | 368 | 195,428 | 407,477 |
| Kentucky St. Col. Frankfort, Ky. | 1886 | R. B. Atwood | 705 | 235 | 31 | — | 15,660 |
| Kenyon College, Gambier, Ohio. | 1824 | Gordon K. Chalmers | 634 | 307 | 62 | 2,118,270 | 112,000 |
| Keuka College, Keuka Park, N.Y. | 1890 | Katherine G. Blyley | 432 | 7 | 33 | 375,000 | 35,102 |
| Keystone College (Jr.), La Plume, Pa. | 1868 | Blake Tewksbury | 512 | 268 | 32 | 100,000 | 15,000 |
| Kilgore College (Jr.), Kilgore, Tex. | 1935 | B. E. Masters | 1,222 | 516 | 60 | — | 12,000 |
| King's College, Univ. of, Halifax, N.S., Can. | 1789 | A. Stanley Walker | 170 | 57 | 43 | 1,100,000 | 28,000 |
| Knox College, Galesburg, Illinois | 1837 | Lyndon O. Brown | 842 | 365 | 69 | 2,698,150 | 80,789 |
| Knoxville College, Knoxville, Tenn. | 1875 | J. Reed Miller | 301 | 87 | 18 | 600,000 | 13,000 |
| **L** | | | | | | | |
| Lafayette College, Easton, Pa. | 1826 | Ralph C. Hutchison | 1,873 | 1,250 | 130 | 4,691,513 | 116,771 |
| Lake Erie College, Painesville, Ohio | 1856 | Helen D. Bragdon | 210 | — | 28 | 831,603 | 35,000 |
| Lake Forest College, Lake Forest, Ill. | 1857 | Ernest A. Johnson | 721 | 318 | 42 | 1,382,938 | 58,250 |
| Lamar College (Jr.), Beaumont, Tex. | 1923 | John E. Gray | 1,433 | 663 | 65 | — | 7,000 |
| Lane College, Jackson, Tenn. | 1882 | Dean S. Yarbrough | 511 | 204 | 38 | 30,000 | 11,428 |
| La Salle College, Philadelphia, Pa. | 1863 | Brother G. Paul | 1,890 | 1,438 | 75 | — | 30,000 |
| LaSalle-Peru-Oglesby Jr. Col., LaSalle, Ill. | 1924 | Francis H. Dolan | 329 | 150 | 29 | — | 10,000 |
| Lasell Junior College, Auburndale, Mass. | 1851 | Raymond C. Wass | 537 | 5 | 60 | 95,000 | 10,000 |
| La Sierra College, Arlington, Calif. | 1922 | G. T. Anderson | 766 | 299 | 51 | — | 18,450 |
| Laval University, Quebec, Can. | 1852 | Ferdinand Vandry | 6,015 | 325 | 900 | 2,500,000 | 919,818 |
| Lawrence College, Appleton, Wis. | 1847 | Nathan M. Pusey | 1,062 | 394 | 75 | 1,500,000 | 75,716 |
| Lebanon Valley College, Annville, Pa. | 1866 | Clyde A. Lynch | 817 | 444 | 50 | 1,172,642 | 33,706 |
| Lehigh University, Bethlehem, Pa. | 1865 | Martin D. Whitaker | 3,297 | 2,342 | 312 | 8,000,000 | 275,000 |
| LeMoyne College, Memphis, Tenn. | 1870 | Hollis F. Price | 371 | 129 | 23 | 4,000 | 18,000 |
| Lenoir Rhyne College, Hickory, N.C. | 1891 | P. E. Monroe | 821 | 438 | 43 | 800,000 | 28,000 |
| Lewis and Clark College, Portland, Ore. | 1867 | Morgan S. Odell | 1,000 | 554 | 72 | 350,000 | 25,000 |
| Limestone College, Gaffney, S.C. | 1845 | Robert C. Granberry | 424 | 44 | 31 | 500,000 | 26,000 |
| Lincoln College (Jr.), Lincoln, Ill. | 1865 | M. D. McLean | 124 | 69 | 13 | 325,906 | 13,000 |
| Lincoln Memorial Univ., Harrogate, Tenn. | 1897 | Robert L. Kincaid | 551 | 207 | 30 | 836,848 | 30,000 |
| Lincoln University, Jefferson City, Mo. | 1866 | Sherman D. Scruggs | 958 | 399 | 68 | — | 35,000 |

| Institution and Location | Year Founded | Chief Executive | Full Time Students | Students under Veterans' Program | Faculty | Endowment | Library Volumes |
|---|---|---|---|---|---|---|---|
| Lincoln University, Lincoln University, Pa. | 1854 | Horace M. Bond | 538 | 245 | 41 | $1,028,776 | 42,000 |
| Lindenwood College, St. Charles, Mo. | 1827 | Franc L. McCluer | 477 | — | 50 | 2,982,856 | 30,000 |
| Linfield College, McMinnville, Oregon. | 1858 | Harry L. Dillin | 829 | 360 | 50 | 916,093 | 30,000 |
| Little Rock Junior College, Little Rock, Ark. | 1927 | John A. Larson | 785 | 378 | 37 | 1,500,000 | 19,000 |
| Livingstone College, Salisbury, N.C. | 1879 | William J. Trent | 385 | 84 | 27 | 46,500 | 22,076 |
| Long Beach City Col. (Jr.), Long Beach, Calif. | 1927 | George E. Dotson | 3,747 | 1,147 | 138 | — | 41,778 |
| Lon Morris Col. (Jr.), Jacksonville, Tex. | 1873 | C. E. Peeples | 290 | 78 | 17 | 250,000 | 7,864 |
| Loras College, Dubuque, Ia. | 1839 | M. J. Martin | 1,473 | 791 | 73 | 1,500,000 | 104,000 |
| Loretto Heights College, Loretto, Colorado | 1918 | Sister Frances Marie | 389 | 6 | 49 | — | 20,015 |
| Los Angeles City Col. (Jr.), Los Angeles, Calif. | 1929 | Einar W. Jacobsen | 10,382 | 4,000 | 555 | — | 60,000 |
| Louisiana College, Pineville, La. | 1906 | Edgar Godbold | 820 | 272 | 43 | 630,000 | 17,395 |
| Louisiana Polytechnic Institute, Ruston, La. | 1894 | Claybrook Cottingham | 2,575 | 1,264 | 165 | — | 38,360 |
| Louisiana State University and A. and M. College, Baton Rouge, La. | 1860 | Harold Walter Stoke | 11,122 | 5,408 | 690 | 329,313 | 416,108 |
| Louisville, University of, Louisville, Ky. | 1837 | John W. Taylor | 4,560 | 2,685 | 414 | 1,250,000 | 171,169 |
| Loyola College, Baltimore, Md. | 1852 | F. X. Talbot | 965 | 644 | 55 | 70,000 | 37,600 |
| Loyola University, Chicago, Ill. | 1870 | James T. Hussey | 4,300 | 3,160 | 633 | 1,424,864 | 262,273 |
| Loyola University, New Orleans, La. | 1912 | Thomas J. Shields | 1,937 | 1,151 | 200 | 5,000,000 | 115,000 |
| Loyola Univ. of Los Angeles, Los Angeles, Calif. | 1911 | Edward J. Whelan | 1,923 | 1,693 | 64 | 2,124,330 | 50,900 |
| Luther College, Decorah, Ia. | 1861 | O. J. H. Preus | 835 | 378 | 51 | 575,400 | 90,000 |
| Lycoming College, Williamsport, Pa. | 1848 | John W. Long | 824 | 480 | 50 | 487,611 | 12,556 |
| Lynchburg College, Lynchburg, Va. | 1903 | Riley B. Montgomery | 635 | 325 | 41 | 321,838 | 23,000 |
| Lyons Township Junior Col., La Grange, Ill. | 1929 | George S. Olsen | 501 | 206 | 12 | — | 8,000 |
| M | | | | | | | |
| Macalester College, St. Paul, Minn. | 1885 | Charles J. Turck | 1,572 | 642 | 119 | 2,350,000 | 46,500 |
| McGill University, Montreal, Que. Can. | 1821 | F. Cyril James | 7,808 | 3,878 | 1,159 | 42,856,426 | 461,297 |
| McMaster University, Hamilton, Ont., Can. | 1887 | G. P. Gilmour | 1,162 | 376 | 81 | 1,775,000 | 62,000 |
| MacMurray Col. for Wom., Jacksonville, Ill. | 1846 | C. P. McClelland | 733 | 6 | 64 | 3,786,560 | 46,655 |
| McPherson College, McPherson, Kan. | 1887 | W. W. Peters | 408 | 124 | 31 | 411,000 | 15,000 |
| Madison College, Harrisonburg, Va. | 1908 | Samuel P. Duke | 1,217 | 81 | 91 | 50,000 | 41,212 |
| Maine, University of, Orono, Me. | 1865 | Arthur A. Hauck | 4,757 | 3,187 | 280 | 1,257,807 | 215,551 |
| Manchester College, N. Manchester, Ind. | 1889 | V. F. Schwalm | 831 | 222 | 48 | 624,819 | 32,660 |
| Manhattan College, New York, N.Y. | 1853 | Brother B. Thomas | 2,678 | 1,788 | 150 | — | 90,550 |
| Manhattanville Col. of Sac. Hrt., N.Y., N.Y. | 1841 | Mother E. M. O'Byrne | 510 | 22 | 73 | 400,902 | 75,461 |
| Manitoba, University of, Winnipeg, Man., Can. | 1877 | Albert W. Trueman | 6,449 | 1,847 | 317 | 1,391,052 | 131,034 |
| Mankato State Teachers College, Mankato, Minn. | 1867 | C. L. Crawford | 965 | 404 | 59 | — | 29,789 |
| Marietta College, Marietta, Ohio | 1835 | W. Bay Irvine | 1,167 | 752 | 67 | 1,742,724 | 129,864 |
| Marin Junior College, Kentfield, Calif. | 1926 | Ward H. Austin | 1,007 | 439 | 40 | — | 14,903 |
| Marion Institute (Jr.), Marion, Ala. | 1842 | James T. Murfee, II | 360 | 80 | 25 | — | 4,534 |
| Marquette University, Milwaukee, Wis. | 1864 | Peter A. Brooks | 7,514 | 5,141 | 572 | 2,300,000 | 160,000 |
| Marshall College, Huntington, W.Va. | 1837 | Stewart H. Smith | 3,008 | 1,563 | 157 | — | 59,481 |
| Mars Hill College (Jr.), Mars Hill, N.C. | 1856 | Hoyt Blackwell | 985 | 241 | 52 | 152,700 | 18,775 |
| Mary Allen College, Crockett, Tex. | 1944 | G. L. Prince | 185 | 53 | 15 | — | 3,500 |
| Mary Baldwin College, Staunton, Va. | 1842 | Frank Bell Lewis | 342 | 1 | 36 | 525,000 | 34,000 |
| Marygrove College, Detroit, Mich. | 1910 | Sister M. Honora | 801 | 3 | 91 | — | 50,404 |
| Mary Hardin-Baylor College, Belton, Tex. | 1845 | Gordon G. Singleton | 438 | 17 | 45 | 1,253,159 | 30,546 |
| Maryland, University of, College Park and Baltimore, Md. | 1807 | H. C. Byrd | 10,213 | 5,700 | 1,103 | 2,831,712 | 201,142 |
| Maryland State Tch. Col., Salisbury, Md. | 1925 | J. D. Blackwell | 307 | 57 | 20 | — | 45,000 |
| Maryland State Tch. Col., Towson, Md. | 1865 | Earle T. Hawkins | 610 | 114 | 44 | — | 38,428 |
| Marylhurst College, Marylhurst, Ore. | 1930 | Sister M. Rose Augusta | 272 | 9 | 33 | 55,000 | 22,000 |
| Mary Manse College, Toledo, Ohio | 1922 | Mother Catherine | 175 | 5 | 46 | — | 22,113 |
| Marymount College, Salina, Kan. | 1922 | Mother Chrysostom | 258 | 3 | 34 | — | 21,925 |
| Marymount College, Tarrytown, N.Y. | 1907 | Mother M. Thérèse | 542 | — | 59 | 1,000,000 | 19,927 |
| Maryville College, Maryville, Tenn. | 1819 | Ralph W. Lloyd | 898 | 240 | 49 | 1,932,548 | 51,000 |
| Maryville Col. of the Sac. Hrt., St. Louis, Mo. | 1872 | Mother Odeide Mouton | 285 | — | 33 | — | 25,300 |
| Mary Washington College of the University of Virginia, Fredericksburg, Va. | 1908 | Morgan L. Combs | 1,472 | 45 | 82 | 63,000 | 60,000 |
| arywood College, Scranton, Pa. | 1915 | Sister M. Sylvia | 580 | 13 | 58 | 75,000 | 39,821 |
| ason City Junior Col., Mason City, Ia. | 1918 | C. H. Beem | 243 | 146 | 14 | — | 7,000 |
| ass., Univ. of, Amherst, Mass. | 1863 | Ralph A. Van Meter | 4,110 | 2,926 | 199 | 300,000 | 140,000 |
| ass. Institute of Tech., Cambridge, Mass. | 1861 | Karl T. Compton | 5,639 | 2,900 | 1,174 | 47,000,000 | 400,000 |
| ass. State Tch. Col., Bridgewater, Mass. | 1840 | John J. Kelly | 537 | 84 | 42 | 15,000 | 23,627 |
| ss. State Tch. Col., Fitchburg, Mass. | 1894 | William J. Sanders | 438 | 194 | 45 | — | 37,000 |
| ss. State Tch. Col., Framingham, Mass. | 1839 | Martin F. O'Connor | 469 | 8 | 35 | — | 20,000 |
| ss. State Tch. Col., N. Adams, Mass. | 1894 | Grover C. Bowman | 167 | 61 | 18 | — | 12,808 |
| ss. State Tch. Col., Worcester, Mass. | 1871 | Eugene A. Sullivan | 263 | 66 | 18 | — | 18,000 |
| dical Evangelists, College of, Loma Linda nd Los Angeles, Calif. | 1909 | W. E. MacPherson | 602 | 136 | 476 | — | 38,000 |
| mphis State College, Memphis, Tenn. | 1912 | J. M. Smith | 1,908 | 917 | 83 | — | 36,000 |
| cer University, Macon, Ga. | 1833 | Spright Dowell | 1,312 | 702 | 70 | 2,666,874 | 50,000 |
| cyhurst College, Erie, Pa. | 1926 | Mthr. M. F. Borgia Egan | 281 | — | 34 | 1,680,000 | 18,500 |
| edith College, Raleigh, N.C. | 1891 | Carlyle Campbell | 550 | 2 | 47 | 584,773 | 31,000 |
| Meridian Municipal Jr. Col., Meridian, Miss. | 1937 | H. M. Ivy | 734 | 93 | 40 | — | 10,117 |
| Miami, University of, Coral Gables, Fla. | 1925 | Bowman F. Ashe | 7,614 | 4,575 | 370 | $1,500,000 | 114,632 |
| Miami University, Oxford, Ohio | 1809 | Ernest H. Hahne | 5,093 | 2,142 | 334 | 14,900 | 201,000 |
| Michigan, University of, Ann Arbor, Mich. | 1817 | Alexander G. Ruthven | 20,637 | 11,742 | 1,100 | 17,662,835 | 1,299,720 |
| Michigan Col. of Min. and Tech., Houghton, Mich. | 1885 | Grover C. Dillman | 2,223 | 1,647 | 172 | — | 50,000 |
| Michigan State College, E. Lansing, Mich. | 1855 | John A. Hannah | 14,045 | 8,678 | 1,060 | 2,137,270 | 222,500 |
| Michigan St. Normal Col., Ypsilanti, Mich. | 1849 | John M. Munson | 2,358 | 1,003 | 213 | 70,000 | 122,910 |
| Middlebury College, Middlebury, Vt. | 1800 | Samuel S. Stratton | 1,212 | 521 | 72 | 4,800,000 | 175,000 |
| Middle Georgia College (Jr.), Cochran, Ga. | 1928 | Lloyd A. Moll | 456 | 186 | 18 | — | 10,000 |
| Middle Tenn. St. Col., Murfreesboro, Tenn. | 1911 | Q. M. Smith | 963 | 495 | 50 | — | 28,272 |
| Midland College, Fremont, Neb. | 1887 | W. P. Hieronymus | 448 | 166 | 35 | 217,751 | 26,500 |
| Millsaps College, Jackson, Miss. | 1892 | Marion L. Smith | 802 | 342 | 42 | 1,103,072 | 30,000 |
| Mills College, Oakland, Calif. | 1852 | Lynn White, Jr. | 737 | 12 | 105 | 2,700,000 | 100,000 |
| Milwaukee-Downer Col., Milwaukee, Wis. | 1851 | Lucia R. Briggs | 421 | 25 | 49 | 2,429,561 | 49,262 |
| Miner Teachers College, Washington, D.C. | 1851 | Eugene A. Clark | 575 | 37 | 51 | — | 39,028 |
| Minnesota, Univ. of, Minneapolis, Minn. | 1851 | James L. Morrill | 28,312 | 16,736 | 2,733 | 31,071,477 | 1,415,000 |
| Misericordia College, Dallas, Pa. | 1923 | Sister Mary Gonzaga | 406 | 10 | 46 | 1,100,000 | 22,800 |
| Mississippi, University of, University, Miss. | 1848 | J. D. Williams | 3,003 | 1,656 | 207 | 752,558 | 131,628 |
| Mississippi College, Clinton, Miss. | 1826 | D. M. Nelson | 1,015 | 527 | 55 | 700,000 | 33,000 |
| Mississippi Southern Col., Hattiesburg, Miss. | 1912 | R. C. Cook | 1,565 | 797 | 75 | 175,661 | 31,052 |
| Mississippi State Col., State College, Miss. | 1878 | Fred T. Mitchell | 3,451 | 2,487 | 208 | 239,789 | 105,743 |
| Mississippi St. Col. for Wom., Columbus, Miss. | 1884 | B. L. Parkinson | 1,134 | 2 | 75 | — | 70,000 |
| Missouri, University of, Columbia, Mo. | 1839 | F. A. Middlebush | 14,171 | 9,149 | 842 | 2,638,463 | 547,000 |
| Missouri Valley College, Marshall, Mo. | 1888 | J. Ray Cable | 550 | 290 | 33 | 600,000 | 31,000 |
| Modesto Junior College, Modesto, Calif. | 1921 | Henry T. Tyler | 1,267 | 451 | 70 | — | 24,027 |
| Monmouth College, Monmouth, Ill. | 1853 | James Harper Grier | 913 | 321 | 64 | 2,013,000 | 53,000 |
| Montana School of Mines, Butte, Mont. | 1893 | Francis A. Thomson | 347 | 256 | 26 | 850,000 | 19,600 |
| Montana State College, Bozeman, Mont. | 1893 | Roland R. Renne | 3,165 | 1,727 | 257 | 1,910,573 | 110,000 |
| Montana State Normal Col., Dillon, Montana | 1893 | Rush Jordan | 188 | 83 | 21 | 13,000 | 26,200 |
| Montana State University, Missoula, Mont. | 1893 | James A. McCain | 3,240 | 1,935 | 156 | 881,422 | 268,340 |
| Monticello College (Jr.), Godfrey, Ill. | 1838 | John R. Young | 346 | — | 37 | 68,000 | 19,759 |
| Montreal, University of, Montreal, Que., Can. | 1876 | Olivier Maurault | 5,376 | 302 | 1,000 | 181,660 | 100,000 |
| Moorhead State Tch. Col., Moorhead, Minn. | 1887 | O. W. Snarr | 640 | 216 | 57 | — | 25,603 |
| Moravian Col. and Theol. Sem., Bethlehem, Pa. | 1807 | Raymond S. Haupert | 378 | 273 | 28 | 581,772 | 45,000 |
| Morehead State Tch. Col., Morehead, Ky. | 1923 | William J. Baird | 435 | 239 | 56 | — | 34,860 |
| Morehouse College, Atlanta, Ga. | 1867 | Benjamin E. Mays | 858 | 477 | 41 | 1,900,000 | 80,000 |
| Morgan Park Junior College, Chicago, Ill. | 1933 | Albert G. Dodd | 399 | 191 | 18 | 5,500 | 6,123 |
| Morgan State College, Baltimore, Md. | 1867 | D. O. W. Holmes | 1,269 | 489 | 78 | — | 45,000 |
| Morningside College, Sioux City, Ia. | 1889 | E. A. Roadman | 1,143 | 624 | 65 | 425,773 | 54,600 |
| Morris Brown College, Atlanta, Ga. | 1881 | W. A. Fountain, Jr. | 806 | 275 | 36 | 480,428 | 7,872 |
| Morton Junior College, Cicero, Ill. | 1924 | Wm. P. MacLeon | 943 | 278 | 65 | — | 16,312 |
| Mt. Allison Univ., Sackville, N.B., Can. | 1840 | W. T. R. Flemington | 946 | 275 | 60 | 1,339,184 | 55,000 |
| Mt. Aloysius Junior College, Cresson, Pa. | 1939 | Sister M. Magdalene | 100 | 1 | 17 | — | 6,200 |
| Mt. Holyoke College, S. Hadley, Mass. | 1837 | Roswell G. Ham | 1,134 | 4 | 198 | 6,205,039 | 200,000 |
| Mt. Mary College, Milwaukee, Wis. | 1915 | Edward A. Fitzpatrick | 700 | 14 | 47 | 52,316 | 35,600 |
| Mt. Mercy College, Pittsburgh, Pa. | 1929 | Mother M. F. McConnell | 375 | 68 | 43 | — | 28,000 |
| Mt. St. Agnes Col. (Jr.), Mt. Wash., Md. | 1867 | Sister M. Placide | 204 | — | 23 | — | 14,000 |
| Mt. St. Joseph Jr. Col., Maple Mount, Ky. | 1925 | Sis. M. Christina Eckmans | 147 | 20 | 18 | — | 11,115 |
| Mt. St. Joseph-on-the-Ohio, Col. of, Mt. St. Joseph, Ohio. | 1854 | Mother Mary Zoe | 415 | 9 | 43 | 1,725,000 | 24,000 |
| Mt. St. Mary College, Hooksett, N. H. | 1934 | Sister M. Mauritia | 183 | 2 | 23 | — | 16,938 |
| Mt. St. Mary's College, Emmitsburg, Md. | 1808 | John L. Sheridan | 595 | 403 | 35 | 302,100 | 45,000 |
| Mt. St. Mary's College, Los Angeles, Calif. | 1925 | Sister Marie de Lourdes | 397 | 12 | 44 | — | 20,000 |
| Mt. St. Scholastica College, Atchison, Kan. | 1930 | Mother Lucy Dooley | 401 | 9 | 43 | — | 27,000 |
| Mt. St. Vincent, College of, New York, N.Y. | 1847 | Sister Catharine Marie | 610 | 1 | 55 | 241,932 | 30,261 |
| Mt. San Antonio College, Pomona, Calif. | 1946 | George H. Bell | 806 | 281 | 36 | — | 6,112 |
| Mt. Union College, Alliance, Ohio | 1846 | Charles B. Ketcham | 902 | 530 | 47 | 1,357,207 | 75,000 |
| Muhlenberg College, Allentown, Pa. | 1848 | Levering Tyson | 1,355 | 937 | 92 | 1,047,253 | 77,000 |
| Multnomah College (Jr.), Portland, Ore. | 1897 | Edward L. Clark | 1,400 | 900 | 65 | 25,000 | 6,500 |
| Mundelein College, Chicago, Ill. | 1930 | Sister M. Josephine | 977 | — | 70 | — | 26,734 |
| Murray State Tch. College, Murray, Ky. | 1923 | Ralph H. Woods | 1,509 | 803 | 93 | — | 38,615 |
| Muskegon Junior Col., Muskegon, Mich. | 1926 | A. G. Umbreit | 510 | 226 | 24 | — | 180,000 |
| Muskingum College, New Concord, Ohio | 1837 | R. N. Montgomery | 936 | 329 | 63 | 931,866 | 37,737 |
| N | | | | | | | |
| National College of Educ., Evanston, Ill. | 1886 | Edna Dean Baker | 364 | 16 | 52 | 140,910 | 32,000 |
| Nazareth College, Louisville, Ky. | 1920 | Sister Mary Anastasia Coody | 434 | 8 | 53 | 18,300 | 23,500 |
| Nazareth College, Nazareth, Mich. | 1897 | Sister Mary Kevin | 223 | 2 | 30 | — | 28,000 |
| Nazareth Col. of Rochester, Rochester, N.Y. | 1924 | Mother Rose Miriam Smyth | 423 | 6 | 50 | — | 22,000 |
| Nebraska, University of, Lincoln, Neb. | 1869 | Reuben G. Gustavson | 10,163 | 6,000 | 695 | 1,151,219 | 500,000 |
| Nebraska State Tch. Col., Chadron, Neb. | 1911 | Wiley G. Brooks | 326 | 132 | 41 | — | 30,000 |
| Nebraska State Tch. Col., Kearney, Neb. | 1905 | Herbert L. Cushing | 773 | 328 | 47 | | |
| Nebraska State Tch. Col., Wayne, Neb. | 1910 | Victor P. Morey | | | | | |

| Institution and Location | Year Founded | Chief Executive | Full Time Students | Students under Veterans' Program | Faculty | Endowment | Library Volumes |
|---|---|---|---|---|---|---|---|
| Nebraska Wesleyan University, Lincoln, Neb. | 1887 | John L. Knight, Jr. | 807 | 299 | 48 | $919,415 | 36,920 |
| Nevada, University of, Reno, Nev. | 1874 | John O. Moseley | 1,716 | 853 | 101 | 690,534 | 76,800 |
| Newark Col. of Engineering, Newark, N.J. | 1881 | Allan R. Cullimore | 1,444 | 1,060 | 129 | 96,316 | 19,642 |
| Newberry College, Newberry, S.C. | 1856 | James C. Kinard | 608 | 305 | 32 | 300,000 | 26,000 |
| New Brunswick, University of, Fredericton, N.B., Can. | 1800 | — | 1,360 | 910 | 80 | 300,000 | 50,000 |
| New Hampshire, University of, Durham, N.H. | 1866 | Frank W. Randall | 3,669 | 2,207 | 255 | 1,460,974 | 146,026 |
| New Haven State Tch. Col., New Haven, Conn. | 1893 | Samuel M. Brownell | 599 | 149 | 55 | — | 24,600 |
| New Jersey Col. for Women (Rutgers Univ.), New Brunswick, N. J. | 1918 | Margaret T. Corwin | 1,259 | 13 | 108 | — | 105,000 |
| New Jersey State Tch. Col., Glassboro, N.J.. | 1923 | Edgar F. Bunce | 470 | 199 | 37 | — | 25,000 |
| New Jersey State Tch. Col., Jersey City, N.J. | 1929 | Forrest A. Irwin | 685 | 200 | 55 | — | 40,000 |
| New Jersey State Tch. Col., Montclair, N.J. | 1908 | Harry A. Sprague | 1,303 | 513 | 94 | 48,500 | 54,239 |
| New Jersey State Tch. Col., Newark, N.J.. | 1912 | John B. Dougall | 557 | 130 | 40 | — | 39,800 |
| New Jersey State Tch. Col., Paterson, N.J. | 1855 | Clair S. Wightman | 639 | 282 | 38 | — | 21,574 |
| New Jersey State Tch. Col., Trenton, N.J. | 1855 | Roscoe L. West | 875 | 203 | 82 | — | 53,907 |
| New Mexico, University of, Albuquerque, N.M. | 1889 | J. Philip Wernette | 4,167 | 2,377 | 259 | 34,245 | 136,000 |
| New Mexico A.and M.Col., State College, N.M. | 1889 | John R. Nichols | 1,666 | 1,008 | 150 | 562,117 | 58,000 |
| New Mexico Highlands Univ., Las Vegas, N.M. | 1893 | Edward Eyring | 783 | 498 | 60 | — | 34,476 |
| New Mexico Military Inst. (Jr.), Roswell, N.M. | 1893 | Hugh M. Milton, II | 599 | 7 | 50 | 898,288 | 25,520 |
| New Mexico School of Mines, Socorro, N.M. | 1889 | E. J. Workman | 230 | 180 | 20 | — | 10,000 |
| New Mexico St. Tch. Col., Silver City, N.M.. | 1893 | H. W. James | 403 | 206 | 44 | — | 27,000 |
| New Rochelle, Col. of, New Rochelle, N.Y. | 1904 | Mother Thomas Aquinas | 860 | 3 | 66 | 108,020 | 58,447 |
| New York, Col. of the City of, N.Y., N.Y. | 1847 | Harry N. Wright | 11,836 | 5,439 | 875 | 534,633 | 331,377 |
| New York State Col. for Tch., Albany, N.Y. | 1844 | Milton G. Nelson | 1,331 | 266 | 120 | — | 35,000 |
| New York State Tch. Col., Brockport, N.Y. | 1866 | Donald M. Tower | 808 | 264 | 60 | — | 25,000 |
| New York State Tch. Col., Buffalo, N.Y. | 1872 | Harry W. Rockwell | 1,659 | 386 | 125 | — | 33,000 |
| New York State Tch. Col., Cortland, N.Y. | 1863 | Donnal V. Smith | 1,100 | 323 | 68 | — | 26,630 |
| New York State Tch. Col., Fredonia, N.Y. | 1866 | Leslie R. Gregory | 603 | 148 | 70 | — | 19,920 |
| New York State Tch. Col., Geneseo, N.Y. | 1867 | Herbert G. Espy | 513 | 63 | 38 | — | 34,296 |
| New York State Tch. Col., New Paltz, N.Y. | 1886 | Wm. J. Haggerty | 354 | 76 | 62 | — | 16,200 |
| New York State Tch. Col., Oneonta, N.Y. | 1889 | Charles W. Hunt | 412 | 49 | 53 | — | 35,259 |
| New York State Tch. Col., Oswego, N.Y.. | 1861 | Harvey M. Rice | 1,159 | 458 | 70 | — | 44,000 |
| New York State Tch. Col., Plattsburg, N.Y. | 1889 | Charles C. Ward | 600 | 56 | 60 | — | 25,000 |
| New York State Tch. Col., Potsdam, N.Y.. | 1869 | Frederick W. Crumb | 553 | 60 | 66 | — | 21,407 |
| New York University, New York, N.Y. | 1831 | Harry W. Chase | 22,408 | 12,621 | 3,081 | 10,963,036 | 748,119 |
| Niagara University, Niagara Univ., N.Y. | 1856 | Francis L. Meade | 1,425 | 876 | 122 | — | 50,000 |
| North Carolina, Agri. and Tech. Col. of, Greensboro, N.C.. | 1891 | F. D. Bluford | 2,748 | 1,636 | 130 | — | 32,000 |
| North Carolina, Univ. of, Chapel Hill, N.C. | 1789 | Frank Porter Graham | 7,528 | 4,995 | 509 | 3,805,000 | 475,000 |
| North Carolina, Woman's College of the University of, Greensboro, N.C. | 1892 | W. C. Jackson | 2,063 | 44 | 183 | — | 123,361 |
| North Carolina Col. for Negroes, Durham, N.C. | 1910 | — | 1,000 | 286 | 52 | — | 31,831 |
| North Carolina State College of Agri. and Eng., Raleigh, N.C. | 1889 | J. W. Harrelson | 5,290 | 4,011 | 452 | — | 81,238 |
| North Central College, Naperville, Ill. | 1861 | C. H. Geiger | 890 | 356 | 50 | 1,200,000 | 33,279 |
| North Dakota, Univ. of, Grand Forks, N.D. | 1883 | John C. West | 2,627 | 1,574 | 175 | 1,696,400 | 153,000 |
| North Dakota Agricultural Col., Fargo, N.D. | 1889 | J. H. Longwell | 2,622 | 1,427 | 178 | 1,628,603 | 67,000 |
| North Dakota State Normal and Industrial College, Ellendale, N.D. | 1889 | J. C. McMillan | 168 | 61 | 23 | — | 19,000 |
| North Dakota State Tch. Col., Dickinson, N.D. | 1918 | Charles E. Scott | 262 | 115 | 29 | — | 17,589 |
| North Dakota State Tch. Col., Mayville, N.D. | 1889 | C. P. Lura | 220 | 77 | 24 | — | 20,457 |
| North Dakota State Tch. Col., Minot, N.D. | 1913 | C. C. Swain | 722 | 240 | 57 | - | 30,000 |
| North Dakota State Tch. Col., Valley City, N.D. | 1889 | R. L. Lokken | 394 | 128 | 45 | - | 38,000 |
| Northeastern State College, Tahlequah, Okla. | 1846 | John Vaughan | 1,037 | 470 | 57 | — | 42,128 |
| Northeastern University, Boston, Mass. | 1898 | Carl S. Ell | 3,719 | 2,714 | 150 | 821,132 | 44,082 |
| Northeast Junior Col., L.S.U., Monroe, La. | 1931 | W. Rodney Cline | 745 | 289 | 37 | — | 10,250 |
| Northeast Missouri St. Tch. Col., Kirksville, Mo. | 1867 | Walter H. Ryle | 1,110 | 477 | 51 | — | 90,000 |
| Northern Illinois State Tch. Col., De Kalb, Ill.. | 1895 | Karl L. Adams | 1,635 | 687 | 114 | — | 64,925 |
| Northern Idaho Col. of Educ., Lewiston, Ida. | 1893 | Glenn W. Todd | 386 | 176 | 36 | — | 21,000 |
| Northern Michigan Col. of Educ., Marquette, Mich.. | 1899 | H. A. Tape | 1,005 | 535 | 60 | - | 39,130 |
| Northern Montana Col. (Jr.), Havre, Mont. | 1929 | G. H. Vande Bogart | 350 | 113 | 24 | — | 20,113 |
| Northern State Tch. Col., Aberdeen, S.D. | 1901 | N. E. Steele | 771 | 363 | 50 | — | 25,000 |
| North Georgia Col. (Jr.), Dahlonega, Ga. | 1873 | J. C. Rogers | 702 | 172 | 42 | — | 24,600 |
| North Park College (Jr.), Chicago, Ill.. | 1891 | Algoth Ohlson | 1,329 | 409 | 42 | 330,985 | 18,234 |
| North Texas Agri. Col. (Jr.), Arlington, Tex.. | 1917 | E. H. Hereford | 2,029 | 920 | 98 | — | 24,836 |
| North Texas State Tch. Col., Denton, Tex. | 1890 | W. J. McConnell | 4,670 | 1,742 | 250 | — | 188,000 |
| Northwestern State College, Alva, Okla. | 1897 | Sabin C. Percefull | 545 | 237 | 40 | — | 24,762 |
| Northwestern State Col., Natchitoches, La. | 1884 | Joseph E. Gibson | 1,633 | 577 | 100 | — | 56,359 |
| Northwestern Univ., Evanston and Chgo., Ill.. | 1851 | Franklyn B. Snyder | 10,490 | 5,836 | 2,043 | 62,500,000 | 850,000 |
| Northwest Missouri St. Tch. Col., Maryville, Mo. | 1905 | J. W. Jones | 903 | 356 | 65 | — | 34,620 |
| Northwest Nazarene College, Nampa, Ida. | 1913 | Lewis T. Corlett | 538 | 182 | 26 | — | 15,070 |
| Norwich University, Northfield, Vt. | 1819 | Homer L. Dodge | 617 | 314 | 45 | 1,123,397 | 41,000 |
| Notre Dame, University of, Notre Dame, Ind. | 1842 | John J. Cavanaugh | 4,757 | 3,300 | 315 | $4,057,306 | 232,896 |
| Notre Dame College, South Euclid, Ohio | 1922 | Mother Mary Agnes | 304 | 1 | 33 | — | 23,660 |
| Notre Dame College of Staten Island, Staten Island, N.Y. | 1933 | Mother Saint Egbert | 300 | — | 26 | — | 12,000 |
| Notre Dame Jr. Col., St. Louis, Mo. | 1925 | Sister Chrysologa | 38 | — | 8 | — | 10,000 |
| Notre Dame of Maryland, Col. of, Baltimore, Md. | 1873 | Sister Mary Frances | 416 | 1 | 56 | 102,000 | 27,000 |
| O | | | | | | | |
| Oakwood College, Huntsville, Ala | 1896 | F. L. Peterson | 534 | 124 | 21 | — | 8,000 |
| Oberlin College, Oberlin, Ohio | 1833 | William E. Stevenson | 2,131 | 741 | 164 | 23,523,538 | 464,459 |
| Occidental College, Los Angeles, Calif. | 1887 | Arthur G. Coons | 1,205 | 578 | 89 | 1,349,620 | 81,000 |
| Ohio State University, Columbus, Ohio | 1870 | Howard L. Bevis | 23,882 | 14,292 | 1,430 | 2,302,881 | 745,410 |
| Ohio University, Athens, Ohio | 1804 | John Calhoun Baker | 6,157 | 3,432 | 345 | 98,205 | 165,758 |
| Ohio Wesleyan University, Delaware, Ohio | 1842 | C. E. Ficken | 2,094 | 741 | 129 | 4,620,899 | 180,102 |
| Oklahoma, University of, Norman, Okla. | 1890 | George Lynn Cross | 12,356 | 7,287 | 463 | 4,040,982 | 385,000 |
| Oklahoma A. and M. College, Stillwater, Okla. | 1891 | Henry G. Bennett | 11,052 | 6,714 | 740 | 4,228,077 | 203,293 |
| Oklahoma Col. for Women, Chickasha, Okla. | 1908 | Dan Procter | 675 | 3 | 58 | — | 35,600 |
| Omaha, University of, Omaha, Neb. | 1908 | Rowland Haynes | 1,991 | 1,003 | 71 | 141,404 | 80,000 |
| Oregon, Univ. of, Eugene and Portland, Ore. | 1872 | Harry K. Newburn | 6,642 | 3,530 | 374 | 1,378,840 | 449,331 |
| Oregon College of Educ., Monmouth, Ore. | 1861 | Henry M. Gunn | 468 | 219 | 38 | — | 30,828 |
| Oregon State College, Corvallis, Ore. | 1868 | A. L. Strand | 7,489 | 4,194 | 521 | 208,642 | 220,500 |
| Ottawa, University of, Ottawa, Ont., Can. | 1848 | J. C. Laframboise | 1,853 | 64 | 183 | 119,663 | 140,000 |
| Ottawa University, Ottawa, Kan. | 1865 | A. B. Martin | 582 | 223 | 30 | 500,000 | 20,000 |
| Otterbein College, Westerville, Ohio. | 1847 | J. Gordon Howard | 924 | 401 | 64 | 1,260,871 | 36,000 |
| Ottumwa Heights Col. (Jr.), Ottumwa, Ia.. | 1925 | Sister Marie Ancille | 105 | 1 | 21 | — | 12,000 |
| Ouachita College, Arkadelphia, Ark. | 1886 | James R. Grant | 786 | 270 | 42 | 600,000 | 28,000 |
| Our Lady of the Elms, Col. of, Chicopee, Mass. | 1928 | Thomas M. O'Leary | 268 | — | 25 | — | 20,437 |
| Our Lady of the Lake Col., San Antonio, Tex.. | 1912 | John L. McMahon | 351 | 25 | 53 | 392,361 | 49,050 |
| P | | | | | | | |
| Pacific, College of the, Stockton, Calif. | 1851 | Robert E. Burns | 740 | 379 | 32 | 628,987 | 42,000 |
| Pacific Lutheran Col., Parkland, Wash. | 1894 | S. C. Eastvold | 785 | 400 | 47 | 65,180 | 35,000 |
| Pacific Union College, Angwin, Calif. | 1909 | P. W. Christian | 754 | 257 | 79 | — | 36,000 |
| Pacific University, Forest Grove, Ore.. | 1849 | Walter C. Giersbach | 932 | 572 | 46 | 400,000 | 32,977 |
| Packer Collegiate Inst. (Jr.), Brooklyn, N.Y. | 1845 | Paul D. Shafer | 118 | — | 24 | 1,433,040 | 12,303 |
| Paine College, Augusta, Ga. | 1882 | Edmund C. Peters | 349 | 79 | 21 | 37,095 | 21,000 |
| Palm Beach Jr. Col., W. Palm Beach, Fla. | 1933 | John I. Leonard | 252 | 83 | 19 | — | 5,256 |
| Palomar College, Vista, Calif. | 1946 | D. C. McNaughton | 225 | 65 | 21 | — | 2,500 |
| Paris Junior College, Paris, Tex. | 1924 | J. R. McLemore | 583 | 205 | 33 | — | 8,550 |
| Park College, Parkville, Mo. | 1875 | J. L. Zwingle | 526 | 145 | 39 | 1,900,000 | 42,000 |
| Parsons College, Fairfield, Ia. | 1875 | Tom E. Shearer | 478 | 246 | 37 | 474,070 | 25,800 |
| Pasadena City Col., Pasadena, Calif. | 1924 | John W. Harbeson | 5,600 | 2,200 | 240 | — | 37,917 |
| Pearl River Junior Col., Poplarville, Miss. | 1922 | R. D. McLendon | 414 | 236 | 27 | — | 6,000 |
| Pennsylvania, Univ. of, Philadelphia, Pa. | 1740 | George W. McClelland | 9,705 | 6,520 | 1,862 | 31,000,000 | 1,123,206 |
| Pennsylvania Col. for Wom., Pittsburgh, Pa. | 1869 | Paul R. Anderson | 500 | 9 | 57 | 1,110,000 | 32,000 |
| Pennsylvania State Col., State College, Pa. | 1855 | James Milholland | 10,200 | 6,829 | 1,040 | 517,000 | 281,237 |
| Pa. State Tch. Col., Bloomsburg, Pa. | 1839 | Harvey A. Andruss | 831 | 433 | 45 | — | 33,255 |
| Pa. State Tch. Col., California, Pa. | 1852 | Robert M. Steele | 916 | 543 | 47 | — | 22,400 |
| Pa. State Tch. Col., Cheyney, Pa. | 1837 | Leslie Pinckney Hill | 345 | 80 | 27 | — | 15,930 |
| Pa. State Tch. Col., Clarion, Pa. | 1867 | Paul G. Chandler | 746 | 360 | 40 | — | 23,000 |
| Pa. State Tch. Col., E. Stroudsburg, Pa. | 1893 | Joseph F. Noonan | 889 | 436 | 55 | — | 26,348 |
| Pa. State Tch. Col., Edinboro, Pa. | 1861 | L. H. Van Houten | 741 | 330 | 42 | — | 30,000 |
| Pa. State Tch. Col., Indiana, Pa. | 1871 | Ralph E. Heiges | 1,450 | 474 | 92 | — | 35,850 |
| Pa. State Tch. Col., Kutztown, Pa. | 1866 | Q. A. W. Rohrbach | 843 | 332 | 50 | — | 32,401 |
| Pa. State Tch. Col., Lock Haven, Pa. | 1877 | Richard T. Parsons | 737 | 387 | 49 | — | 25,000 |
| Pa. State Tch. Col., Mansfield, Pa. | 1862 | James G. Morgan | 831 | 289 | 64 | — | 30,000 |
| Pa. State Tch. Col., Millersville, Pa.. | 1854 | D. L. Biemesderfer | 883 | 416 | 59 | — | 30,032 |
| Pa. State Tch. Col., Shippensburg, Pa. | 1871 | Levi Gilbert | 795 | 416 | 50 | — | 31,500 |
| Pa. State Tch. Col., Slippery Rock, Pa. | 1889 | Dale W. Houk | 802 | 363 | 66 | — | 28,250 |
| Pa. State Tch. Col., West Chester, Pa. | 1871 | Charles S. Swope | 1,739 | 613 | 90 | — | 42,311 |
| Peru State Teachers Col., Peru, Neb. | 1867 | W. L. Nicholas | 392 | 171 | 50 | — | 52,000 |
| Pfeiffer Junior College, Misenheimer, N.C. | 1903 | C. M. Waggoner | 346 | 86 | 21 | 500,000 | 6,800 |
| Phillips University, Enid, Okla.. | 1907 | Eugene S. Briggs | 1,018 | 328 | 56 | 869,128 | 45,689 |
| Phoenix Junior College, Phoenix, Ariz. | 1920 | E. W. Montgomery | 1,278 | 445 | 55 | — | 17,898 |
| Pikeville Jr. College, Pikeville, Ky. | 1889 | A. A. Page | 288 | 102 | 30 | 312,489 | 13,200 |
| Pine Manor Junior Col., Wellesley, Mass. | 1911 | Marie Warren Potter | 268 | — | 33 | — | 7,000 |
| Pittsburgh, University of, Pittsburgh, Pa. | 1787 | Rufus H. Fitzgerald | 12,494 | 8,000 | 1,200 | 3,735,814 | 482,000 |
| Plymouth Teachers College, Plymouth, N.H. | 1870 | Howard R. Jones | 260 | 107 | 32 | — | 16,500 |
| Pomona College, Claremont, Calif.. | 1887 | E. Wilson Lyon | 1,116 | 410 | 97 | 4,603,576 | 116,000 |
| Port Huron Junior Col., Port Huron, Mich. | 1923 | John H. McKenzie | 403 | 198 | 19 | — | 6,635 |
| Portland, University of, Portland, Ore. | 1901 | Theodore J. Mehling | 1,932 | 1,376 | 95 | — | 50,000 |
| Potomac State School of West Virginia University (Jr.), Keyser, W.Va. | 1901 | E. E. Church | 612 | 365 | 34 | — | 9,000 |

| Institution and Location | Year Founded | Chief Executive | Full Time Students | Students under Veterans' Program | Faculty | Endowment | Library Volumes |
|---|---|---|---|---|---|---|---|
| Prairie View University, Prairie View, Tex. | 1876 | E. B. Evans | 1,813 | 586 | 127 | $ — | 27,869 |
| Princeton University, Princeton, N.J. | 1746 | Harold W. Dodds | 4,054 | 3,039 | 545 | 45,600,000 | 1,150,000 |
| Principia College, Elsah, Ill. | 1898 | Frederic E. Morgan | 454 | 145 | 38 | 895,811 | 37,056 |
| Providence College, Providence, R.I. | 1919 | Robert J. Slavin | 1,578 | 1,049 | 87 | — | 28,423 |
| Puerto Rico, Polytech. Inst., San Germán, P.R. | 1912 | Edward G. Seel | 471 | 120 | 33 | 460,000 | 13,300 |
| Puerto Rico, Univ. of, Río Piedras, P. R. | 1903 | Jaime Benítez | 4,209 | 1,481 | 370 | 2,029,266 | 105,000 |
| Puget Sound, College of, Tacoma, Wash. | 1888 | R. Franklin Thompson | 1,928 | 1,054 | 87 | 1,495,395 | 52,000 |
| Purdue University, West Lafayette, Ind. | 1869 | Frederick L. Hovde | 14,060 | 8,348 | 1,318 | 340,000 | 250,000 |
| **Q** | | | | | | | |
| Queens College, Charlotte, N.C. | 1857 | Hunter B. Blakely | 455 | 34 | 40 | 525,324 | 23,500 |
| Queens College, Flushing, N.Y. | 1937 | Paul Klapper | 2,798 | 516 | 209 | — | 70,000 |
| Queen's University, Kingston, Ontario, Can. | 1841 | R. C. Wallace | 3,193 | 1,746 | 248 | 4,545,675 | 218,612 |
| **R** | | | | | | | |
| Radcliffe College, Cambridge, Mass. | 1879 | Wilbur K. Jordan | 1,323 | 50 | 450 | 7,664,666 | 99,000 |
| Radford College, Woman's Division of Virginia Polytechnic Institute, Radford, Va. | 1910 | David W. Peters | 746 | 8 | 53 | — | 28,700 |
| Randolph-Macon College, Ashland, Va. | 1830 | J. Earl Moreland | 537 | 302 | 27 | 1,050,088 | 40,629 |
| Randolph-Macon Woman's Col., Lynchburg, Va. | 1893 | Theodore H. Jack | 698 | 2 | 74 | 1,264,000 | 67,000 |
| Redlands, University of, Redlands, Calif. | 1907 | George H. Armacost | 1,142 | 494 | 75 | 2,494,108 | 73,726 |
| Reed College, Portland, Ore. | 1911 | Peter H. Odegard | 719 | 350 | 61 | 1,591,806 | 84,396 |
| Regis College, Weston, Mass. | 1927 | Sr. Mary St. Ignatius | 655 | 3 | 63 | 175,400 | 50,000 |
| Rensselaer Polytechnic Inst., Troy, N.Y. | 1824 | Livingston W. Houston | 3,887 | 2,877 | 296 | 11,150,000 | 42,494 |
| Rhode Island Col. of Educ., Providence, R.I. | 1854 | Lucius A. Whipple | 438 | 58 | 62 | — | 30,334 |
| Rhode Island State College, Kingston, R.I. | 1892 | Carl R. Woodward | 2,495 | 1,360 | 184 | — | 88,078 |
| Rice Institute, Houston, Tex. | 1912 | William V. Houston | 1,570 | 703 | 131 | 30,000,000 | 200,000 |
| Richmond, University of, Richmond, Va. | 1832 | George M. Modlin | 2,017 | 1,126 | 86 | 3,100,000 | 115,000 |
| Ricker Junior College, Houlton, Me. | 1848 | Roy A. Bither | 370 | 120 | 20 | 40,000 | 3,000 |
| Ricks College (Jr.), Rexburg, Ida. | 1888 | John L. Clarke | 342 | 91 | 20 | — | 10,899 |
| Ripon College, Ripon, Wis. | 1851 | Clark G. Kuebler | 661 | 282 | 56 | 1,028,000 | 44,498 |
| Riverside College (Jr.), Riverside, Calif. | 1916 | A. G. Paul | 937 | 363 | 42 | — | 20,184 |
| Roanoke College, Salem, Va. | 1842 | Charles J. Smith | 601 | 319 | 38 | 679,271 | 24,000 |
| Rochester, University of, Rochester, N.Y. | 1850 | Alan Valentine | 3,931 | 1,975 | 360 | 57,753,638 | 464,485 |
| Rockford College, Rockford, Ill. | 1847 | Mary Ashby Cheek | 535 | 57 | 55 | 1,010,531 | 38,000 |
| Rockhurst College, Kansas City, Mo. | 1910 | Thomas M. Knapp | 784 | 490 | 53 | — | 19,000 |
| Rocky Mountain College, Billings, Mont. | 1883 | William D. Copeland | 215 | 141 | 21 | 475,000 | 30,000 |
| Rollins College, Winter Park, Fla. | 1885 | Hamilton Holt | 598 | 200 | 64 | 933,844 | 80,000 |
| Roosevelt College, Chicago, Ill. | 1945 | Edward J. Sparling | 3,850 | 1,890 | 234 | — | 36,000 |
| Rosary College, River Forest, Ill. | 1901 | Sister Mary Peter | 725 | 7 | 68 | 100,000 | 56,582 |
| Rosemont College, Rosemont, Pa. | 1921 | Mother Mary Boniface | 307 | 2 | 43 | — | 37,500 |
| Rose Polytechnic Institute, Terre Haute, Ind. | 1874 | Donald B. Prentice | 575 | 465 | 40 | 2,300,000 | 24,000 |
| Russell Sage College, Troy, N.Y. | 1916 | Helen McKinstry | 723 | 130 | 80 | 1,237,544 | 48,000 |
| Rutgers University, New Brunswick, N.J. | 1766 | Robert C. Clothier | 9,514 | 5,554 | 740 | 6,266,126 | 485,000 |
| **S** | | | | | | | |
| Sacramento Col. (Jr.), Sacramento, Calif. | 1916 | Nicholas Ricciardi | 2,699 | 1,193 | 115 | — | 28,000 |
| St. Ambrose College, Davenport, Ia. | 1882 | Ambrose J. Burke | 1,207 | 769 | 67 | 600,000 | 30,000 |
| St. Anselm's College, Manchester, N.H. | 1889 | Bertrand C. Dolan | 573 | 388 | 39 | — | 14,000 |
| St. Augustine's College, Raleigh, N.C. | 1867 | Harold L. Trigg | 382 | 90 | 21 | 200,000 | 17,700 |
| St. Benedict, College of, St. Joseph, Minn. | 1913 | Mother R. Pratschner | 270 | — | 38 | 10,800 | 32,000 |
| St. Benedict's College, Atchison, Kan. | 1858 | Cuthbert McDonald | 485 | 225 | 43 | — | 100,000 |
| St. Bernard College (Jr.), St. Bernard, Ala. | 1892 | Boniface Seng | 240 | 130 | 15 | 125,000 | 24,500 |
| St. Bernardine of Sienna Col., Loudonville, N.Y. | 1937 | Mark Kennedy | 2,140 | 1,615 | 99 | — | 18,500 |
| St. Bonaventure Col., St. Bonaventure, N.Y. | 1859 | Thomas Plassmann | 1,649 | 1,054 | 93 | — | 86,900 |
| St. Catherine, College of, St. Paul, Minn. | 1911 | Sister Antonius Kennelly | 807 | 17 | 85 | 645,403 | 68,389 |
| St. Charles College (Jr.), Catonsville, Md. | 1831 | George A. Gleason | 200 | 38 | 12 | — | 43,000 |
| St. Cloud St. Tch. Col., St. Cloud, Minn. | 1869 | John W. Headley | 1,348 | 537 | 87 | — | 56,901 |
| t. Edward's Seminary, Kenmore, Wash. | 1931 | John P. McCormick | 103 | 13 | 17 | — | 15,500 |
| t. Elizabeth, Col. of, Convent Station, N.J. | 1899 | Sister Marie J. Byrne | 691 | 7 | 43 | — | 31,558 |
| t. Francis, College of, Joliet, Ill. | 1874 | Sister M. Aniceta | 329 | 3 | 47 | 16,000 | 33,977 |
| . Francis College, Loretto, Pa. | 1847 | Adrian J. M. Veigle | 708 | 507 | 35 | 75,000 | 30,000 |
| . Francis Xavier Col. for Wom., Chicago, Ill. | 1912 | Sister Mary Huberta | 368 | 7 | 40 | — | 53,000 |
| . Francis Xavier Univ., Antigonish, N.S., Can. | 1853 | P. J. Nicholson | 923 | 316 | 43 | 527,000 | 37,000 |
| . John College, Cleveland, Ohio | 1928 | Robert B. Navin | 200 | — | 25 | — | 25,000 |
| John's University, Brooklyn, N.Y. | 1870 | John A. Flynn | 4,051 | 2,717 | 205 | 500,000 | 72,770 |
| Joseph College, W. Hartford, Conn. | 1932 | Sister M. Rosa | 440 | 13 | 40 | — | 20,000 |
| Joseph Junior Col., St. Joseph, Mo. | 1915 | Nelle Blum | 628 | 236 | 21 | — | 7,700 |
| Joseph's College, Collegeville, Ind. | 1889 | Henry A. Lucks | 596 | 287 | 49 | 173,647 | 40,000 |
| Joseph's College, Emmitsburg, Md. | 1809 | Francis J. Dodd | 213 | — | 32 | — | 16,012 |
| Joseph's College, Philadelphia, Pa. | 1851 | John J. Long | 1,565 | 1,099 | 74 | — | 25,000 |
| Joseph's Col. for Women, Brooklyn, N.Y. | 1916 | William T. Dillon | 560 | 1 | 49 | 29,713 | 25,526 |
| Lawrence University, Canton, N.Y. | 1856 | Eugene G. Bewkes | 1,274 | 591 | 81 | 1,559,832 | 86,000 |
| Louis University, St. Louis, Mo. | 1818 | Patrick j. Holloran | 8,830 | 4,724 | 1,018 | 3,421,878 | 439,741 |
| St. Martin's College, Lacey, Wash. | 1895 | Raphael Heider | 326 | 216 | 35 | $ — | 15,000 |
| St. Mary College, Xavier, Kan | 1923 | Arthur M. Murphy | 303 | 2 | 44 | — | 33,897 |
| St. Mary of the Springs, Col. of, Columbus, Ohio | 1925 | Sister M. Angelita | 256 | 3 | 47 | — | 32,000 |
| St. Mary-of-the-Wasatch, Col. of, Salt Lake City, Utah | 1926 | Sister Mary Benedictus | 103 | — | 17 | — | 12,400 |
| St. Mary-of-the-Woods Col., St. Mary-of-the-Woods, Ind. | 1840 | Mother Mary Bernard | 416 | 3 | 51 | 474,000 | 71,720 |
| St. Mary's Col., Notre Dame, Holy Cross, Ind. | 1844 | Sister M. Madeleva | 502 | 5 | 58 | 116,700 | 36,197 |
| St. Mary's Col., St. Mary's College, Calif. | 1863 | Brother Austin | 950 | 450 | 50 | — | 38,374 |
| St. Mary's College, Winona, Minn. | 1912 | Brother Joel | 492 | 251 | 35 | — | 25,000 |
| St. Mary's Junior College, O'Fallon, Mo. | 1927 | Mother M. Borgia | 18 | — | 7 | — | 12,875 |
| St. Mary's Junior College, Raleigh, N.C. | 1842 | Richard G. Stone | 172 | — | 29 | 202,033 | 10,990 |
| St. Michael's College, Winooski, Vt. | 1904 | Daniel P. Lyons | 740 | 452 | 44 | 86,168 | 30,000 |
| St. Norbert College, West De Pere, Wis. | 1898 | B. H. Pennings | 838 | 508 | 43 | — | 30,000 |
| St. Olaf College, Northfield, Minn. | 1874 | Clemens M. Granskou | 1,647 | 568 | 113 | 1,055,954 | 73,797 |
| St. Patrick's Seminary, Menlo Park, Calif. | 1898 | Thomas C. Mulligan | 81 | 4 | 13 | — | 33,000 |
| St. Paul Seminary, St. Paul, Minn. | 1894 | R. G. Bandas | 211 | 8 | 18 | — | 35,000 |
| St. Petersburg Jr. Col., St. Petersburg, Fla. | 1927 | Roland A. Wakefield | 437 | 204 | 24 | — | 10,500 |
| St. Peter's College, Jersey City, N.J. | 1878 | Vincent Hart | 768 | 403 | 36 | 550,000 | 22,000 |
| St. Rose, College of, Albany, N.Y. | 1920 | Edmund F. Gibbons | 556 | 8 | 52 | — | 17,086 |
| St. Scholastica, College of, Duluth, Minn. | 1912 | Mother M. Athanasius | 480 | 8 | 43 | — | 28,000 |
| St. Teresa, Col. of, Kansas City, Mo. | 1867 | Mother M. Marietta Jennings | 239 | 3 | 28 | — | 18,000 |
| St. Teresa, College of, Winona, Minn. | 1910 | Sr. M. Rachael | 550 | 11 | 55 | — | 36,000 |
| St. Thomas, College of, St. Paul, Minn. | 1885 | Vincent J. Flynn | 2,078 | 1,416 | 126 | 303,375 | 37,804 |
| St. Vincent College, Latrobe, Pa. | 1846 | Alfred Koch | 843 | 533 | 54 | — | 67,000 |
| Salem College, Winston-Salem, N.C. | 1772 | Howard E. Rondthaler | 370 | 26 | 45 | 727,514 | 32,584 |
| Sam Houston State Tch. Col., Huntsville, Tex. | 1879 | Harmon Lowman | 2,076 | 996 | 96 | — | 58,772 |
| Samuel Huston College, Austin, Tex. | 1900 | Karl E. Downs | 574 | 162 | 37 | 12,000 | 14,103 |
| San Angelo College (Jr.), San Angelo, Tex. | 1928 | W. H. Elkins | 592 | 210 | 38 | — | 8,000 |
| San Bernardino Valley Junior College, San Bernardino, Calif. | 1926 | John L. Lounsbury | 1,449 | 566 | 70 | — | 22,000 |
| San Diego State College, San Diego, Calif. | 1897 | Walter R. Hepner | 4,188 | 2,083 | 200 | — | 108,000 |
| San Francisco, Univ. of, San Fran., Calif. | 1855 | William J. Dunne | 1,970 | 1,424 | 120 | — | 60,000 |
| San Francisco Col. for Wom., San Fran., Cal. | 1930 | Mother Leonor Mejia | 365 | 30 | 44 | — | 100,000 |
| San Francisco State Col., San Francisco, Calif | 1899 | J. Paul Leonard | 2,920 | 1,123 | 162 | — | 53,830 |
| San Jose St. Col., San Jose, Calif. | 1857 | T. W. MacQuarrie | 6,858 | 3,030 | 320 | — | 95,000 |
| San Mateo Junior Col., San Mateo, Calif. | 1922 | Charles S. Morris | 1,600 | 600 | 90 | — | 13,500 |
| San Rafael, Dominican Col. of, San Rafael, Calif. | 1918 | Sister Mary Patrick | 292 | 3 | 40 | — | 37,939 |
| Santa Ana Junior Col., Santa Ana, Calif. | 1915 | H. O. Russell | 840 | 309 | 38 | — | 15,000 |
| Santa Clara, Univ. of, Santa Clara, Calif. | 1851 | William C. Gianera | 1,045 | 591 | 82 | 750,000 | 65,000 |
| Santa Monica City Col., Santa Monica, Calif. | 1929 | Elmer C. Sandmeyer | 1,623 | 831 | 54 | — | 13,600 |
| Santa Rosa Junior Col., Santa Rosa, Calif. | 1918 | Floyd P. Bailey | 1,142 | 512 | 46 | — | 13,000 |
| Sarah Lawrence College, Bronxville, N.Y. | 1926 | Harold Taylor | 347 | 39 | 67 | 337,148 | 50,000 |
| Saskatchewan, Univ. of, Saskatoon, Sask., Can. | 1907 | James S. Thomson | 4,536 | 2,347 | 150 | 261,594 | 94,000 |
| Scarritt College, Nashville, Tenn. | 1924 | Hugh C. Stuntz | 165 | 8 | 19 | 508,000 | 7,500 |
| Schreiner Institute (Jr.), Kerrville, Tex. | 1923 | J. J. Delaney | 405 | 111 | 26 | 175,000 | 9,000 |
| Scranton, University of, Scranton, Pa. | 1888 | J. Eugene Gallery | 1,895 | 1,476 | 93 | 2,500,000 | 23,000 |
| Scripps College, Claremont, Calif. | 1926 | Frederick Hard | 238 | — | 31 | 1,146,408 | 33,199 |
| Seattle College, Seattle, Wash. | 1892 | Harold O. Small | 2,469 | 687 | 80 | — | 32,000 |
| Seattle Pacific College, Seattle, Wash. | 1891 | C. Hoyt Watson | 622 | 239 | 36 | 425,000 | 21,100 |
| Seton Hall College, South Orange, N.J. | 1856 | James F. Kelley | 4,009 | 3,300 | 150 | — | 50,000 |
| Seton Hill College, Greensburg, Pa. | 1918 | M. Victoria Brown | 475 | 52 | 61 | 500,000 | 35,000 |
| Shaw University, Raleigh, N.C. | 1865 | Robert P. Daniel | 819 | 183 | 48 | 350,000 | 15,000 |
| Shepherd College, Shepherdstown, W.Va. | 1872 | Oliver S. Ikenberry | 404 | 175 | 22 | — | 18,500 |
| Shorter College, Rome, Ga. | 1873 | Paul M. Cousins | 219 | — | 33 | 500,000 | 24,000 |
| Siena Heights College, Adrian, Mich. | 1939 | Mother Mary Gerald | 350 | 5 | 28 | — | 26,000 |
| Simmons College, Boston, Mass. | 1899 | Bancroft Beatley | 1,470 | 140 | 165 | 3,510,050 | 95,000 |
| Simpson College, Indianola, Ia. | 1860 | Edwin E. Voigt | 700 | 279 | 47 | 1,474,231 | 33,889 |
| Sioux Falls College, Sioux Falls, S.D. | 1883 | Ernest E. Smith | 343 | 155 | 31 | 95,228 | 18,000 |
| Skidmore College, Saratoga Springs, N.Y. | 1911 | Henry T. Moore | 1,133 | 193 | 86 | 871,535 | 60,710 |
| Smith College, Northampton, Mass. | 1871 | Herbert Davis | 2,328 | 24 | 272 | 6,907,243 | 335,429 |
| Snead Junior College, Boaz, Ala. | 1935 | Festus M. Cook | 402 | 217 | 24 | 210,000 | 6,633 |
| Snow College (Jr.), Ephraim, Utah | 1888 | James A. Nuttall | 332 | 114 | 25 | — | 10,000 |
| South, University of the, Sewanee, Tenn. | 1857 | Alexander Guerry | 519 | 279 | 44 | 2,158,605 | 58,000 |
| South Carolina, Univ. of, Columbia, S.C. | 1801 | Norman M. Smith | 4,614 | 2,743 | 257 | — | 100,000 |
| South Carolina State Agri. and Mech. Col., Orangeburg, S.C. | 1896 | M. F. Whittaker | 1,400 | 555 | 125 | — | 27,683 |
| South Dakota, Univ. of, Vermillion, S.D. | 1882 | I. D. Weeks | 1,779 | 1,092 | 130 | — | 123,000 |
| South Dakota School of Mines and Technology, Rapid City, S.D. | 1885 | Earl D. Dake | 620 | 470 | 44 | 250,000 | 21,000 |
| South Dakota State College of Agri. and Mech. Arts, Brookings. S.D. | 1881 | Fred H. Leinbach | 2,280 | [illegible] | | | |

| Institution and Location | Year Founded | Chief Executive | Full Time Students | Students under Veterans' Program | Faculty | Endowment | Library Volumes |
|---|---|---|---|---|---|---|---|
| Southeastern La. Col., Hammond, La. | 1925 | Gladney J. Tinsley | 1,157 | 513 | 88 | $ — | 32,881 |
| Southeastern State College, Durant, Okla | 1909 | T. T. Montgomery | 1,166 | 519 | 80 | — | 38,000 |
| Southeast Missouri St. Col., Cape Girardeau, Mo. | 1873 | W. W. Parker | 1,450 | 661 | 61 | — | 90,000 |
| Southern Calif., Univ. of, Los Angeles, Calif. | 1879 | Fred D. Fagg, Jr. | 16,401 | 11,384 | 1,500 | 1,600,000 | 414,874 |
| Southern Christian Inst. (Jr.), Edwards, Miss. | 1875 | John Long | 572 | 54 | 21 | — | 9,397 |
| Southern Idaho Col. of Educ., Albion, Ida. | 1893 | R. H. Snyder | 236 | 92 | 33 | — | 20,000 |
| Southern Illinois, University of, Carbondale, Ill. | 1874 | Chester F. Lay | 2,852 | 1,367 | 211 | — | 75,160 |
| Southern Methodist Univ., Dallas, Tex. | 1911 | Umphrey Lee | 7,031 | 4,358 | 362 | 4,461,310 | 230,149 |
| Southern Missionary Col., Collegedale, Tenn. | 1893 | Kenneth A. Wright | 402 | 159 | 35 | — | 12,024 |
| Southern Oregon Col. of Educ., Ashland, Ore. | 1926 | Elmo N. Stevenson | 601 | 300 | 29 | — | 20,848 |
| Southern St. Tch. Col., Springfield, S.D. | 1881 | J. Howard Kramer | 152 | 62 | 22 | — | 16,649 |
| Southern University and Agri. and Mech. College, Scotlandville, La. | 1880 | Felton G. Clark | 1,739 | 490 | 109 | — | 35,300 |
| South Georgia College (Jr.), College, Ga. | 1927 | William S. Smith | 532 | 232 | 25 | — | 7,500 |
| Southwestern at Memphis, Memphis, Tenn. | 1848 | Charles E. Diehl | 751 | 281 | 61 | 2,400,000 | 56,000 |
| Southwestern College, Winfield, Kan. | 1885 | Mearl P. Culver | 626 | 273 | 47 | 590,000 | 26,000 |
| Southwestern Inst. of Tech., Weatherford, Okla. | 1901 | R. H. Burton | 949 | 496 | 53 | — | 34,368 |
| Southwestern Louisiana Inst., Lafayette, La. | 1898 | Joel L. Fletcher | 3,332 | 1,556 | 199 | — | 68,000 |
| Southwestern University, Georgetown, Tex. | 1840 | J. N. R. Score | 870 | 338 | 60 | 790,000 | 45,000 |
| Southwest Missouri St. Col., Springfield, Mo. | 1906 | Roy Ellis | 1,908 | 740 | 88 | — | 73,531 |
| Southwest Texas State Tch. Col., San Marcos, Tex. | 1899 | John G. Flowers | 1,701 | 717 | 93 | — | 63,445 |
| Spelman College, Atlanta, Ga. | 1881 | Florence M. Read | 376 | 3 | 31 | 3,260,300 | 84,000 |
| Springfield College, Springfield, Mass. | 1885 | Paul M. Limbert | 1,199 | 997 | 82 | 1,068,896 | 40,000 |
| Springfield Junior Col., Springfield, Ill. | 1929 | Mother M. De Pazzi | 506 | 244 | 33 | — | 12,000 |
| Spring Hill College, Spring Hill, Ala. | 1830 | Wm. Patrick Donnelly | 759 | 402 | 35 | 242,359 | 52,689 |
| Stanford University, Stanford, Calif. | 1885 | Donald B. Tresidder | 7,875 | 4,283 | 725 | 36,910,000 | 1,045,734 |
| Stephen F. Austin State Tch. Col., Nacogdoches, Tex. | 1923 | Paul L. Boynton | 1,244 | 527 | 81 | — | 52,000 |
| Stephens College (Jr.), Columbia, Mo. | 1833 | Homer P. Rainey | 2,248 | 1 | 260 | 234,302 | 49,255 |
| Stevens Institute of Tech., Hoboken, N.J. | 1870 | Harvey N. Davis | 1,481 | 1,117 | 120 | — | 32,000 |
| Stillman Institute (Jr.), Tuscaloosa, Ala.* | 1876 | A. L. Jackson | 193 | 11 | 21 | 100,000 | 10,734 |
| Stockton Jr. College, Stockton, Calif. | 1935 | Arthur T. Bawden | 1,606 | 635 | 97 | — | 53,000 |
| Stout Institute, Menomonie, Wis. | 1903 | Verne C. Fryklund | 912 | 468 | 55 | — | 31,300 |
| Stowe Teachers and Jr. Col., St. Louis, Mo. | 1890 | Ruth M. Harris | 753 | 58 | 36 | — | 15,898 |
| Sue Bennett College (Jr.), London, Ky. | 1897 | Oscie Sanders | 117 | 42 | 14 | — | 10,663 |
| Sullins College (Jr.), Bristol, Va. | 1870 | W. E. Martin | 430 | — | 42 | 500,000 | 11,000 |
| Sul Ross State Tch. Col., Alpine, Tex. | 1920 | R. M. Hawkins | 760 | 402 | 40 | — | 25,000 |
| Sunflower Junior College, Moorhead, Miss. | 1911 | W. B. Horton | 401 | 105 | 30 | — | 5,000 |
| Susquehanna University, Selinsgrove, Pa. | 1858 | G. Morris Smith | 527 | 235 | 38 | 476,510 | 26,615 |
| Swarthmore College, Swarthmore, Pa. | 1864 | John W. Nason | 1,054 | 386 | 102 | 9,340,979 | 147,039 |
| Sweet Briar College, Sweet Briar, Va. | 1901 | Martha B. Lucas | 451 | 1 | 56 | 950,000 | 68,599 |
| Syracuse University, Syracuse, N.Y. | 1870 | William P. Tolley | 18,456 | 8,383 | 1,303 | 5,388,502 | 396,419 |
| **T** | | | | | | | |
| Talladega College, Talladega, Ala. | 1867 | A. D. Beittel | 365 | 75 | *38 | 1,134,876 | 42,750 |
| Tarkio College, Tarkio, Mo. | 1883 | M. Earle Collins | 234 | 104 | 18 | 666,000 | 18,660 |
| Taylor University, Upland, Ind. | 1846 | Clyde W. Meredith | 461 | 139 | 30 | 105,782 | 22,588 |
| Temple University, Philadelphia, Pa. | 1884 | Robert L. Johnson | 8,484 | 4,785 | 850 | 1,287,488 | 275,990 |
| Tennessee, University of, Knoxville, Tenn. | 1794 | Cloide E. Brehm | 6,550 | 4,182 | 512 | 638,310 | 261,453 |
| Tennessee A. and I. St. Col., Nashville, Tenn. | 1912 | W. S. Davis | 2,149 | 779 | 142 | — | 30,000 |
| Tennessee Jr. Col., Univ. of, Martin, Tenn. | 1927 | Paul Meek | 670 | 345 | 47 | — | 15,413 |
| Tennessee Polytechnic Inst., Cookeville, Tenn. | 1915 | Everett Derryberry | 1,746 | 1,070 | 78 | — | 28,000 |
| Tennessee Wesleyan Col. (Jr.), Athens, Tenn. | 1866 | James L. Robb | 498 | 218 | 34 | 108,450 | 11,937 |
| Texarkana College (Jr.), Texarkana, Tex. | 1927 | H. W. Stilwell | 377 | 115 | 16 | — | 6,500 |
| Texas, A. and M. Col. of, College Station, Tex. | 1871 | Gibb Gilchrist | 8,318 | 5,600 | 473 | 379,186 | 128,561 |
| Texas, University of, Austin, Tex. | 1881 | Theophilus S. Painter | 17,449 | 10,576 | 760 | 74,531,000 | 832,786 |
| Texas Christian University, Fort Worth, Tex. | 1873 | M. E. Sadler | 3,454 | 1,810 | 198 | 6,000,000 | 120,651 |
| Texas College, Tyler, Tex. | 1894 | D. R. Glass | 730 | 214 | 36 | 12,000 | 12,057 |
| Texas Col. of Arts and Ind., Kingsville, Tex. | 1925 | E. N. Jones | 2,093 | 953 | 95 | — | 31,077 |
| Texas Col. of Mines and Met., El Paso, Tex. | 1913 | D. M. Wiggins | 1,903 | 900 | 90 | 630,000 | 40,763 |
| Texas Lutheran College (Jr.), Seguin, Tex. | 1891 | William F. Kraushaar | 284 | 67 | 16 | 17,500 | 21,000 |
| Texas State Col. for Wom., Denton, Tex. | 1901 | L. H. Hubbard | 2,241 | 24 | 175 | — | 96,998 |
| Texas Technological Col., Lubbock, Tex. | 1923 | Wm. M. Whyburn | 6,113 | 3,012 | 326 | — | 101,253 |
| Thiel College, Greenville, Pa. | 1866 | Wm. F. Zimmerman | 563 | 269 | 31 | 168,000 | 20,000 |
| Thornton Junior College, Harvey, Ill. | 1927 | C. R. Maddox | 360 | 140 | 22 | — | 8,649 |
| Tillotson College, Austin, Tex. | 1877 | Fred L. Brownlee | 554 | 140 | 35 | 2,113 | 22,500 |
| Toledo, University of, Toledo, Ohio | 1872 | Raymond L. Carter | 4,355 | 2,959 | 204 | 75,000 | 131,219 |
| Toronto, University of, Toronto, Ont., Can. | 1827 | Sidney E. Smith | 17,010 | 8,350 | 950 | — | 625,000 |
| Tougaloo College, Tougaloo, Miss. | 1869 | Harold C. Warren | 352 | 107 | 24 | — | 14,800 |
| Transylvania College, Lexington, Ky. | 1780 | Raymond F. McLain | 490 | 242 | 37 | 1,444,490 | 54,277 |
| Trinity College, Hartford, Conn. | 1823 | G. Keith Funston | 865 | 540 | 63 | 4,097,661 | 185,000 |
| Trinity College, Washington, D.C. | 1897 | Sr. Catherine Dorothea | 482 | — | 61 | 521,337 | 50,000 |
| Tufts College, Medford, Mass. | 1852 | Leonard Carmichael | 3,547 | 2,138 | 760 | 9,671,659 | 200,000 |
| Tulane Univ. of Louisiana, New Orleans, La. | 1834 | Rufus C. Harris | 5,208 | 2,772 | 832 | $13,400,209 | 477,492 |
| Tulsa, University of, Tulsa, Okla. | 1894 | C. I. Pontius | 4,284 | 2,420 | 150 | 1,727,707 | 52,259 |
| Tusculum College, Greeneville, Tenn. | 1794 | Geo. K. Davies | 424 | 170 | 27 | 1,480,000 | 22,000 |
| Tuskegee Institute, Tuskegee Institute, Ala. | 1881 | Frederick D. Patterson | 2,648 | 1,375 | 254 | 6,897,177 | 70,000 |
| Tyler Junior College, Tyler, Tex. | 1926 | H. E. Jenkins | 589 | 242 | 29 | — | 7,277 |
| **U** | | | | | | | |
| Union College, Barbourville, Ky. | 1879 | Conway Boatman | 430 | 241 | 42 | 561,155 | 17,856 |
| Union College, Lincoln, Neb. | 1891 | Robert W. Woods | 959 | 308 | 55 | — | 38,350 |
| Union College, Schenectady, N.Y. | 1795 | Carter Davidson | 1,506 | 1,064 | 127 | 6,000,000 | 133,000 |
| U.S. Coast Guard Acad., New London, Conn. | 1876 | W. N. Derby | 345 | — | 41 | — | 29,000 |
| U.S. Military Academy, West Point, N.Y. | 1802 | Maxwell D. Taylor | 2,713 | — | 265 | — | 128,000 |
| U.S. Naval Academy, Annapolis, Md. | 1845 | J. L. Holloway, Jr. | 2,853 | — | 385 | — | 110,000 |
| Upsala College, East Orange, N.J. | 1893 | Evald B. Lawson | 1,585 | 870 | 85 | 256,612 | 25,000 |
| Ursinus College, Collegeville, Pa. | 1869 | Norman E. McClure | 964 | 421 | 52 | 800,000 | 35,000 |
| Ursuline College, Louisville, Ky. | 1938 | Mother M. Rosalin Schaefer | 128 | — | 27 | — | 19,917 |
| Ursuline Col. for Women, Cleveland, Ohio | 1871 | Mother M. Celestine Ahearn | 252 | 1 | 31 | — | 20,000 |
| Utah, University of, Salt Lake City, Utah | 1850 | A. Ray Olpin | 8,777 | 4,350 | 437 | 791,283 | 189,756 |
| Utah State Agricultural Col., Logan, Utah | 1888 | Franklin S. Harris | 3,975 | 2,216 | 206 | — | 90,525 |
| **V** | | | | | | | |
| Valparaiso University, Valparaiso, Ind. | 1859 | O. P. Kretzmann | 1,894 | 927 | 106 | 507,168 | 96,121 |
| Vanderbilt University, Nashville, Tenn. | 1873 | Harvie Branscomb | 3,456 | 1,794 | 347 | 39,953,059 | 489,089 |
| Vassar College, Poughkeepsie, N.Y. | 1861 | Sarah G. Blanding | 1,428 | 47 | 174 | 13,300,000 | 255,000 |
| Vermont, University of, and State Agricultural Col., Burlington, Vt. | 1791 | John S. Millis | 2,680 | 1,500 | 203 | 3,678,944 | 200,000 |
| Vermont Junior College, Montpelier, Vt. | 1833 | John H. Kingsley | 292 | 76 | 26 | 125,000 | 5,400 |
| Villa Maria College, Erie, Pa. | 1925 | Sister M. Doloretta | 140 | — | 32 | 1,535,241 | 15,000 |
| Villanova College, Villanova, Pa. | 1842 | F. X. N. McGuire | 2,250 | 1,300 | 135 | — | 78,788 |
| Virginia, University of, Charlottesville, Va. | 1819 | Colgate W. Darden, Jr. | 5,004 | 3,568 | 569 | 14,000,000 | 484,826 |
| Virginia Intermont College (Jr.), Bristol, Va. | 1884 | Rabun L. Brantley | 440 | 1 | 34 | 504,974 | 12,000 |
| Virginia Junior College, Virginia, Minn. | 1921 | Floyd B. Moe | 332 | 152 | 25 | — | 18,530 |
| Virginia Military Institute, Lexington, Va. | 1839 | R. J. Marshall | 780 | 251 | 62 | 759,177 | 78,526 |
| Virginia Polytechnic Inst., Blacksburg, Va. | 1872 | Walter S. Newman | 5,301 | 3,632 | 266 | 349,312 | 619,801 |
| Virginia State College, Petersburg, Virginia | 1882 | Luther H. Foster | 1,311 | 592 | 120 | 173,000 | 36,385 |
| Virginia State Tch. Col., Farmville, Va. | 1884 | D. S. Lancaster | 750 | 17 | 57 | — | 46,884 |
| Virginia Union University, Richmond, Va. | 1865 | John M. Ellison | 1,085 | 323 | 52 | 826,624 | 30,000 |
| Voorhees Normal and Industrial School (Jr.), Denmark, S.C. | 1897 | Earl H. McClenney, Sr. | 170 | 35 | 10 | 47,706 | 4,010 |
| **W** | | | | | | | |
| Wabash College, Crawfordsville, Ind. | 1832 | Frank H. Sparks | 599 | 349 | 37 | 2,607,828 | 94,000 |
| Wagner Mem. Lutheran College, Staten Island, N.Y. | 1883 | Walter C. Langsam | 875 | 507 | 75 | 393,394 | 40,000 |
| Wake Forest College, Wake Forest, N.C. | 1834 | Thurman D. Kitchin | 2,000 | 1,043 | 124 | 4,850,000 | 101,496 |
| Walla Walla College, College Place, Wash. | 1892 | G. W. Bowers | 1,026 | 428 | 52 | — | 25,464 |
| Ward-Belmont School (Jr.), Nashville, Tenn. | 1865 | Robert C. Provine | 846 | 3 | 45 | — | 15,000 |
| Washburn Municipal Univ, Topeka, Kan. | 1865 | Bryan S. Stoffer | 1,606 | 970 | 111 | 1,399,535 | 48,078 |
| Washington, State Col. of, Pullman, Wash. | 1890 | Wilson Compton | 6,760 | 3,324 | 446 | 7,543,270 | 600,000 |
| Washington, University of, Seattle, Wash. | 1861 | Raymond B. Allen | 15,514 | 9,430 | 1,608 | 1,401,586 | 609,888 |
| Washington and Jefferson Col., Wash., Pa. | 1780 | James H. Case, Jr. | 1,147 | 778 | 73 | 1,808,000 | 65,000 |
| Washington and Lee Univ., Lexington, Va. | 1749 | Francis P. Gaines | 1,278 | 773 | 78 | 4,081,787 | 152,000 |
| Washington College, Chestertown, Md. | 1782 | Gilbert Wilcox Mead | 474 | 207 | 34 | — | 35,000 |
| Washington Missionary Col., Takoma Pk., Washington D.C. | 1904 | W. H. Shephard | 523 | 226 | 50 | — | 34,194 |
| Washington University, St. Louis, Mo. | 1853 | Arthur H. Compton | 7,549 | 6,757 | 1,152 | 23,786,531 | 736,670 |
| Wayne University, Detroit, Mich. | 1868 | David D. Henry | 9,005 | 5,049 | 842 | 4,824 | 296,338 |
| Weatherford Col. of Southwestern Univ., Weatherford, Tex. | 1868 | J. N. R. Score | 160 | 68 | 12 | 26,000 | 8,000 |
| Weber College (Jr.), Ogden, Utah. | 1889 | H. A. Dixon | 1,439 | 605 | 76 | — | 17,000 |
| Webster College, Webster Groves, Mo. | 1915 | George F. Donovan | 367 | 2 | 67 | 10,375 | 27,000 |
| Wellesley College, Wellesley, Mass. | 1870 | Mildred M. Horton | 1,723 | 5 | 215 | 13,217,620 | 242,000 |
| Wells College, Aurora, N.Y. | 1868 | Richard L. Greene | 326 | — | 50 | 1,631,602 | 103,000 |
| Wentworth Mil. Acad. (Jr.), Lexington, Mo. | 1880 | J. M. Sellers | 132 | 17 | 12 | — | 8,000 |
| Wesleyan College, Macon, Ga. | 1836 | Silas Johnson | 557 | 19 | 64 | 1,109,949 | 35,575 |
| Wesleyan University, Middletown, Conn. | 1831 | Victor L. Butterfield | 933 | 545 | 90 | 9,319,365 | 330,000 |
| Westbrook Junior College, Portland, Me. | 1831 | Milton D. Proctor | 377 | 2 | 35 | 63,466 | 7,800 |
| Western Carolina Tch. Col., Cullowhee, N.C. | 1889 | W. E. Bird | 550 | 293 | 38 | — | 22,024 |
| Western College, (for Wom.), Oxford, Ohio | 1853 | Philip E. Henderson | 558 | — | 57 | 882,177 | 50,000 |
| Western Illinois State Tch. Col., Macomb, Ill. | 1899 | Frank A. Beu | 1,334 | 490 | 107 | — | 61,371 |
| Western Kentucky State Tch. Col., Bowling Green, Ky. | 1906 | Paul L. Garrett | 1,903 | 852 | 100 | — | 68,000 |
| Western Maryland Col., Westminster, Md. | 1868 | Lowell Skinner Ensor | 856 | 287 | 62 | 882,000 | 45,000 |
| Western Michigan College, Kalamazoo, Mich. | 1903 | Paul V. Sangren | 3,868 | 1,871 | 275 | — | 70,000 |

| Institution and Location | Year Founded | Chief Executive | Full Time Students | Students under Veterans' Program | Faculty | Endowment | Library Volumes |
|---|---|---|---|---|---|---|---|
| Western Ontario, Univ. of, London, Ont., Can. | 1878 | D. G. Edward Hall | 3,420 | 1,000 | 208 | $ 500,000 | 175,000 |
| Western Reserve Univ., Cleveland, Ohio | 1826 | Winfred G. Leutner | 6,519 | 3,806 | 836 | 17,159,472 | 600,000 |
| Western State Col. of Colo., Gunnison, Colo. | 1901 | Peter P. Mickelson | 688 | 320 | 41 | — | 39,000 |
| Western Washington College of Education, Bellingham, Wash. | 1899 | Wm. W. Haggard | 1,156 | 463 | 81 | — | 71,000 |
| West Georgia College (Jr.), Carrollton, Ga. | 1933 | I. S. Ingram | 651 | 227 | 23 | — | 10,550 |
| West Liberty State Col., W. Liberty, W.Va. | 1837 | Paul N. Elbin | 558 | 261 | 29 | — | 19,000 |
| Westminster College, Fulton, Mo. | 1851 | C. W. McKenzie | 582 | 335 | 36 | 650,000 | 33,000 |
| Westminster College, New Wilmington, Pa. | 1852 | John Orr | 1,197 | 572 | 72 | 900,000 | 35,000 |
| Westminster College, Salt Lake City, Utah. | 1875 | Robert D. Steele | 265 | 82 | 21 | 175,000 | 15,000 |
| Westminster College (Jr.), Tehuacana, Tex. | 1895 | J. N. R. Score | 120 | 60 | 14 | — | 6,000 |
| West Texas State Col., Canyon, Tex. | 1910 | J. A. Hill | 1,107 | 497 | 76 | — | 257,517 |
| West Virginia State Col., Institute, W.Va. | 1891 | John W. Davis | 1,794 | 763 | 57 | — | 28,744 |
| West Virginia Univ., Morgantown, W.Va. | 1867 | Irvin Stewart | 6,304 | 3,897 | 363 | 115,300 | 202,167 |
| West Virginia Wesleyan Col., Buckhannon, W.Va. | 1890 | W. J. Scarborough | 760 | 388 | 38 | 225,857 | 31,000 |
| Wheaton College, Norton, Mass. | 1834 | A. Howard Meneely | 486 | — | 71 | 1,241,723 | 61,547 |
| Wheaton College, Wheaton, Ill. | 1860 | V. Raymond Edman | 1,505 | 500 | 131 | 750,000 | 90,000 |
| Wheelock College, Boston, Mass. | 1889 | Winifred E. Bain | 351 | 4 | 18 | — | 11,000 |
| Whitman College, Walla Walla, Wash. | 1859 | Winslow S. Anderson | 849 | 330 | 55 | 1,480,000 | 79,800 |
| Whittier College, Whittier, Calif. | 1901 | William C. Jones | 1,062 | 524 | 49 | 800,000 | 51,778 |
| Whitworth College, Spokane, Wash. | 1890 | Frank F. Warren | 748 | 289 | 44 | 45,000 | 18,000 |
| Wichita, Municipal Univ. of, Wichita, Kan. | 1926 | W. M. Jardine | 3,032 | 1,529 | 150 | 92,849 | 77,116 |
| Wiley College, Marshall, Tex. | 1873 | E. C. McLeod | 987 | 430 | 30 | 600,000 | 19,000 |
| Wilkes College, Wilkes-Barre, Pa. | 1933 | Eugene S. Farley | 1,168 | 730 | 65 | 555,000 | 11,960 |
| Willamette University, Salem, Ore. | 1842 | G. Herbert Smith | 1,163 | 555 | 57 | 2,000,000 | 65,000 |
| William and Mary, Col. of, Virginia Polytech. Inst, Norfolk, Va. | 1930 | Lewis W. Webb | 811 | 435 | 57 | — | 13,690 |
| William and Mary, Col. of, Williamsburg, Va. | 1693 | John Edwin Pomfret | 1,925 | 898 | 124 | 1,661,500 | 328,183 |
| William Jewell Col., Liberty, Mo. | 1849 | Walter Pope Binns | 829 | 395 | 37 | 2,199,185 | 59,681 |
| Williams College, Williamstown, Mass. | 1793 | James P. Baxter III | 1,110 | 585 | 110 | 12,639,000 | 289,500 |
| William Smith College, Geneva, N.Y. | 1908 | Walter H. Durfee | 286 | 4 | 61 | 707,000 | 89,188 |
| William Woods College (Jr.), Fulton, Mo. | 1890 | H. L. Smith | 362 | — | 35 | 575,000 | 13,000 |
| Willimantic St. Tch. Col., Willimantic, Conn. | 1889 | J. Eugene Smith | 198 | 49 | 49 | $ — | 10,000 |
| Wilmington College, Wilmington, Ohio | 1870 | Samuel D. Marble | 573 | 258 | 40 | 246,525 | 21,985 |
| Wilson College, Chambersburg, Pa. | 1869 | Paul Swain Havens | 478 | 3 | 54 | 852,170 | 56,500 |
| Winona State Tch. Col., Winona, Minn. | 1858 | Nels Minne | 605 | 246 | 50 | — | 25,000 |
| Winston-Salem Tch. Col., Winston-Salem, N.C. | 1892 | Francis L. Atkins | 484 | 95 | 30 | 100,000 | 25,690 |
| Winthrop College, Rock Hill, S.C. | 1886 | Henry R. Sims | 1,551 | 5 | 109 | — | 66,861 |
| Wisconsin, University of, Madison, Wis. | 1848 | Edwin Broun Fred | 23,442 | 12,724 | 1,810 | 4,991,032 | 613,000 |
| Wisconsin State Tch. Col., Eau Claire, Wis. | 1916 | W. R. Davies | 724 | 234 | 60 | — | 30,000 |
| Wisconsin State Tch. Col., LaCrosse, Wis. | 1909 | Rexford S. Mitchell | 1,091 | 409 | 71 | — | 38,437 |
| Wisconsin State Tch. Col., Milwaukee, Wis. | 1880 | J. Martin Klotsche | 1,806 | 630 | 110 | — | 65,298 |
| Wisconsin State Tch. Col., Oshkosh, Wis. | 1871 | Forrest R. Polk | 933 | 372 | 59 | — | 38,217 |
| Wisconsin State Tch. Col., Platteville, Wis. | 1866 | C. O. Newlun | 715 | 275 | 54 | — | 31,427 |
| Wisconsin State Tch. Col., River Falls, Wis. | 1874 | E. H. Kleinpell | 780 | 335 | 49 | — | 28,000 |
| Wisconsin State Tch. Col., Stevens Point, Wis. | 1894 | W. C. Hansen | 883 | 318 | 45 | — | 42,437 |
| Wisconsin State Tch. Col., Superior, Wis. | 1893 | Jim Dan Hill | 952 | 399 | 64 | — | 43,000 |
| Wisconsin State Tch. Col., Whitewater, Wis. | 1868 | R. C. Williams | 790 | 336 | 59 | — | 32,376 |
| Wittenberg College, Springfield, Ohio | 1845 | Rees Edgar Tulloss | 1,469 | 700 | 71 | 2,444,358 | 77,200 |
| Wofford College, Spartanburg, S.C. | 1854 | W. K. Greene | 668 | 421 | 38 | 882,842 | 43,430 |
| Woodstock College, Woodstock, Md. | 1869 | F. C. Wheeler | 172 | — | 33 | — | 121,000 |
| Wooster, College of, Wooster, Ohio | 1866 | Howard F. Lowry | 1,279 | 399 | 85 | 3,600,000 | 105,254 |
| Worcester Polytechnic Inst., Worcester, Mass. | 1865 | Wat T. Cluverius | 878 | 609 | 94 | 4,931,391 | 35,000 |
| Wyoming, University of, Laramie, Wyo. | 1887 | G. D. Humphrey | 3,290 | 1,894 | 239 | 4,352,209 | 133,224 |
| X | | | | | | | |
| Xavier University, Cincinnati, Ohio | 1831 | Celestin J. Steiner | 1,773 | 1,115 | 124 | 226,025 | 89,455 |
| Xavier University, New Orleans, La. | 1925 | Mother M. Agatha | 1,000 | 447 | 70 | 817,946 | 48,100 |
| Y | | | | | | | |
| Yale University, New Haven, Conn. | 1701 | Charles Seymour | 8,671 | 5,203 | 639 | 124,024,084 | 3,642,730 |
| Yankton College, Yankton, S.D. | 1881 | James C. Graham | 433 | 189 | 33 | 709,500 | 41,000 |
| Young L. G. Harris Col. (Jr.), Young Harris, Ga.* | 1886 | J. W. Sharp | 349 | 43 | 15 | 130,000 | 12,000 |
| Youngstown College, Youngstown, Ohio | 1908 | Howard W. Jones | 3,087 | 2,093 | 80 | — | 40,901 |
| Yuba College (Jr.), Marysville, Calif. | 1927 | J. J. Collins | 561 | 179 | 34 | — | 15,000 |

**U.N.R.R.A.:** *see* United Nations Relief and Rehabilitation Administration.

## Uranium.

The wartime development and use of uranium in the atomic bomb, and its prospective use in power generation by atomic fission, led to a world-wide survey of all known and prospective sources of uranium, but for security reasons very little information was made public in this connection. For the same reason, no country reported its output of uranium ores or products.

Prewar consumption was so small that it was supplied by by-product uranium recovered from radium and vanadium ores, but war developments caused uranium to be sought and mined for its own sake. Metallic uranium, which before the war was little more than a laboratory curiosity, was later produced by the ton.

There were wide differences of opinion as to possibility and feasibility of developing commercial power from fissionable material. It was soon recognized that the driving of an automobile or aeroplane was not feasible, but large-scale central station power seemed to have definite possibilities. However, while in some quarters it was asserted that this could be accomplished in from five to ten years, more conservative opinions multiplied these figures by five. (*See* also Atomic Energy; Chemistry; Metallurgy; Physics.) (G. A. Ro.)

## Urology.

The administration of a mixture of two or more sulfonamides for the purpose of combating infections of the urinary system proved successful in 1947 in preventing renal complications. Equal amounts of small doses of sulfathiazole and sulfadiazine or sulfamerazine were found to have a high antibacterial activity, with evidence that they would cause little, if any, damage to the kidneys.

The supply of antibiotic agents was no longer limited, and these drugs were used to an increasing extent. The antibiotics were used frequently in combination with the sulfonamide drugs to good effect. The value of streptomycin in combating gram-negative organisms was attested. Large initial doses are essential, since resistance to the drug develops rapidly. The use of streptomycin, however, was curtailed because toxicity developed in some persons after long-continued use of the drug. This toxicity was especially manifested by involvement of the eighth, or acoustic, nerve apparatus, which results in ataxia and deafness. Systemic reaction was observed so frequently that legal measures were considered which would forbid the administration of streptomycin except under the guidance of a physician. For persistent local infections, such as genitourinary conditions, sinuses and open wounds, tyrothricin administered in a solution of 1:5,000 was found to be of value.

An interesting complication which followed transurethral operations on the prostate gland was reported; namely, haemolysis. An unexplained so-called oliguric syndrome, consisting of a reduction in the daily output of urine and uraemia after operations on the prostate gland, had occurred occasionally and no cause for it could be determined. On investigation, evidence of haemolysis was found, which apparently resulted from the entrance of sterile water, used as an irrigating agent, into the blood stream. The portal of entry was believed to be the prostatic veins that had been severed during operation. The resulting damage to the kidneys resembled the haemoglobinuric nephrosis observed in such situations as the transfusion of incompatible blood, blackwater fever, severe crushing injuries, etc. Considerable investigation was done on this subject, although it was realized that the condition probably is only one of several factors that may be important in the oliguric syndrome. To eliminate this factor, attempts were made to prevent haemolysis by the use of isotonic solutions, such as a 5% solution of glucose, as irrigating fluids during operations on the prostate gland.

Much interest was aroused in the possibilities of the tiding-over of acute renal failure and uraemia (when the renal condition is such that some improvement might be expected), either by means of an artificial kidney or by peritoneal dialysis. Such a situation may be encountered in a variety of conditions, including the one mentioned. By such a procedure the nitrogenous waste products of metabolism are eliminated by means other than the kidneys until the kidneys are able to resume their normal function. With improved mechanism, the artificial kidney was successful in selected cases. Among older persons peritoneal lavage was of some value without necessitating the complicated mechanism of the other method.

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**Uruguay.** A republic in the southeastern part of South America, bounded on the east, south, west and north, respectively, by the Atlantic ocean, the Río de la Plata, Argentina and Brazil. Area, 72,172 sq.mi. (the smallest of any South American republic); est. pop. (1944), 2,235,000. Racial distribution is estimated at 90% white and most of the rest mestizo; large numbers of Europeans, especially Italians and Spaniards, live in Uruguay. The capital and chief port is Montevideo (1945 est. pop., 747,665); other important cities (with 1945 pop. ests. unless otherwise stated) are Paysandú (50,000), Salto (48,000), Mercedes (33,000), Minas (1942 est., 32,000), Tucuarembó (30,000), San José (1942 est., 30,000), Rocha (28,500), Melo (28,000), Durazno (1942 est., 27,000) and Santa Lucía (1942 est., 27,000). Presidents in 1947: Juan José Amézaga, until March 1; Tomás Berreta, March 1–Aug. 1; Luis Batlle Berres, from Aug. 1.

**History.**—Presidential elections on Nov. 24, 1946, had apparently placed Tomás Berreta, public works minister and candidate of the *Batllista Colorado* party, and his running mate, Deputy Luis Batlle Berres, in line for inauguration early in 1947, with a popular vote of 264,626 over the Nationalist candidate, Luis Alberto Herrera, and his vice-presidential running mate Martín Echegoyen, who polled 176,628 votes. Congress on Feb. 11 proclaimed Berreta and Batlle as the officially elected candidates. Berreta at the time was in the U.S. on a trip officially announced as aimed at seeking aid in getting farm machinery for Uruguayan agricultural expansion. Berreta and Batlle were inaugurated on March 1 for the term ending in 1951. Montevideo was host to the third plenary session of the Inter-American Council of Commerce and Production from April 8 to April 11; the meeting, which was attended by 300 business men, mostly from South American countries, was concerned chiefly with problems of readjustment from a wartime economy to peacetime production. Beginning June 30, a 24-hr. general strike crippled public transportation and other services in Montevideo; the strike was called by 60 unions in protest against a government ban on strikes in the public services. Pres. Berreta's health became increasingly bad in midyear and on Aug. 1 he received a leave of absence from the office, Vice-President Batlle succeeding to active control. Berreta died the following day and Batlle then became constitutional president for the balance of the term.

**Finance.**—The monetary unit is the peso, valued at 52.63 cents U.S. currency on Oct. 31, 1947. The public debt continued to grow steadily through the year; successive figures for it were: May 31, 685,700,000 pesos; June 30, 692,100,000 pesos; Aug. 31, 694,200,000 pesos. Government revenues for the first three months of 1947 were 47,300,000 pesos as against 32,700,000 pesos in the same period in 1946. The total gold and foreign exchange holdings available for foreign payments on Feb. 28 were about $145,000,000, including $70,000,000 in blocked sterling, $69,000,000 in gold, $4,400,000 in various currencies and $1,600,000 in an oversold dollar position. Gold held abroad by the Bank of the Republic on June 30 totalled 89,600,000 pesos in contrast with holdings of 142,900,000 pesos on the same date in 1946. A financial agreement with Great Britain was concluded in London on July 15 covering £17,000,000 in frozen credits held by Uruguay; the agreement provided that 10% of the total was to be made available to Uruguay within one year and that most of the balance would be used to buy British-owned public utilities in Uruguay. According to terms of the agreement, £1,000,000 would be released immediately for free disposal by Uruguay and up to £700,000 additional within the following 12 months after ratification of the agreement. Distribution of portions of the remaining credits involved these items: £2,000,000 for purchase of the Montevideo street railways; approximately £3,000,000 for purchase of other utilities exclusive of the Central Uruguayan railway; £6,000,000 for purchase of Uruguayan bonds held in Great Britain; and £100,000 for purchase of buildings in London for use as the Uruguayan embassy and consulate; any remaining balance was to be frozen until 1951.

**Agriculture.**—The area in wheat in 1946–47 was stated to be 903,166 ac. (1945–46: 864,602 ac.) and production for the season was estimated at 188,529 metric tons (1945–46: 216,595 tons); the lower yield was blamed largely on damage by locusts and frost. Tobacco production in 1946 was 1,156,007 kg. (1945: 823,442 kg.). The area devoted to linseed in 1946 was 410,144 ac. (1945: 592,103 ac.) and the production of linseed in 1946–47 was 83,227 metric tons (1945–46: 131,039 tons). The estimate of the area in rice in 1947 was 25,849 ac., an increase of 4,639 ac. over 1946, and production for the year was estimated at 37,000 metric tons, a gain of 20% over 1946. An estimate of the corn crop, made in June, was for a 58% increase in quantity over 1946, although the area was down 6%. Simultaneous estimates of peanut production forecast an increase of 22%, although the area was down 7%; the sunflower seed estimate dropped, however, by 8% and the area devoted to it by 12% from 1946 figures. It was thought by September that locusts would prove an unusually serious menace to agricultural prospects. Cattle sales at Montevideo in the first three months of 1947 were 73,493 (same period in 1946: 161,434); sheep sales in the same period were 447,730 (same period in 1946: 293,179). The decline in cattle sales was attributed to the prevailing low prices.

The government during the year considered a 25,000,000-peso irrigation plan designed to bring into cultivation 247,000 ac. of additional land over a ten-year period.

**Trade and Communications.**—The foreign trade import balance for the first four months of 1947 was approximately $15,000,000; the import balance with the U.S. for the first six months of 1947 was $34,000,000. Frozen mutton exports in the first three months of 1947 were 1,120 metric tons (same period in 1946: 3,466 tons); canned beef exports in the same period were 2,420 metric tons (same period in 1946: 3,828 tons); jerked beef exports in the same period were 1,540 metric tons (same period in 1946: 1,642 tons). Tanned cattle hide exports in the first three months of 1947 were 247,122 kg. (fourth quarter of 1946: 487,809 kg.); sole leather exports in the same period were 70,883 kg. (fourth quarter of 1946: 120,283 kg.). Wool exports from Oct. 1, 1946, to March 31, 1947, were 55,109 bales (same period in 1945–46: 70,727 bales); woollen yarn exports in the first three months of 1947 were 140,594 kg. (same period in 1946: 147,960 kg.); woollen fabric exports in the first three months of 1947 were 44,989 kg. (same period in 1946: 98,714 kg.). Uruguay concluded an agreement with Great Britain during the year for the export of 100,000 metric tons of meat annually, 60,000 tons in canned meats and the balance in chilled or frozen meats; the two governments were also negotiating a sales agreement covering eggs, cheese and powdered milk.

The municipality of Montevideo contracted to buy the city's transportation system, including buses and street cars, for which it was proposed to issue 17,000,000 pesos in bonds; a further 14,000,000-peso bond issue was proposed for improvements in the system. According to such plans, the city would operate all its transportation by 1954. The government extended its telephone monopoly during the first quarter of 1947, by which time it was almost complete. Automotive vehicles in operation Jan. 1, 1947, included: 47,800 passenger cars (49.4% of U.S. and Canadian makes), 19,000 trucks (60.5% of U.S. and Canadian makes), 1,550 buses (20.3% of U.S. and Canadian makes), 650 truck trailers and 1,800 motorcycles and three-wheeled vehicles. Authorities considered plans for building a three-branch, 14.9 mi. subway in Montevideo but press reaction to it was adverse.

The government concluded a treaty with Brazil for construction of an international bridge over the Cuareim river.

**Manufacturing.**—Cotton yarn production in the first three months of 1947 totalled about 750,000 kg. The estimate of wine production in 1947 was 60,000,000 l. (1946: 72,000,000 l.). Crude oil runs to stills in 1946 were 2,503,866 bbl. (1945: 1,965,417 bbl.); by-products produced in 1946 included: gasoline, 781,553 bbl.; aviation gasoline, 14,364 bbl.; kerosene, 428,992 bbl.; gas oil, 226,680 bbl.; fuel oil, 894,896 bbl.; diesel oil, 92,919 bbl. A proposal considered during the year involved harnessing of the Quequay river at a cost of 11,000,000 pesos to develop 70,000,000 kw. of electricity annually.

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**U.S.S.R.:** *see* UNION OF SOVIET SOCIALIST REPUBLICS.

**Utah.** A Rocky Mountain state, admitted to the union in 1896, popularly known as the "Beehive state." Area 84,916 sq.mi. (82,346 sq.mi. land; 2,570 sq.mi. water); pop. (Dec. 31, 1947) 650,000; (U.S. census 1940) 550,310. The rural (nonfarm) population was 150,465 in 1940, (farm) 94,352;

urban 305,493, with the following origins: white (native) 510,662; (foreign-born) 32,298; Negro (native) 1,225 (est. 1947, 3,000); (foreign-born) 10. Farm population decreased considerably after 1940, but was again increasing. Urban population increased about 60% because of war conditions and changed little after the close of the war. Capital, Salt Lake City (pop. est. 1947, 200,000). Other principal cities with 1947 est. pop.: Ogden (62,000), Provo (25,000) and Logan (15,000). In 1946 the Mormon Church gave its membership total as 996,505, a little less than one-half, or 495,000, in Utah and 113,750 in Salt Lake City.

**History.**—In 1947 state-wide and local observances were held commemorating the coming of the Mormon pioneers to the Salt Lake valley 100 years before. Visitors to Salt Lake City's famous Temple square exceeded the 1,000,000 mark—a new tourist record.

One of the best attended and most active National Governors' conferences took place in Salt Lake City, July 13 to 16.

One of the major developments brought about by the administration of Governor Herbert B. Maw during the centennial year was the final conversion of the Geneva Steel plant to private industry under the United States Steel corporation. During the 16 months this plant had been privately operated, it had employed 5,600 persons and paid out $18,000,000 in salaries. The benefits of this plant would extend to coal, oil and limestone mining and to many other industries that were planning to locate in the state.

On April 17, 1947, Heber Bennion, Jr., was appointed secretary of state to fill the unexpired term of E. E. Monson, who died suddenly on April 8; Ferrell H. Adams was auditor; Reese M. Reese, treasurer; Grover A. Giles, attorney-general; and Dr. E. Allen Bateman, superintendent of public instruction.

**Education.**—There were 149,948 children of school age in Utah in 1946 (fiscal year), and an average daily attendance at school of only 129,271 out of an enrolment of 144,118. The total cost of education for the fiscal year July 1946–July 1947, was $20,983,482.51 with $18,498,409.92 devoted to operating expenses. There were 4,857 teachers and 333 principals.

**Social Insurance and Assistance, Public Welfare and Related Programs.**—Total obligations of $9.654,801.35 incurred in 1946 for public assistance exclusive of administration, were distributed as follows: Old-age assistance, $6,226,377.87; aid to dependent children, $2,041,139.52; aid to blind, $74,624.75; aid to employables, $96,316.27; aid to unemployables, $810,116.59; other assistance, $402,226.35. A total of 15,395 households were receiving assistance in June 1946, as compared with 14,895 households in June 1945. From Jan. 1 to June 30, 1947, $5,699,565.53 was distributed for public assistance.

The 1947 legislature fixed the amount of "budgetary needs" for recipients of public assistance at not to exceed (per month) $45 for a one-person case, $90 for a two-person case, $114 for a three-person case and $15 per person for each additional person beyond three in a case, with an over-all maximum of $175 for any case. The maximum must be adjusted according to changes in the U.S. cost of living index Jan. 1 and July 1 each year.

**Communications.**—In 1947 there were 29,780 mi. of roads maintained in Utah by the following agencies: state highway department 5,427; counties 15,427; cities and towns 2,588; and by the U.S. government in various federal reservations and by the grazing service 6,338 mi. Celebration of Utah's centennial year increased vehicle-miles of highway travel by 14% over the previous high year, 1946, and motor vehicle registration went to 180,000 licences, a new high, with registration receipts totalling $1,785,000 for 1947. Receipts from the 4-cent gasoline tax were $6,186,000. State highway expenditures were $9,000,000 of which $4,200,000 were federal co-operative funds. Beginning July 1, 1947, the state was to distribute $1,500,000 annually to cities and counties from motor vehicle registration receipts for expenditure on local roads. There were 63.27 mi. of electric railway and approximately 2,370 mi. of steam railway in 1947.

**Banking and Finance.**—The 60 banks, 48 state and 12 national, had total assets of $572,166,650.45 on Oct. 6, 1947, and total bank deposits reached $538,698,632.87. On Dec. 31, 1946, the 13 state-chartered building and loan associations had aggregate assets of $36,739,158.68. On June 30, 1946, the 6 federal savings and loan associations had aggregate assets of $19,913,720.90.

State receipts for the year ending June 30, 1947, were $61,902,432.72; expenditures were $57,453,374.34. The total of outstanding bonds in 1947 was $1,220,000, with this amount available from the state liquor control fund for retirement of all outstanding bonds. Thus the state was out of debt.

**Agriculture.**—Figures not yet final showed cash income from farm marketings in 1946 was $35,819,000 for crops and $93,783,000 for livestock and livestock products, as compared with final figures of $38,500,000 for crops and $87,734,000 for livestock and livestock products in 1945.

Preliminary value of truck and canning crops was $6,436,000 for 1946; for 1945 $8,318,000. The value of canning tomatoes in 1947 was $1,755,000 and shipping tomatoes $38,000.

Table I.—*Principal Agricultural Products of Utah, 1947 and 1946*

| Crop | Preliminary 1947 | 1946 |
|---|---|---|
| Wheat, tons | 262,020 | 209,430 |
| Hay (tame and wild), tons | 1,208,000 | 1,118,000 |
| Potatoes, bu. | 2,660,000 | 2,775,000 |
| Sugar beets, short tons | 704,000 | 568,000 |
| Celery, crates | 480,000 | 618,000 |
| Tomatoes, fresh, bu. | 82,000 | 66,000 |
| " processing, tons | 72,900 | 66,800 |
| Onions, 100-lb. sacks | 275,000 | 412,000 |
| Peas, tons (processed) | 15,120 | 17,260 |

Because of international agreements, all German and Italian prisoners of war were repatriated as of July 1, 1946, which caused a shortage of agricultural workers. However, these were replaced by approximately 800 Mexican nationals, which number increased to about 975 during the peak of the fall harvest. During May and June, 1947, the number of Mexican nationals, who aided in the thinning of the sugar beets and in the fruit and vegetable harvests, reached nearly 1,950. In October and the early part of November, they were used primarily in the sugar beet, tomato and potato harvests.

**Manufacturing.**—Manufacturing employment in Utah during 1947 was at a rate 65% greater than during the immediate prewar years—1937–41. The average number of workers in manufacturing in 1947 was about 27,500, by a large margin the highest postwar figure. Principal manufacturing fields are food products and primary metal industries. Several large new industrial plants were being built in 1947; many more were in the planning stage. Some of these were plants which would use products from the Geneva Steel mills but others were in such fields as gypsum, rubber products, oil refining, paint, cement, batteries and chemicals.

Annual manufacturing pay rolls in 1944, 1945 and 1946 were slightly in excess of $50,000,000. In 1947 the total was expected to approach $70,000,000. The gross value of Utah's manufactured goods was estimated at $450,000,000.

**Mineral Production.**—Preliminary reports show that metal mining in Utah in 1947 rebounded with great vigour from the lows of 1946, giving the state one of the best peacetime years in its mining history. Gold output climbed to a new all-time peak, and, except for three years during World War II, copper had its best year in state history. Silver, lead and zinc also made good gains.

In 1946, prolonged labour strikes and continued shortages of labour drove production of gold, silver, copper, lead and zinc to the lowest levels in recent years. Copper bore the brunt of the precipitous decline, but the output of each of the other four metals also slumped markedly. Despite appreciable increases in average prices of the five metals, except gold, the value of the five decreased 33% from $90,018,641 in 1945 to $60,202,627 in 1946. Production of manganiferous and tungsten ores increased in 1946, but output of molybdenum, fluorspar, coal, iron ore and vanadium declined. In 1946 the state had a production of 178,533 fine oz. of gold and 4,118,453 fine oz. of silver, as compared with 279,979 fine oz. of gold and 6,106,545 fine oz. of silver in 1945. The peak production year for copper was 1943.

Table II.—*Principal Mineral Production in Utah, 1946 and 1945*

| Mineral | 1946 | 1945 |
|---|---|---|
| Copper, lb. | 228,568,000 | 452,752,000 |
| Lead, lb. | 61,422,000 | 81,634,000 |
| Zinc, lb. | 56,584,000 | 67,260,000 |
| Value of all ores. | $60,202,627 | $90,018,641 |

The 1947 coal production was 1,740.889 tons; the 1947 coke production was 1,078,462 tons. Oil production reached 55,000 bbl. per day.

(J. C. AR.)

**Utilities, Public:** *see* PUBLIC UTILITIES.

**Vanadium.** The vanadium content of ores and concentrates produced by the major sources of supply is as follows, in short tons.

*World Production of Vanadium*

(Short tons of metal content)

| | 1937 | 1939 | 1941 | 1943 | 1945 | 1946 |
|---|---|---|---|---|---|---|
| Northern Rhodesia | 259 | 423 | 377 | 470 | 241 | 75 |
| Peru | 643 | 1,097 | 1,121 | 934 | 758 | 357 |
| South-West Africa | 652 | 567 | 297 | 636 | 141 | 110 |
| United States | 544 | 992 | 1,257 | 2,793 | 1,482 | 636 |
| Total | 2,150 | 3,200 | 3,100 | 4,850 | 2,600 | 1,178 |

Vanadium has been produced in small amounts in several other countries, and during the years of World War II there were appreciable outputs in Japan and Germany, the exact magnitude of which are not known, but which are reported to have been of the order of about half of the known outputs recorded above.

**United States.**—The trend of the vanadium industry in the United States is indicated by the following data, in short tons of vanadium content of ores and concentrates:

| | 1937 | 1939 | 1941 | 1943 | 1945 | 1946 |
|---|---|---|---|---|---|---|
| Mine shipments . . . . . . | 543 | 992 | 1,257 | 2,793 | 1,482 | 636 |
| Imports . . . . . . . . . | 629 | 1,066 | 1,069 | 1,058 | 789 | 406 |
| Peru . . . . . . . . . | 629 | 1,066 | 1,068 | 1,026 | 776 | 396 |
| Consumption . . . . . . . | ? | ? | ? | 3,631 | 2,547 | 825 |

While production and consumption declined each year after the war peak in 1943, consumption took an upward turn in the latter half of 1946, and by midyear of 1947 stood at the highest point after the close of the war. The resulting reaction on production brought receipts of ore at the mills during the first half of 1947 up to more than in the full year 1946. Although output dropped off during the third quarter, mill receipts for the nine months totalled 814 short tons. Imports also improved during 1947, but the total for the three quarters was only 315 short tons. (G. A. Ro.)

## Vandenberg, Arthur Hendrick

(1884– ), U.S. senator and statesman, was born March 22, in Grand Rapids, Mich. He studied at the University of Michigan law school, Ann Arbor, Mich., for one year, and joined the *Grand Rapids Herald* as a reporter, becoming editor and general manager of the paper. He was appointed to fill a U.S. senate vacancy in 1928 and was re-elected in 1934, 1940 and 1946.

Before the United States entered World War II, Vandenberg, a noninterventionist, attacked the lend-lease bill and aid to Britain. After the Japanese struck Pearl Harbor, Vandenberg generally approved the administration's foreign policy.

In 1945 Pres. Franklin D. Roosevelt appointed him delegate to the United Nations conference in San Francisco, Calif. Vandenberg subsequently urged the senate to ratify the U.N. charter which he supported because "this plan regardless of its infirmities, holds great promise that the United Nations may collaborate for peace as effectively as they have made common cause for war."

On Dec. 30, 1946, Vandenberg was named president pro tempore of the senate. During 1946 and 1947, he supported Pres. Harry S. Truman's bipartisan foreign policy. His relations with the president were cordial, and his advice was frequently sought by James F. Byrnes and George C. Marshall.

In 1947, Vandenberg vigorously backed the Truman doctrine and the Marshall plan and advocated a policy of "friendly firmness" toward the Soviet Union.

The latter, however, regarded him as an "imperialist" and "warmaker."

On Dec. 31, Vandenberg definitely renounced any presidential aspirations, declaring he was convinced he could best serve the country by completing his senate term.

**Varnishes:** *see* PAINTS AND VARNISHES.

## Vassar College.

A college for women at Poughkeepsie, N.Y., founded by Matthew Vassar in 1861. The college year 1946–47 was the first in the administration of President Sarah Gibson Blanding, Vassar's sixth, and first woman, president, who had succeeded Dr. Henry Noble MacCracken upon his retirement the preceding July.

Vassar's enrolment in Sept. 1947 was 1,370 women resident undergraduate students, 44 of whom came from foreign countries, 11 graduate students and 47 male veterans. The latter group consisted of nonresident students from the nearby community who were first admitted in April 1946 when Vassar took the lead among women's colleges in making temporary room for veterans.

In May 1947 more than 3,000 Vassar alumnae, members of all living classes, revisited the campus for a series of five reunion week ends during which they discussed problems of family and community life of concern to college women.

In 1947 Vassar college put into operation its revised curriculum providing for less specialization and more correlation of student electives. To meet increased costs and salaries, the trustees voted in March to raise the tuition to $1,600, effective in 1946–47. (For statistics of endowment, enrolment, faculty, library volumes, etc., *see* UNIVERSITIES AND COLLEGES.)

## Vatican City State.

A sovereign independent state, established by the Lateran treaty between the Holy See and the Italian government on Feb. 11, 1929. The treaty is recognized in international law, and the reigning pope is the sovereign. The area of Vatican City is 0.5 sq.mi., excluding the papal estate of Castel Gandolfo and certain basilicas in Rome which are extraterritorial. Pop. (1938 est.): 750. Executive powers are exercised by the governor, responsible to the pope.

The Vatican in 1947 maintained diplomatic relations with 40 states. The status of relations with several additional countries was unsettled because of disturbed conditions. The Vatican had 28 nuncios, representatives of ambassadorial rank, and 5 internuncios, representatives of lesser rank, in as many countries. Bishop Gerald P. O'Hara, of Savannah-Atlanta, Ga., was named regent to the nunciature in Bucharest, Rumania. Bishop Joseph P. Hurley of Saint Augustine, Fla., continued as regent in Belgrade, Yugoslavia. The Vatican sent apostolic delegates, representatives without accredited rank, to 18 countries, including Canada, Great Britain and the United States.

During 1947 there was an exchange of correspondence between Pope Pius XII and Pres. Harry S. Truman dealing with world peace, and implicitly condemning communism. Myron Taylor continued at the Vatican as Truman's personal representative. Baptists in the United States protested both the interchange of letters and the return of Taylor as presidential representative at the Vatican as a violation of their doctrine of the separation of church and state. However, the president stated that he found the relationship helpful during the existing world crisis.

In March the Vatican gave a new interpretation to article xii of the 1929 concordat with Italy. Subsequently, the constituent assembly reaffirmed the Lateran agreement, regulating church-state relations in Italy.

In July the *Osservatore Romano,* semiofficial Vatican daily newspaper, attributed the break-up of the foreign ministers conference in Paris to soviet opposition to Allied peace plans and commented in strong language on Russia's rejection of the Marshall plan.

On the occasion of Secy. of State George C. Marshall's speech in Rio de Janeiro, Brazil, in August, the paper expressed its conviction that the Latin-American policy of the United States paved the way for peace and continental security, whereas communism constituted a threat to both. *L'Osservatore* recalled that similar principles had been expressed by many popes, and as late as Christmas Eve 1945, by Pius XII, who said that totalitarianism is not only incompatible with a true and sound democracy but also represents a permanent danger of war.

Extensive changes in Greek ecclesiastical jurisdictions were announced by the Holy See. The Rev. Marco Sigala was named archbishop of Athens, Greece, by Pope Pius XII, accompanied by other transfers and appointments.

The Vatican in August approved creation of an international relief organization to co-ordinate the relief work of Catholic groups in all countries. In announcing the program the pope paid tribute to the "grandiosity" of Catholic relief work in the United States.

During September the Food and Agricultural organization invited the pope to send an observer to future meetings of that body. (*See* also PIUS XII; ROMAN CATHOLIC CHURCH.)

(J. LAF.)

**Veal:** *see* MEAT.

## Vegetable Oils and Animal Fats.

Total U.S. production of fats and oils from domestic materials increased in 1947 to 9,900,000,000 lb. compared with 8,848,000,000 lb. in 1946 and the high record of 10,847,000,000 lb. in 1943. The increase in 1947 was principally in butter, lard, tallow and grease and cottonseed oil. Consumption of oils and fats also increased but less rapidly than production and imports. The principal increases in imports were in linseed oil, tung and copra. Stocks were increased during 1947 to replace the 460,000,000 lb. withdrawn in 1946. Stocks as a whole were down to 1,266,000,000 lb. on Dec. 31, 1946—the lowest level after the 1930s. By Aug. 1947 stocks had recovered to more than 1,400,000,000 lb.

Total U.S. butter production was estimated at 1,700,000,000 lb. in 1947, which was a gain of about 12% over 1946. Production of lard and pork fats also increased in 1947, although it was lower in the fall months than a year earlier. Linseed oil production was below 1946 as well as the average 1937–41. All of the drying oils were in reduced supply except tung oil, of which a larger amount was imported. Peanut-oil production increased sharply under the stimulus of a price support of $200 per ton through 1947—$28 per ton above the 1946 price. Crushers at times paid more than the support price. Large exports were made for crushing abroad. Civilian consumption of peanuts as food declined to 5.2 lb. per capita, lowest for 5 years, and allowed more of the crop to be crushed for oil. Cottonseed increased from the low level of 1946. Soybeans increased only slightly although support prices were maintained at the level of 1944–46.

*U.S. Production of Principal Fats and Oils, 1943–1947*

(In millions of pounds)

| | 1947* | 1946 | 1945 | 1944 | 1943 |
|---|---|---|---|---|---|
| Butter | 718 | 1,450 | 1,699 | 1,818 | 2,015 |
| Lard | 901 | 2,130 | 2,132 | 3,203 | 3,056 |
| Edible tallow | 98 | 140 | 202 | 198 | 259 |
| Edible vegetable oils | 1,466 | 2,700 | 2,969 | 2,703 | 2,949 |
| Soap fats and oils | 860 | 1,830 | 1,923 | 2,149 | 1,817 |
| Drying oils | 209 | 510 | 463 | 735 | 720 |
| Other oils | 80 | 30 | 40 | 33 | 31 |
| Totals | 4,332 | 8,790 | 9,428 | 10,839 | 10,847 |

*January to June.

Prices of all fats and oils rose through the years of World War II, and after price ceilings were removed in 1946 advanced rapidly. The index of prices of 27 items was 148% of prewar, 1935–39, in 1945; 216% in 1946 and had advanced to 251% by Sept. 1947. Strong export demand from Europe as well as the large domestic consumption was expected to support prices through 1948. Animal fats were especially short and not likely to be produced in increased quantity in 1948. Supplies for import were increasing; but the strong demand of Europe was holding imports down to less than half the prewar volume, the total amounting to almost the same as exports. The world's production of animal fats was increasing slowly and oil seeds at a somewhat more rapid rate.

Consumption of fats and foods containing them increased slightly in 1947. In 1946 the total of food products consisting of butter, lard, margarine, shortening and other edible oils amounted to only 39.6 lb. per person compared with 47.4 lb. in 1940. Butter amounted to 8.2 lb., lard 11.8 lb., margarine 3.1 lb., shortening 10 lb. and oils 6.3 lb. The consumption of all oils including soap, paints, etc., was 63.7 lb. in 1946 and slightly more in 1947. Government operations in oils and fats were in smaller quantities than during the war years, but about 55,000,000 lb. of lard was bought for export to Austria and Germany in July and August. Total allocation of all kinds of fats and oils for 1947 amounted to 1,116,000,000 lb.

Production of fats and oils was smaller than in 1946 in Europe because of drought and the feed scarcity which held down livestock productions. Larger output of whale oil, copra and some other oils offset the reduction in Europe and provided exports amounting to nearly 1,000,000 tons more than was shipped in 1946. (*See* also BUTTER; COCONUTS; COTTON; MARGARINE; PEANUTS; SOYBEANS.)

(J. C. MS.)

## Vegetables.

The U.S. crop of 25 vegetables, classed as truck crops for fresh market, in 1947 was 12% below the record crop of 1946 but 15% above average. New high records were made by sweet corn, kale, lettuce and watermelons. Other vegetables mostly yielded less than in 1946 but were above the ten-year average 1936–45. The tonnage of eight crops for processing was 13% less than in 1946 but 21% above average. Only three crops, cabbage, beets and spinach, were below average, while lima beans set a new high record. The total acreage of vegetable crops was 3,617,000 ac. compared with the record acreage of 4,035,000 ac. grown in 1946.

Prices of fresh vegetables were at high levels through 1947 in spite of continued high production and large stocks of canned vegetables. Consumption of fresh vegetables continued to be large, except for occasional gluts of heavy shipments of some crops. Crops for processing sold at high prices in the face of the large stocks of canned vegetables. Contracted tonnage prices were about the same as in 1946 but some open-market tonnage sold at lower prices.

**Commercial Truck Crops for the Fresh Market.**—The total tonnage of 25 truck crops grown for the fresh market was estimated at 7,978,000 tons in 1947 compared with the record of 9,064,000 tons raised in 1946 and a ten-year average (1936–45) of 6,933,000 tons. The acreage of these crops was 10% less in 1947 than a year earlier, amounting to 1,844,000 ac., about 6% above the average. Yields were 2% below 1946 but 9% above average.

The crops that exceeded production of 1946 were kale, lettuce, sweet corn, artichokes, asparagus and watermelons, while the shortest crops were onions, melons, cabbage, eggplant and escarole. Higher market prices were reflected in the total value of the smaller crop, $597,589,000 compared with $577,366,000 in 1946 and the average of $338,677,000 in 1936–45. The top crops in total value were: lettuce $108,367,000; tomatoes $87,112,000; celery $56,864,000 and onions $53,142,000. Cabbage,

**Table I.**—*U.S. Vegetable Production for Fresh Market, 1947, 1946 and 10-Year Average, 1936–45*

(In thousands)

| Crop | Unit | 1947 | 1946 | 10-year average |
|---|---|---|---|---|
| Artichokes | boxes | 761 | 700 | 835 |
| Asparagus | crates | 4,431 | 4,092 | 4,657 |
| Beans, lima | bu. | 1,489 | 1,549 | 1,331 |
| Beans, snap | bu. | 17,006 | 18,882 | 15,855 |
| Beets | bu. | 1,942 | 2,249 | 2,167 |
| Cabbage | tons | 1,150 | 1,386 | 1,140 |
| Cantaloupes | crates | 12,633 | 13,828 | 9,629 |
| Carrots | bu. | 23,797 | 26,430 | 20,519 |
| Cauliflower | crates | 11,385 | 12,741 | 8,899 |
| Celery | crates | 20,094 | 23,329 | 16,963 |
| Corn, sweet | ears | 325,520 | 319,860 | 263,094 |
| Cucumbers | bu. | 6,263 | 6,975 | 4,648 |
| Eggplant | bu. | 1,091 | 1,804 | 1,063 |
| Escarole | hmp. | 958 | 1,385 | 801 |
| Honeyball melons | crates | 70 | 193 | 297 |
| Honeydew melons | crates | 3,340 | 4,591 | 3,089 |
| Kale | bu. | 702 | 556 | 638 |
| Lettuce | crates | 34,254 | 33,801 | 23,575 |
| Onions | sacks | 36,800 | 50,878 | 34,509 |
| Peas, green | bu. | 4,373 | 5,275 | 7,617 |
| Peppers, green | bu. | 5,895 | 7,572 | 5,234 |
| Shallots | bu. | 443 | 668 | 562 |
| Spinach | bu. | 12,123 | 13,783 | 14,729 |
| Tomatoes | bu. | 28,830 | 34,229 | 26,069 |
| Watermelons | melons | 81,512 | 80,825 | 65,778 |

U.S. GOVERNMENT INSPECTORS spot-checking the condition of fresh celery shipped into Philadelphia produce yards by refrigerator car in 1947

cantaloupes and carrots were each worth more than $40,000,000. In value of truck crops, leading states were as follows: California $224,184,000; Florida $68,760,000; Texas $43,277,000; Arizona $39,477,000; New York $34,163,000; New Jersey $24,534,000; Michigan $23,040,000 and Colorado $20,022,000. Texas had advanced to third place and Arizona to fourth from sixth. New York and New Jersey had declined in comparative output. The steady development of southwestern truck production continued.

A study of the losses in retailing fresh fruits and vegetables in a number of stores in Pennsylvania and New Jersey disclosed an average of 7.4% of the value of the actual sales or $74 for each $1,000 of goods sold. The largest losses were in lettuce, tomatoes, melons, peppers and cauliflower among the vegetables and bananas, oranges, and apples among the fruits.

**Commercial Truck Crops for Processing.**—The total tonnage of 11 U.S. truck crops for processing harvested in 1947 was 5,470,930 tons compared with 6,304,060 tons raised in 1946 and the 10-year average 1936–45 of 4,522,080 tons. The acreage —1,800,000—of these 11 crops was 10% less than that of 1946 but 13% above the average of 1,600,000 ac., 1936–45. Yields per acre were above average in 1947 for asparagus, green lima beans, cucumbers, green peas, spinach and tomatoes and below average for snap beans, beets, cabbage for sauerkraut and sweet corn. Prices per ton for these processing crops were lower in 1947 than in 1946 for 6 crops and higher for 5, with the general result that the total value of the 11 crops was $209,125,000 in 1947 compared with $249,489,000 in 1946 and $114,943,000 for the 10-year average 1936–45. Crops that brought higher average season prices in 1947 were green lima beans, beets, cabbage, sweet corn, green peas and tomatoes.

The pack of canned vegetables for the calendar year 1947 was estimated at 6,461,000,000 lb. compared with 7,612,000,000 lb. in 1946 and the prewar average of 4,084,000,000 lb. (1935–39). Stocks at the beginning of 1947 were 4,562,000,000 lb., a high record, making a total available supply near the record of 1946. Civilian consumption was estimated at about 46 lb. per capita. The production of frozen vegetables, 390,000,000 lb., was the highest on record, except for 1946. Stocks of 332,000,000 lb. were the largest on record and tended to depress retail prices somewhat. Consumption of frozen vegetables increased steadily from a prewar average of less than ½ lb. to 2.25 lb. in 1947. Exports of canned vegetables declined from the high record of 1946. (*See* also AGRICULTURE; CORN; HORTICULTURE; LETTUCE; POTATOES; TOMATOES.) (J. C. Ms.)

Table II.—*U.S. Production of 11 Vegetables for Processing, 1947, 1946 and 10-Year Average*

(In tons)

| Crop | 1947 | 1946 | Average 1936–45 |
|---|---|---|---|
| Asparagus | 102,510 | 119,990 | 75,670 |
| Beans, lima | 48,900 | 44,610 | 29,490 |
| Beans, snap | 166,000 | 207,400 | 160,700 |
| Beets | 73,600 | 141,380 | 105,600 |
| Cabbage | 69,900 | 269,200 | 162,200 |
| Corn, sweet | 1,042,600 | 1,241,800 | 962,500 |
| Cucumbers | 242,660 | 252,170 | 164,160 |
| Peas, green | 436,940 | 522,270 | 332,790 |
| Pimentos | 18,320 | 23,160 | 16,370 |
| Spinach | 57,500 | 88,400 | 70,500 |
| Tomatoes | 3,212,000 | 3,393,700 | 2,442,100 |

## Venereal Diseases.

According to a report made available in late 1947 by the interim commission, World Health organization, increases throughout the world in the incidence of venereal diseases because of World War II brought control to the fore as a major international problem. In war-torn and occupied countries the incidence rates of the venereal diseases were not only doubled and tripled, but, as in one of the European countries the increase was twelvefold. There was some evidence at the end of the year, however, that further increases had been checked in most European countries and that in some the number of cases had begun to decline.

In the U.S., the number of reported cases of civilian primary and secondary syphilis increased over 1946 for the second year in succession. This increase was the result of the return to civilian life of millions of adult males in the age group in which syphilis occurs frequently. The rates per 1,000 total population of primary and secondary syphilis cases reported by civilian and military sources did not reflect the sharp increase noted in the number of such cases reported for civilians in 1946–47. A study made by the U.S. public health service based on rates calculated for the combined civilian-armed forces' population of the U.S. showed a continuous increase in the rate of primary and secondary syphilis reported from 1941–46 with a levelling off in 1947. (*See* table on page 776.)

Since a steady decrease was shown in the congenital and late syphilis rates, the total syphilis reported rate had shown a continuous decline after 1943. New cases of early latent and congenital syphilis reported were approximately the same in fiscal 1947 as in fiscal 1946. Late and late latent cases reported were below the number in the previous year, although the downward trend in this group for 1947 was much less than it had been in 1944–45–46.

The general mortality and infant mortality rates for syphilis, as well as admissions to mental hospitals rates, all reached new low points for the latest years in which data were available in 1947. These were 9.3 (estimated) per 100,000 population for general mortality in 1946; .25 per 1,000 live births for infant mortality in 1945; and 5.7 per 100,000 population for admissions to mental hospitals in 1945. These figures probably reflected the effectiveness of treatment in prevention.

More than 400,000 civilian cases of gonorrhoea were reported in 1947, the largest number yet reported to the U.S. public health service. There was evidence, however, that this was far

*Trend of Syphilis Morbidity Reporting, U.S. Civilians and Armed Forces*
*1941-47*

| | | Reported Cases | | | | | Rate per 1,000 Population | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Fiscal Year | Est. Pop. in thousands* | Total including not stated | Primary or secondary | All early syphilis (primary, secondary, early latent) | Congenital | Late and late latent | Total including not stated | Primary or secondary | All early syphilis (primary, secondary early latent) | Congenital | Late and late latent |
| | | | | | Continental U.S. Civilians | | | | | | |
| 1941 | 131,897 | 477,841 | 67,958 | 176,616 | 17,592 | 201,190 | 3.623 | .515 | 1.339 | .133 | 1.525 |
| 1942 | 131,943 | 472,245 | 75,704 | 192,137 | 16,924 | 202,216 | 3.579 | .574 | 1.456 | .128 | 1.533 |
| 1943 | 128,728 | 564,918 | 82,230 | 231,139 | 16,173 | 252,995 | 4.388 | .639 | 1.796 | .126 | 1.965 |
| 1944 | 127,028 | 458,199 | 78,418 | 200,808 | 13,576 | 203,396 | 3.607 | .617 | 1.581 | .107 | 1.601 |
| 1945 | 127,037 | 356,315 | 77,007 | 178,142 | 12,339 | 142,731 | 2.805 | .606 | 1.402 | .097 | 1.124 |
| 1946 | 133,543 | 360,918 | 94,957 | 202,293 | 12,106 | 125,836 | 2.703 | .711 | 1.515 | .091 | 0.942 |
| 1947 | 140,974 | 373,296 | 106,594 | 214,349 | 12,284 | 122,257 | 2.648 | .756 | 1.520 | .087 | 0.867 |
| | | | | | Total Civilian and Armed Forces | | | | | | |
| 1941 | 132,638 | 484,647 | 74,764 | 183,422 | 17,592 | 201,190 | 3.654 | .564 | 1.383 | .133 | 1.517 |
| 1942 | 133,953 | 486,386 | 89,845 | 206,278 | 16,924 | 202,216 | 3.631 | .671 | 1.540 | .126 | 1.510 |
| 1943 | 135,646 | 594,021 | 111,333 | 260,242 | 16,173 | 252,995 | 4.379 | .821 | 1.919 | .119 | 1.865 |
| 1944 | 137,368 | 501,947 | 122,166 | 244,556 | 13,576 | 203,396 | 3.654 | .889 | 1.780 | .099 | 1.481 |
| 1945 | 138,923 | 411,840 | 132,532 | 233,667 | 12,339 | 142,731 | 2.965 | .954 | 1.682 | .089 | 1.027 |
| 1946 | 140,387 | 409,531 | 143,570 | 250,906 | 12,106 | 125,836 | 2.917 | 1.023 | 1.787 | .086 | 0.896 |
| 1947 | 142,673 | 399,067 | 132,365 | 240,120 | 12,284 | 122,257 | 2.797 | .928 | 1.683 | .086 | 0.857 |

*As of Jan. 1 (mid-point of fiscal year).

below the real incidence of gonorrhoea and it was not possible to interpret the increase in gonorrhoea reporting as being attributable to a higher incidence rate. Treatment of gonorrhoea on epidemiologic or clinical evidence rather than bacteriologic identification of the gonococcus was an increasingly widespread practice.

During the fiscal year health department clinics made approximately 1,500,000 diagnostic observations of persons to detect the presence or absence of venereal disease. About a third of these observations resulted in the diagnosis of at least one venereal disease. Among the previously untreated syphilis infections found by clinics, approximately 57,000 were primary and secondary, 56,000 early latent, 8,000 congenital and 38,000 late syphilis cases. About 70% of the primary and secondary cases without previous treatment were referred to in-patient care for therapy. Less than 5% of approximately 300,000 gonorrhoea cases diagnosed by clinics were referred for in-patient care. Clinics (excluding rapid treatment centres) obtained on an average of about one contact from each primary and secondary syphilis case diagnosed.

State-wide in-patient treatment services were provided through special federal grants supplementing local funds in 42 states, the District of Columbia and the Virgin Islands. Federal grants amounted to 75% of the total cost. Allotments were made to 36 rapid treatment centres and 29 bed contract plans in which syphilis patients were referred to general hospitals by health departments. During the year, 181,000 patients were admitted to rapid treatment centres. This was a 3% increase over the previous year. Syphilis patients comprised an even greater proportion of total admissions in 1947 (85%) than in 1946 (68%). Gonorrhoea admissions declined to 5% of total admissions in 1947 as compared with 18% in 1946.

Treatment for gonorrhoea was stabilized to one or two injections of penicillin on out-patient schedules. Studies on the treatment of syphilis with penicillin continued to show no factors detracting from the great promise indicated in early reports. Penicillin administered every two or three hours during an average of nine days was used successfully for the in-patient treatment of most cases of early acquired syphilis, and the treatment of syphilitic pregnant women. Out-patient schedules utilizing penicillin in oil and beeswax, administered once daily were also used with encouraging results.

New elements entering into projects developed by the venereal division of the U.S. public health service included an attempt to intensify contact investigation during the course of a program of mass blood testing; a program of public education designed specifically to spread an awareness of the symptoms of venereal disease in order to encourage infected individuals voluntarily to seek diagnosis, a program in which mobile clinics were used to examine persons on large plantations in the rural south, and a plan to intensify and speed up the process of contact investigation.

Congress appropriated $17,426,300 for the fiscal year for venereal disease control; $8,764,400 was allocated to the states and territories; $6,681,882 was expended for maintenance and operation of rapid treatment centres and project grants for other in-patient care; $1,980,018 was used for administration, clinical and laboratory research, demonstrations, scientific information, public and professional education and other control activities.

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**Great Britain and Europe.**—Increases in venereal disease in Europe, as mentioned above, were apparently checked at the end of 1947. In Great Britain the incidence of syphilis during the first six months showed a decrease in most London and provincial clinics, and there was every indication that the drop would be maintained. In 1946 the number of cases of syphilis had been twice as high as in 1945, an increase similar to that of 1920, two years after World War I. Cases of venereal diseases in the British army in 1946, per 1,000 per annum, had been 185 in Germany, 168 in Austria and Italy and 33 at home; the incidence of fresh cases among British soldiers for 1947 in the British zone was 31.2 per 1,000 per annum. In Berlin the number of cases was higher than this, but in Hamburg it was lower. There was on the other hand a large increase in venereal diseases in France. This was attributed to the closing of brothels by the decree of April 13, 1946, but H. Gounelle and P. Girault maintained that this was only a contributory cause and that the steep rise in incidence really began as far back as 1941.

Official figures in this field may be fallacious, however, as a much larger number of cases of gonorrhoea and syphilis, both service and civilian, were being treated with penicillin by specialists and general practitioners, and of these there was no record.

The success of the educational campaign carried out by the Central Council for Health Education in Britain in making the population "V.D. conscious" was shown by the increasing number of both men and women (106,000 in 1946) who attended clinics with signs or symptoms simulating venereal disease, but which on examination were considered to be nonvenereal in origin. In 1946 more than 50% of these cases were suffering from such diseases as nongonococcal urethritis, vaginitis, warts and balanitis.

Advances in treatment continued. R. B. Greenblatt and his collaborators showed that streptomycin was far more efficacious than antimony in the treatment of *granuloma venereum* (4th venereal disease). Streptomycin was also found to be effective in the treatment of gonorrhoea, but there was little indication that this antibiotic would replace penicillin, a relatively nontoxic drug. Pleuropneumonialike organisms are sensitive to streptomycin, and A. H. Harkness obtained an excellent result in a case of Reiter's diseases (nongonococcal urethritis with polyarthritis) after a ten days' course of this antibiotic.

British anti-lewisite, or BAL (known as AX 217 for security reasons during the war), was used extensively in Britain and the U.S., usually with excellent results, in the treatment of arsenical dermatitis. Its therapeutic value was established and plans were well advanced for an issue by firms in Britain of ampoules for intramuscular injection, subject to biological control. The preparation was used with success in other arsenical intoxications, such as granulo-cytopenia and encephalopathy.

Penicillin in oily suspensions (used largely for the one injection treatment of gonorrhoea) was employed more frequently in Britain for the treatment of syphilis (300,000 units twice daily for ten days); the three-hourly therapy with aqueous solutions, for which patients had to be admitted to hospital, was less favoured. Many cases of syphilis were, however, treated with aqueous solutions of twice-daily injections of 300,000 units or more; the results, as gauged by clinical response and serological tests, appeared to be equal to those obtained with multiple injections, but the final assessment demanded many years of clinical and serological observation.

Regulation 33B, a wartime measure that provided for the notification of persons alleged to have spread venereal disease, lapsed at the end of 1947. (*See* also PUBLIC HEALTH SERVICES.)

(A. H. Hs.)

**Venezuela.** A north-coast South American republic, bounded on the west, south, east and north, respectively, by Colombia, Brazil, British Guiana and the Caribbean. Area: 352,143 sq.mi.; pop. (1946 est.): 4,300,000, including slightly more than 100,000 forest-dwelling Indians and 23,320 Venezuelans living abroad. Racial distribution has never been officially calculated or estimated, but important fractions are mestizo, Negro and mulatto; about 80% of the population is rural. The capital is Caracas (1942 est. pop., 269,930); other important cities (with pop. by 1941 census) are Maracaibo (112,519), Valencia (53,938), Barquisimeto (54,176), Maracay (32,992), San Cristóbal (31,447), Cumaná (25,893), Puerto Cabello (22,087), Ciudad Bolívar (19,789), Coro (18,962) and Carúpano (16,548). President in 1947: Rómulo Betancourt.

**History.**—The year 1947 brought a virtual end to the provisional regime which had been in power after the successful revolution against the regime of Pres. Isaías Medina Angarita in Oct. 1945. Principal events of 1947 were the adoption of a new constitution in July and the election of a president and legislators in December. The provisional government resigned on March 23 and was reformed with the addition of four members; control remained essentially in the hands of the left-of-centre Acción Democrática, the political party which had taken the lead in the 1945 revolution. The new cabinet on March 26 declared amnesty for political exiles. United States Ambassador Frank P. Corrigan on April 11 walked out of a session of the constituent assembly when a Communist member spoke denouncing United States policies. The government on April 13 arrested 11 alleged conspirators and accused Gen. Eleázar López Contreras, president from 1935 to 1941 and a political exile from Oct. 1945, of plotting to return from the United States.

The constituent assembly signed and the provisional president promulgated the new constitution on July 5; it was Venezuela's 20th constitution and supplanted the one of 1936. The 1947 law provided for a federal government based on advanced domestic and international principles and divided territorially into 20 states, 2 territories and various small insular dependencies. The constitution established comprehensive individual and social rights and duties, including woman suffrage. The government is headed by a president elected by direct, popular vote for a five-year term and assisted by cabinet ministers of his own appointment. The bicameral congress is composed of a senate, in which the states have two senators each, and a chamber of deputies, members of which are chosen on a population basis; both senators and deputies serve for five years and the constitution authorizes proportional representation. The judiciary is headed by a supreme court of justice of ten members. The constitution provided for a good deal of economic planning.

The government reported on July 26 that a revolt plot in the Maracay garrison near Caracas had been suppressed, with one officer killed. Jovito Villalba, head of the leftist Democratic Republican Union party, was arrested Aug. 18 for holding an unauthorized political meeting. The government on Sept. 12 reported that another armed coup, at Caracas, had been crushed. Acción Democrática at a mass meeting on Sept. 12 nominated Rómulo Gallegos, aged 63, a prominent Venezuelan novelist, as its presidential candidate in the later elections. Copei, a conservative party with church support, subsequently nominated Rafael Caldera, aged 31, as its candidate. The provisional government and the constituent assembly took positive views in different foreign matters; on Oct. 11 the assembly termed the Paraguayan government, where a civil war had recently ended unsuccessfully for the rebels, one of "usurpation and terror" and "a menace to the continent." Authorities on Nov. 15 charged that the Dominican Republic might be concealing a plot by Venezuelan "reactionaries"; this charge was related to the ill feeling which for months had persisted between those two governments. As early as Feb. 2, leftist papers in Caracas had reported plans for an alleged invasion of Venezuela from the Caribbean; that rumoured invasion was attributed to López Contreras, a complicity which he denied at Miami, Fla.

National elections were held Dec. 13. Early and incomplete returns credited Gallegos with 121,799 votes, Caldera with 36,578 and Gustavo Machado (Communist) with 5,987; congressional candidates of Acción Democrática reportedly led by about a three-to-one margin. The government on Feb. 26 rejected a United Nations Relief and Rehabilitation association request for an additional $5,000,000 contribution. Two members of a scientific expedition were killed March 3 when attacked by Indians in the Guiana jungle. The government on May 11 announced that 740,000 ac. of land would be distributed to landless Venezuelans and European immigrants.

**Religion.**—Archbishop Lucas Guillermo Castillo on March 8 excommunicated four priests who quit the Roman Catholic Church to found a Venezuelan apostolic church.

**Finance.**—The monetary unit is the bolívar, valued on Oct. 31, 1947, at 29.85 cents, U.S. currency. The 1947–48 budget, submitted to the constituent assembly June 25, was the highest in Venezuela's history. It provided for expenditures of 1,199,500,000 bolívares and estimated revenues at 1,099,928,500 bolívares, the balance to be taken from treasury reserves. The 1946–47 budget, which originally totalled 787,109,000 bolívares, was ultimately increased to 1,038,991,054 bolívares. Liquid treasury reserves April 30, 1947, were 212,198,181 bolívares. Purchases of foreign exchange in 1947 by the central bank up to July 31 were $254,857,251 and sales in the same period were $258,465,881; purchases and sales, respectively, during the same period in 1946 were $163,282,551 and $161,587,548. Government revenues for the fiscal year 1946–47 were 1,095,286,000 bolívares, 65,000,000 higher than budget estimates and 31,176,043 higher than total expenditures. Foreign exchange held abroad, including earmarked gold, on July 31 were $88,960,460 (July 31, 1946: $71,625,095). The government during 1947 considered establishment of a federal mortgage bank.

**Trade and Communications.**—Crude oil exports for the first 5 months of 1947 were 161,282,072 bbl. The government considered plans for dredging the bar at the mouth of Lake Maracaibo which had long handicapped access to the rich oil deposits around and under the lake. The government made tentative plans in 1947 for establishment of a new national merchant fleet, the Compañía Venezolana de Navegación, with 6,000,000 bolívares of government and 4,000,000 bolívares of private capital. Plans developed during the year for additions to the joint merchant-marine project begun initially with Colombia and Ecuador in 1946. The Caracas transportation system was impeded by serious bus strikes in August. Air France began plane service via Martinique to La Guaira, near Caracas, in August. Venezuela concluded a commercial pact with Czechoslovakia Nov. 27.

**Production.**—Sugar production in the first four months of 1947 was 12,198 metric tons, the smallest figure in six years. Corn prospects for the year were considerably hurt by army worm damage. Nelson A. Rockefeller, former U.S. assistant secretary of state, announced in Caracas on Jan. 26 that he would establish a project, with U.S. and Venezuelan private capital, to aid Venezuelan agricultural production; the plan came to fruition with the signing of an agreement by Rockefeller at Caracas on June 23 to supply capital to stimulate Venezuelan agriculture and industry. Crude oil production in the first five months of 1947 was 176,643,149 bbl.; 273 new wells were completed during that period. The amount of crude petroleum refined in the same period was 13,770,168 bbl.

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(R. H. FN.)

## Vermiculite.

Following a doubling of the United States output of vermiculite during the war years, production was still growing in 1947 under the demand created by new building construction. After some decline in output in 1943 and 1944, there was an increase to 64,808 short tons in 1945 and 86,390 short tons in 1946. The chief uses are in lightweight concrete and plaster, and as a heat insulator.

(G. A. Ro.)

## Vermont.

A north Atlantic state of the United States of America, the only one of the New England states without a sea coast; popularly known as the "Green Mountain state"; admitted to the union in 1791. Area: 9,609 sq.mi., of which 331 sq.mi. are water. Population (1940): 359,231 (including 235,992 rural, 123,239 urban); 327,079 native white, 31,727 foreign-born, 384 Negro, 41 of other races. The U.S. bureau of the census on July 1, 1947, estimated the civilian population of the state to be 364,000. Montpelier is the capital city, with a population (1940) of 8,006. The chief cities are Burlington (27,686) and Rutland (17,082).

**History.**—Bills enacted by the general assembly in session from Jan. 8, 1947, to April 26, 1947, included measures relating to the state income tax, a minimum salary and retirement system for teachers, creation of a state department of public safety and the writing of a textbook of Vermont history. George D. Aiken and Ralph E. Flanders were U.S. senators from Vermont; Charles A. Plumley, representative to congress. Chief state officers were Ernest W. Gibson, Jr., governor; Lee E. Emerson, lieutenant governor; Rawson C. Myrick, secretary of state, and Levi R. Kelley, state treasurer. On Aug. 31, 1947, Myrick resigned from office and Helen E. Burbank, his deputy, became acting secretary of state. Miss Burbank was appointed to the office of secretary of state on Oct. 15, 1947, by Governor Gibson.

**Education.**—There were 857 elementary schools in the state in 1947, with a teaching staff of 1,751. The elementary school enrolment in 1946 was 43,849 (previously estimated at 38,608). In 1947 there were 568 one-room rural elementary schools. There were 85 approved public high schools in 1947, with a teaching staff of 707 and an enrolment of 18,905. The 3 state teachers colleges had a total enrolment of 365 and a teaching staff of 31. The state superintendent of schools in 1947 was the commissioner of education, Ralph E. Noble.

**Social Insurance and Assistance, Public Welfare and Related Programs.**—Relief in general was administered by the overseer of the poor in each town. A total of $2,132,648.50 was expended from state funds for old-age assistance; 5,823 persons received such aid in 1947. Dependent children receiving aid from state funds numbered 1,888 in 685 families during the month of June 1947; the amount expended from these funds during the year ending June 30, 1947, was $333,154.33; 1,122 children were under the care of the state as state wards. Blind assistance funds were distributed to 178 persons in the month of June 1947. The 3 state correctional institutions had a total of 337 inmates during the year 1947, with total expenses amounting to $510,909.12. Unemployment compensation benefits payments numbered 64,515 in 1947, and amounted to $1,055,140; 52,996 payments of readjustment allowances amounting to $1,046,421 and 1,795 self-employment payments amounting to $164,709 were made to World War II veterans.

**Communications.**—The total mileage of the public highway system (state, state-aid and town highways) as of June 30, 1947, was 14,214.22 of which 1,808.06 mi. were in the state highway system and 2,710.52 mi. were in the state-aid highway system. Construction and maintenance expenditures for state highways amounted to $3,850,685.16 during the fiscal year ending June 30, 1947, for state-aid highways in the same period $1,362,999.05 and for town highways $1,050,003.21. There were 954.79 mi. of steam railroads and 4.25 mi. of electric railroads on Dec. 31, 1947. There were 207 mi. of airways, with 21 airports and 2 airways in Vermont in 1947. Telephone subscribers were estimated at 80,000 on Dec. 31, 1947.

**Banking and Finance.**—The number of state and national banks as of June 30, 1947, was 80, of which 41 were state banks with total deposits of $201,908,674.70. There were 9 state co-operative building savings and loan associations with total assets of $3,083,228.45.

Total receipts of the state as of June 30, 1947, were $27,468,914.31; disbursements $28,640,833.46; unappropriated surplus $262,923.26; state debt $1,484,000.

**Agriculture.**—The total acreage of harvested crops in the state in 1947 according to the U.S. bureau of agricultural economics was 1,140,000 compared with 1,163,000 in 1946.

Table I.—*Leading Agricultural Products of Vermont, 1947 and 1946*

| Crop | 1947 (est.) | 1946 |
|---|---|---|
| All corn, bu. | 1,920,000 | 2,300,000 |
| Hay, all, tons | 1,590,000 | 1,499,000 |
| Potatoes, late, bu. | 1,080,000 | 1,392,000 |
| Oats, bu. | 810,000 | 1,530,000 |
| Apples, bu. | 777,000 | 424,000 |
| Maple syrup, gal. | 799,000 | 607,000 |

**Manufacturing.**—The total value of production (including manufacturing, processing, mining and quarrying, but not public utilities), as reported to the state department of industrial relations, was estimated at $304,000,000; there were about 38,500 persons employed in these industries, earning approximately $70,450,000 per year.

Table II.—*Principal Manufacturing Industries of Vermont, 1947 and 1946*

| Industry | Value of products | |
|---|---|---|
| | 1947 (est. year ending Dec. 31) | 1946 (year ending June 30) |
| Machines and machine tools | $62,000,000 | $71,520,380 |
| Dairy products | 56,000,000 | 53,167,512 |
| Woollen and cotton goods | 38,200,000 | 40,610,595 |
| Woodworking | 31,110,000* | 17,462,350 |
| Paper and paper products | 20,000,000 | 19,107,551 |

*1947 estimate for woodworking includes lumbering and furniture.

**Mineral Production.**—Total output value of mineral products of the state as reported to the state geologist for the year ending June 30, 1946, was $21,134,274 (est.).

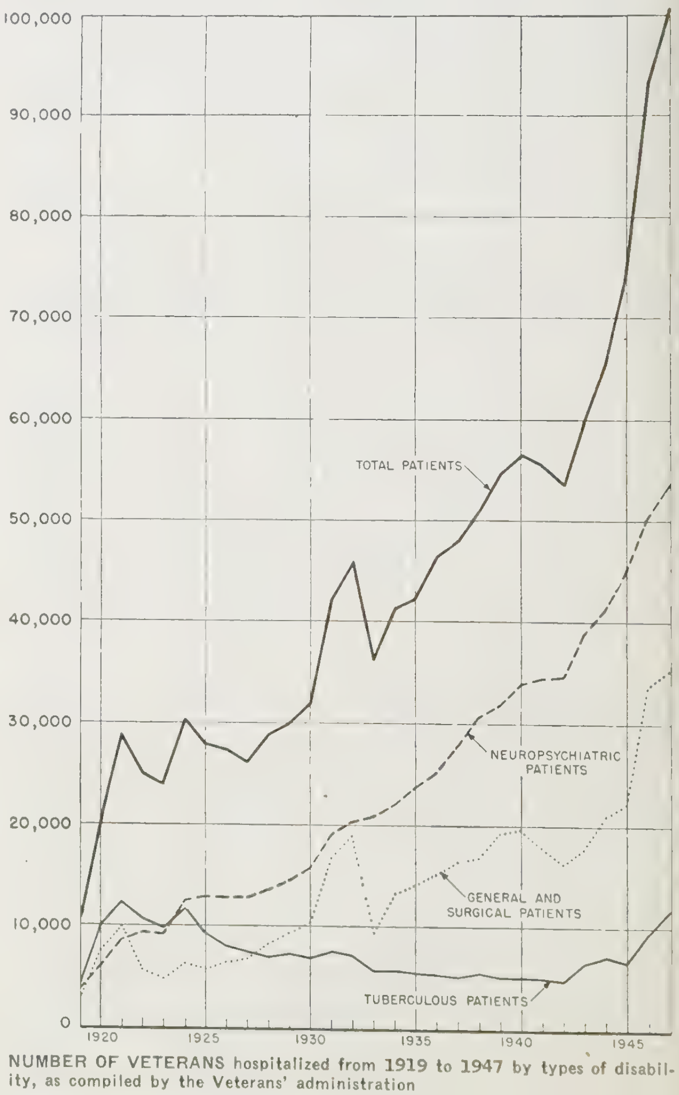
(C. E. Fe.)

Table III.—*Principal Mineral Products of Vermont, 1946 and 1945*

| Mineral | Value, 1946 (est.) | Value, 1945 |
|---|---|---|
| Granite | $12,682,000 | $10,731,000 |
| Marble | 3,308,000 | 1,537,000 |
| Lime products | 1,263,140 | 1,276,865 |
| Talc | 763,834 | 841,012 |

## Veterans' Administration.

To bring its services closer to the home-town level, the U.S. Veterans' administration decentralized many of its major functions in 1945. In addition to a central office in Washington, D.C., the agency had established 13 branch offices throughout the country for the purpose of supervising the field operations



NUMBER OF VETERANS hospitalized from 1919 to 1947 by types of disability, as compiled by the Veterans' administration of nearly 1,000 offices, hospitals and homes in the continental U.S. and in Alaska, Puerto Rico, the Hawaiian Islands and the Philippine Islands.

On Nov. 1, 1947, the near 1,000 total included 736 field offices (formerly known as contact and subregional offices), 70 regional offices (9 of which were located at VA centres), 126 hospitals (21 of which were at VA centres) and 12 homes. The central office continued to exercise general control over all these operations.

**Education and Training.**—*Vocational Rehabilitation.*—Veterans with service-connected disabilities, enrolled under the Vocational Rehabilitation act in schools or on-the-job training establishments, had to undergo preliminary extensive advisement and guidance tests and interviews by trained VA personnel. The guidance was to continue as long as they were in training.

While training—and for two months after establishment of employability—a disabled veteran could receive a subsistence allowance of $65 a month if he had no dependents or $90 if he had dependents. Disability compensation payments were in no way reduced because of subsistence.

Compensation-plus-subsistence minimums were raised during 1947. For veterans with disabilities rated at less than 30%, compensation and subsistence had to total at least $105 without dependents or $115 with 1 dependent. If the totals were less, they would receive an additional sum from VA to make up the difference. The minimums for veterans with disabilities rated at 30% or more were $115 without dependents and $135 with 1 dependent. Additional amounts were paid to veterans with more than one dependent.

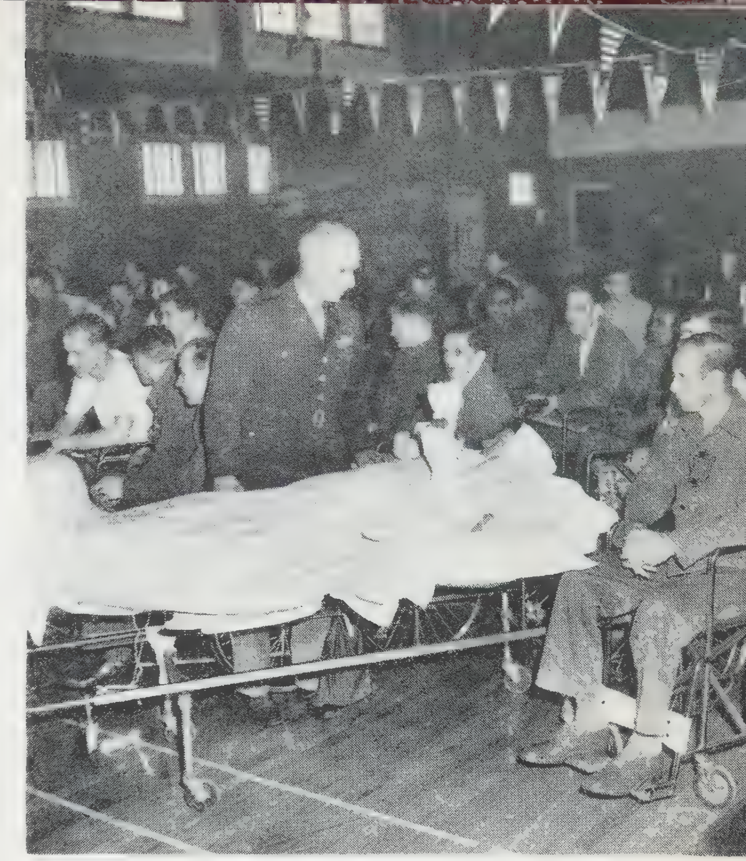
By Nov. 1, a total of 244,780 disabled veterans were in training under the rehabilitation act. Of these, 136,884 were enrolled in educational institutions and 107,649 were taking on-the-job training. At the same time, 20,649 trainees had been declared rehabilitated. This figure accounted for only 17% of the 123,613 disabled veterans who had interrupted their training for one reason or another.

*G.I. Bill Training.*—Veterans training under the G.I. Bill of Rights continued to receive $65 a month subsistence allowance if they had no dependents, or $90 if they had dependents. If the veteran took on-the-job training, he retained whatever wages were paid him. However, if salary plus subsistence surpassed the wages of a beginning trained journeyman, VA cut his subsistence accordingly. Also, subsistence was reduced if his combined monthly income—subsistence plus wages—totalled more than $175 if he had no dependents, or $200 if he had dependents.

By Nov. 1, there were 2,413,576 veterans in schools and job-training establishments under the G.I. bill. The majority, or 1,859,545, were enrolled in educational institutions, while the remaining 554,031 were taking on-the-job training.

At that date, about 1,890,000 former G.I. bill students and trainees had dropped their courses. All but a mere 8,400 (who had used up all their available entitlement) were eligible for further training. G.I. bill discontinuances amounted to 44% of the 4,302,000 veterans who had entered training after the G.I. bill program went into effect.

Most education and training under both laws were scheduled to end July 25, 1956. G.I. bill education and training, for the majority of veterans, had to begin before July 26, 1951. An exception was made for persons who enlisted between Oct. 6, 1945, and Oct. 5, 1946, under the Voluntary Recruitment act. The period during which they could earn entitlement to all G.I. bill benefits—education, training, loan guarantee privileges and readjustment allowances—was not to expire until the end of their enlistment.



COL. JOHN N. ANDREWS of the Veterans' administration speaking with one of a group of veterans paralyzed in World War II who convened at Vaughan hospital in Hines, Ill., during Feb. 1947, to form a Paralyzed Veterans' association

**Veterans' Loans.**—Public law 346, as amended, established provisions for the guarantee of loans or the insurance of credit, through private lending institutions, for veterans desiring to buy or build homes, purchase farms or farm equipment or go into business. The amount of the guarantee could not exceed 50% of the loan, or a maximum of $4,000 on real estate and $2,000 on non-real estate loans. Farm realty loans were to be paid off within 40 years; other real estate loans within 25 years, and non-real estate loans within 10 years. By Nov. 1, 1947, a total of more than 1,000,000 G.I. loans of all types, amounting to more than $6,000,000,000, had been approved for guarantee or insurance by VA. Nearly 90% of the loans, or about 972,000, were for homes; nearly 37,000 were farm loans and about 81,000 were business loans.

A VA analysis of G.I. home loans over a 4-month period (May through Aug. 1947) revealed that more than 45% of the veterans utilizing their loan guarantee privileges bought newly built houses at an average selling price of $8,200. The remaining veterans purchased homes previously occupied for sales prices averaging $6,675.

The deadline for applying for guaranteed loans was set at July 25, 1957, for all veterans except enlistees under the Voluntary Recruitment act.

**Readjustment Allowances.**—Readjustment allowances, provided for by public law 346 as amended, were designed to assist eligible veterans during periods of unemployment, or when self-employed and earning less than $100 a month. A totally unemployed veteran could receive $20 a week; a partially employed veteran up to $20 a week, less earnings above $3. A self-employed veteran could receive $100 a month, minus any net earnings during the month. Maximum unemployment allowance entitlement was for 52 weeks; for self-employment, 10⅔ months.

During the week ending Nov. 1, 1947, 395,939 veterans claimed readjustment allowances for unemployment. During the same week, state unemployment compensation offices paid out more than $7,600,000. In Oct. 1947, 102,757 veterans claimed self-employment allowances. Unemployment compensation offices during the month disbursed nearly $10,000,000 in self-employment claims.

Allowances could be claimed through July 24, 1949, or two years after the date of discharge—whichever was later—but not later than July 25, 1952, except for enlistees under the Voluntary Recruitment act.

**Medicine and Surgery.**—On Nov. 1, 1947, 126 VA hospitals were in operation, including a number of temporary structures declared surplus by the armed forces. More than 101,200 beds were available for use in the hospitals, in addition to nearly 14,000 beds in other federal government, state and civil hospitals. In VA hospitals there were 11,500 beds for tuberculosis cases, 55,100 for neuropsychiatrics and 34,600 for general medical and surgical patients.

Considerably more than half of all patients in VA hospitals were neuropsychiatric cases, for whom 34 hospitals were in operation. Eighty-six mental-hygiene clinics were available to treat veterans not requiring hospitalization. VA also operated 18 tuberculosis hospitals, in addition to tuberculosis departments in its general hospitals, and tuberculosis-neuropsychiatric units in its neuropsychiatric hospitals.

Seventy-four general medicine and surgery hospitals were in operation by VA. General medicine also was practised in tuberculosis and neuropsychiatric hospitals. Surgical facilities—consisting of operating suites and the necessary trained personnel—were available in all the hospitals.

Intensive courses in medical rehabilitation were offered in all the hospitals to patients to help them after release. Amputees and paraplegics learned how to get up and down steps, on and off buses, cross streets, go shopping and the like. If they wished, patients could further their education or explore posthospital job possibilities by taking complete academic courses and vocational rehabilitation programs.

VA during 1947 embarked upon the greatest hospital construction program in the nation's history, providing for 91 new hospitals, located near medical centres whenever possible.

**VA Homes.**—A patient, to be admitted to any of VA's 12 homes, must have a condition essentially chronic in character, not susceptible of cure or decided improvement by hospital treatment, and must be incapacitated from earning a living for a protracted period. More than 14,600 veterans were in VA homes on Nov. 1, 1947.

**Insurance.**—National Service Life Insurance for World War II veterans originally was issued on a five-year level premium plan, providing the maximum temporary protection at the lowest cost. The term period of all insurance issued before Jan. 1, 1946, was extended three more years by Public Law 118, 79th congress. These policies, therefore, could be continued in their term form for eight years from the date of issue.

By the end of 1947, VA had written more than 19,200,000 N.S.L.I. policies, with a total face value of more than $150,000,000,000. On Nov. 1, 1947, less than one-third—or an estimated 6,000,000 policies—still were in force. Nearly 4,800,000 of these were term policies; the remainder were policies converted to the half-dozen VA permanent plans available: ordinary life, 30-payment life, 20-payment life, 20-year endowment, endowment at age 60 and endowment at age 65.

As a direct result of war casualties and other deaths, the beneficiaries of 398,175 World War II veterans were receiving insurance payments on Nov. 1, 1947.

More than 524,000 U.S. government life insurance policies for World War I veterans, representing nearly $2,300,000,000 of insurance, were in force on Nov. 1, 1947.

**Pensions and Compensation.**—In 1947 VA was paying monthly pensions and compensation to more than 3,200,000 disabled veterans and dependents of deceased veterans. Payments ranged from $13.80 to $360 a month for service-connected disabilities. On Nov. 1, 1947, the following cases were on VA's compensation and pension rolls:

| War | Living veterans | Dependents of deceased veterans |
|---|---|---|
| Mexican War | 0 | 45 |
| Indian wars | 797 | 2,278 |
| Civil War | 83 | 17,895 |
| Spanish-American War | 112,355 | 80,679 |
| World War I | 438,121 | 389,232 |
| Regular establishment | 42,692 | 19,291 |
| World War II | 1,712,696 | 416,370 |

**Guardianship.**—VA's guardianship load rose from 134,583 wards on Nov. 1, 1946, to 177,761 wards 1 year later. Of the latter figure, 93,591 were entitled to benefits because of service by veterans of World War I and earlier wars, and 84,170 were entitled to benefits because of service by World War II veterans. (*See* also MEDICAL REHABILITATION OF DISABLED VETERANS.)

(C. R. GY.)

## Veterans of Foreign Wars.

The Veterans of Foreign Wars devoted its major effort in 1947 to a campaign to alleviate the housing shortage, which it termed the most critical problem facing veterans.

Declaring that the government housing program had proved to be an almost complete failure, the V.F.W. attacked the problem of providing homes for veterans on both the national and the community levels. The organization called frequent conferences between leaders in government and the building industry. It stressed the need for more prefabricated housing and persuaded federal authorities to accept the principle of government financing for the production of factory-built homes. On the community level, many of the 10,000 posts of the V.F.W. took the lead in organizing veteran housing projects and veteran housing co-operative associations. At its 48th national encampment in Cleveland, O., Sept. 4–9, the V.F.W. strongly endorsed the Taft-Ellender-Wagner housing bill, with certain amendments to protect private enterprise, and gave it highest priority in the organization's legislative program.

Along with its housing campaign, the V.F.W. conducted an intensified drive to promote national security through enlargement and modernization of the nation's military forces and the curbing of communist influence within the United States. As major points in its security program the V.F.W. asked enactment of a universal military training law, creation of the world's most powerful air force in being, return of atomic energy control to military authorities and government subsidization of a program of scientific research to develop new weapons. In a resolution approved by its national encampment, the V.F.W. demanded action to outlaw the Communist party in the United States and enjoin publication of the *Daily Worker*.

Pensions for all World War I veterans past the age of 65 were given first priority by the V.F.W. over all other veteran benefits which the organization was seeking. World War II veterans, who constitute a large majority in the V.F.W., voted through their delegates at the encampment to support their World War I comrades in the pension drive. Meanwhile, the V.F.W. reiterated support of the principle of adjusted service compensation for veterans of World War II.

The influence of younger veterans became more apparent in the organization during the year, with an increasing number of important offices and committee assignments going to the World War II men. World War II veterans were elected to the national offices of junior vice commander in chief and judge advocate general. Approximately one-half of the state departments chose veterans of the last conflict as department commanders.

Ray H. Brannaman of Denver, Colo., was commander in chief of the Veterans of Foreign Wars for the 1947–48 term. A former chairman of the Colorado Industrial commission and former executive director of the Colorado Good Roads association, Brannaman was moved up to the top job in the V.F.W. from the office of senior vice commander in chief. Other elective officers were Lyall T. Beggs, Madison, Wis., senior vice commander in chief; Clyde A. Lewis, Plattsburg, N.Y., junior vice commander in chief; R. B. Handy, Jr., Washington, D.C., quartermaster general; Hudson Hyatt, Cleveland, O., judge advocate general; Dr. William R. Morrison, Boston, Mass., surgeon general, and Canon Merritt F. Williams, Washington, D.C., national chaplain. (B. Y.)

## Veterans' Organizations.

In 1947 7,000,000 U.S. veterans were members of veterans' organizations. Five million were in the American Legion and the Veterans of Foreign Wars, and 1,000,000 more were in the other major national organizations—the Disabled American Veterans, Army and Navy union, American Veterans committee, American Veterans of World War II (Amvets), Air Forces association, Jewish War Veterans, Catholic War Veterans and Regular Veterans association.

The estimated number of U.S. veterans' organizations dropped from about 1,000 to 600 during 1947. Most of the decrease was because of local organizations being absorbed by the larger national groups, or dropped because of lack of interest by the participants. Of the old line organizations, only the American Legion continued to gain. The Veterans of Foreign Wars suffered a deficit for the first time in 20 years after overestimating their 1947 membership by considerably more than 1,000,000.

The World War II groups found progress difficult. Nationally, the field became limited to two organizations—The American Veterans committee, and the Amvets, representing a more conservative element. The quickest-growing of the new organizations was the Air Forces association, which had acquired a semiofficial status. Its membership rose to more than 100,000 in 1 year.

Attempts by the communists to infiltrate the American Legion failed during 1947. They then turned to the American Veterans committee and made a drive for control but were thoroughly defeated at the A.V.C.'s 1947 convention in Milwaukee, Wis.

The principal policy trends in U.S. veterans' organizations during 1947 were as follows:

(1) A refusal to use, to any great extent, powerful political pressure for anything except veterans' benefits. Organizational support was given to such measures as the cashing of terminal leave bonds, benefits for disabled veterans and bonus measures in the separate states.

(2) A series of abortive attempts to form political blocs.

(3) A determined campaign against communism. The American Legion sponsored a seminar on how to combat communism; the Jewish War Veterans barred communists from membership and the American Veterans committee passed a resolution attacking both communism and fascism. (*See* also American Legion; American Veterans Committee; American Veterans of World War II (Amvets); Disabled American Veterans; Veterans of Foreign Wars.) (Rt. A. B.)

**Canada.**—The oldest veterans' organization in Canada, Army, Navy and Air Force Veterans, Inc., originally established after the War of 1812, had 271 units throughout the dominion in 1947, with a membership of 187,000. The Canadian Legion, formed in 1926 by amalgamation of a number of Canadian veterans' organizations, had 1,685 branches in Canada and 135 in the U.S., to which 300,000 members belonged. During 1947 the Legion successfully pressed for an increase in the government's rates of war pensions and veterans' allowances and conducted a citizenship training program. The Canadian Corps association was incorporated in 1947 and reported 30,000 members. During the year the corps promoted veterans' preference in civil service employment and pressed for military preparedness.

The National Council of Veterans Associations in Canada—made up of the Army, Navy and Air Force Veterans, the War Amputations of Canada, the Sir Arthur Pearson Association of War Blinded, the Canadian Pensioners association, the Canadian Paraplegic association and the Canadian Corps association—successfully placed legislative proposals before the government for the correction of defects and deficiencies in veterans' administration.

The International War Veterans' alliance, an organization of veterans in western Canada and the north-central United States, moved to unite all veterans' organizations in the British commonwealth and the United States into a body to perpetuate peace. (C. Cy.)

**Other Countries.**—In every nation which took part in World War II there was at least one ex-servicemen's, or veterans', organization in 1947. In Great Britain the British Legion (*q.v.*), formed after World War I, had adapted itself to serve as the organization for ex-servicemen of both world wars.

In France the picture was more confused because many leaders of pre-World War II associations were compromised by collaboration with the Pétain-sponsored *Légion Française des Anciens Combattants.* After liberation, however, the majority of the old associations were reformed, under new leadership, and they all joined the U.F.A.C. (*Union Française des Anciens Combattants*) whose honorary president was René Cassin, chairman Léon Viala and secretary general Maurice de Barral—all three active in the ex-servicemen movement before World War II. According to a report published July 2, 1947, in the *Journal Officiel,* 1,211,297 disabled ex-servicemen of both world wars were receiving a pension; there were also 785,000 pensioned war widows and 610,525 pensioners' parents.

The communist-sponsored F.T.P.F. (*Franc-Tireurs et Partisans Français*) formed a separate group. The same happened in Italy where an A.N.P.I. (*Associazione Nazionale Partigiani d'Italia*) was formed in 1947. In Yugoslavia the Union of Ex-Freedom Fighters was created. The same development could be observed in Poland, Rumania, Bulgaria and Czechoslovakia. On Dec. 8, 1947, in Rome, at the executive meeting of the A.N.P.I., Gen. Sidor Kovpak, the soviet guerrilla leader, called on European partisans to unite to fight against "fascism."

In July 1947 Sir Ian Fraser, president of the British Legion, visited the United States as a fraternal delegate to the American Legion convention in New York. In September Paul H. Griffith, national commander of the American Legion, heading a delegation of legionnaires, visited Great Britain, France, Belgium and Luxembourg. During these visits the idea of forming an interallied federation of ex-servicemen was discussed. Between the two world wars the *Fédération Interalliée des Anciens Combattants* (F.I.D.A.C.), with the American and British Legions as principal members, had its headquarters in Paris.

## Veterinary Medicine.

**Control of Rabies.**—A conference was held in 1947 to formulate plans for handling the United States rabies problem under central direction in lieu of municipal, county and state agencies. Represented were the American Public Health association, American Medical association, U.S. public health service, U.S. bureau of animal industry, U.S. Livestock Sanitary association, American Hospital association, and American Veterinary Medical association. The conference adopted the committee's codified program and recommended that control of the disease on a national basis be vested jointly in (1) the U.S. bureau of animal industry, (2) the U.S. fish and wildlife service, and (3) the U.S. public health service.

The outbreak of foot-and-mouth disease in Mexico during 1946–47 (*see* below) raised a controversy as to whether wild animals susceptible to the infection should be killed also as a control measure. The killing of more than 22,000 deer in California as the final step to eradicate the epizootic of 1924 had been criticized as over-fastidious. Veterinary officials reported that only 10% of the deer in Yosemite National park had been affected in 1924.

**Fowl Cholera.**—Fowl cholera (*Pasteurelle aviseptica* infection) among migratory waterfowl in Texas, reported by the U.S. fish and wildlife service as obviously contracted from barnyard poultry, added another infectious disease to those interchangeable between wildlife and farm animals. Distemper in foxes and other wild carnivores and in domestic dogs was shown to be caused by the same specific virus. Mange in foxes and other wild animals in New England was found to infect livestock.

**Bovine and Porcine Brucellosis.**—Brucellosis of cattle and swine remained first in importance among diseases of domestic animals. In respect to financial losses suffered from animal disease, the bovine type, commonly named Bang's disease, continued to rank high, if not first, in the United States. Porcine brucellosis was found to be the principal source of the human infection (undulant fever). The 38,508 human cases with 1,340 deaths reported in the United States from 1927–42 were acknowledged to be but a fraction of the total incidence.

**Equine Encephalomyelitis.**—A report released by the U.S. bureau of animal industry May 7, 1947, indicated that the incidence of infectious equine encephalomyelitis in the United States was the lowest in 12 years. The total number of cases in 37 states was 2,805. There were fewer cases in the south Atlantic and Pacific coast states and more in the north and south central states. The virus-serum division of the U.S. bureau of animal industry estimated that 400,000 horses were vaccinated against the infection and attributed the lower incidence to that protection. No human cases suspected of being of equine origin were reported.

**Foot-and-Mouth Disease in Mexico.**—The appearance of foot-and-mouth disease in five Mexican states surrounding the federal district during the late fall of 1946 caused alarm among the cattle-raising and meat-packing interests of North America. The outbreak was charged to the importation of zebu bulls from Brazil. It had spread to the cattle herds of a vast area before its nature and potential were generally recognized. Except for enzootics, at long intervals, which were quickly stamped out, North America previously had been free from foot-and-mouth disease and as a consequence was able to develop the world's most profitable livestock industry. Alarm over the Mexican visitation prompted the two governments to form a Mexican-United States organization of veterinarians charged with the duty of planning and enforcing vigorous measures against spread of the infection beyond the original territory involved and to wage a co-operative campaign of complete eradication.

The quarantine against exportation of cattle "on the hoof" to the United States was a hardship to the Mexican cattle interests and necessitated the installation of large canning plants on Mexican territory as an emergency relief. The quarantine was reportedly a factor in the high price of beef in the United States. Dr. T. B. Simms, chief of the U.S. bureau of animal industry, reported that a relentless campaign of at least two years' duration would be required to achieve complete eradication.

**Enzootics of Infectious Anaemia.**—Infectious anaemia of horses is caused by a filtrable virus with the unique property of sojourning in the infected animal's blood, in highly virulent form, for the entire duration of its life, all the time capable of being transmitted to healthy horses by stinging insects. The disease remained incurable. The course of the illness may be acute, subacute, chronic or latent. The acute case may be fatal after a brief febrile illness, the subacute and chronic case may die in a matter of months and the prolonged or latent one may last for years with various degrees of impaired health interrupted at irregular intervals by spells (exacerbations) of weakness and fever. Usually, mosquitoes, stable flies or other insects are the transmitting agents.

In April 1947, enzootics of this grave equine infection broke out at several New England race tracks. Ordinarily, the disease is handled by killing the proved cases and by sanitary disposal of the carcasses. The significance of this outbreak lay in the 900 horses involved, the 47 deaths, the undetermined number of infected and the controversy raised by the livestock insurance companies as to their obligations in the lingering cases killed as a sanitary measure.

**Problems of Mink Ranches.**—The diseases of mink had been the most neglected in the investigational work and the literature of the growing industry of fur ranches. Based on 4,425 autopsies held on mink from 685 widely separated sources, deaths were found to have been caused by 89 causes. Predominating were pneumonia, food poisonings, hepatic degeneration, distemper-virus infection, malnutrition, renal and cystic calculi, gastroenteritis and unidentified generalized infections. Recognizable salmonellosis was found in 87 cases, splanchnic carcinoma in 9, and anthrax in 3. Owing to their wildness, mink show symptoms of illness only when grievously stricken.

**Army Animals of the Japanese.**—During the Asiatic operations of World War II, the Japanese used a large number of animals and left serious veterinary problems behind. The surplus animals abandoned in Burma, Indo-China and Malaya were distributed among the natives but were not permitted in India on account of the high incidence of epizootic lymphangitis. The riding horses, pack ponies and mules captured from the Japanese were sold to the Siamese army. Animal welfare of the Japanese was the worst of all the countries at war. The 33rd Japanese division lost 5,000 animals from starvation according to the report of the senior Japanese veterinary officer. Horses were kept ungroomed without bedding on undrained standings. The Japanese veterinary service had little besides mercurochrome in their outfits.

**Hepatic Distomiasis.**—The heavy financial losses suffered from liver-fluke infection of farm ruminants were reduced considerably during and after World War II by the use of hexachlorethane, a chemical related to the popular flukicides, carbon tetrachloride and tetrachlorethylene, but much less toxic for livestock. In extensive trials made by the zoological division of the U.S. bureau of animal industry the new chemical removed 70% of the adult flukes and 50% of the immature ones. The flukicides formerly employed were ineffective against the immature flukes and, therefore, left the livers of all the treated animals in a state of infection. Because hexachlorethane does not dissolve in the usual nontoxic solvents, it was used in the form of a suspension consisting of bentonite, flour and water mixed with a speedy, power-driven apparatus to ensure even distribution and passing the mixture twice through a 20-mesh screen.

Liver-fluke infection was found to be prevalent in the gulf, southwestern, Rocky mountain and Pacific coast states in regions where pasture lands were invested with fresh water snails which are essential intermediate hosts of the parasite (*Fasciola hepatica*). Besides impairing the health and thrift of cattle, sheep and goats, hepatic distomiasis was estimated to have caused a loss of $1,000,000 worth of livers in 1945. The annual loss of beef and calf livers in the Gulf coast area alone was reported to be 90,000 lb.

**Newcastle Disease.**—The greatest threat ever to overtake the poultry industry of the western hemisphere was the exotic neurotropic virus infection which made its appearance in California in 1944 and which by 1947 had been recognized in nearly all the 48 states. The disease was known by various names: pseudo-foul pest in the East Indies, Ranikhet disease in India, avian distemper in the Philippines, Newcastle disease in Great Britain and avian pneumoencephalitis or the British eponym in the United States.

The infection strikes the respiratory and central nervous system simultaneously or consecutively. Whereas mortality in European and Asiatic theatres reportedly ranged up to 100%, the U.S. outbreak was comparatively mild, owing, it was said, to the disease being predominantly respiratory rather than pneumocephalic. The federal bureau of animal industry co-operated with the various poultry associations in conducting a nationwide educational program instructing poultrymen and veterinarians on methods of diagnosis and control. In the presence of the low mortality, the small poultrymen did not always identify the scattered enzootics.

Formalin-treated virus obtained from infected organs and crystal-violet vaccine prepared from infected chick-embryos were proved to possess immunogenicity of considerable importance but varied greatly in duration. Formalin-treated chick-embryo virus made under specified directions gave the most promising results. Hope of early eradication was not entertained despite the vigorous actions taken by state livestock sanitary services.

**Man-to-Animal Transmissions of Tuberculosis.**—J. Arthur Myers, phthisiologist of the school of medicine, University of Minnesota, pointed out the need of giving attention to the transmission of tuberculosis from man to animals, especially by persons suffering from the contagious pulmonary form. W. H. Feldman of the Mayo foundation, a well known investigator of interspecies transmissibility of the different types of *Mycobacterium tuberculosis,* showed that while cattle experimentally inoculated with the human type did not develop macroscopic lesions, they did show evidence of having the disease by reacting to the tuberculin test. Although no case of transmission of the human type from one animal to another was ever reported, there was a record of four herds of healthy dairy cows infected by a man suffering from pulmonary tuberculosis which proved to have been caused by the bovine type of the tubercle bacillus.

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(L. A. M.)

## Virginia.

One of the 13 original United States, Virginia is known as the "Old Dominion" and as the "Mother of Presidents." It is southernmost among the middle Atlantic states and has an area of 40,815 sq.mi., including 916 sq.mi. of water. Pop. (1940) 2,677,773, of which 35.3% were urban and 64.7% rural. On July 1, 1944, the bureau of the census estimated the state's civilian population at 3,199,115. Capital, Richmond (193,042 in 1940 and 225,000 in July 1944). Other major cities include Norfolk (144,332 and 167,900), Roanoke (69,287 and 66,641) and Portsmouth (50,745 and 59,472).

**History.**—The general assembly convened in special session in Jan. 1947. At the request of Gov. William M. Tuck, the legislators approved two major laws in the field of labour relations, one designed to assure a "right to work" to any citizen regardless of affiliation with a labour union and the other designed to prevent sudden interruptions in operation of public utilities because of labour disputes. The latter law was invoked by the governor in May, when the commonwealth seized and operated some telephone facilities for a brief period until a strike was settled. The assembly also voted an additional $9,000,000 in state funds for public instruction and established a new system of licensing for general hospitals and nursing homes. During the summer, interim study commissions were active in investigating insurance laws, statutes governing inspection of tourist establishments, public school problems, taxation and reorganization of the state government. At a general election in November, 10 Republicans and 130 Democrats were elected to the general assembly. L. Preston Collins was lieutenant governor in 1947; G. Tyler Miller was superintendent of public instruction.

**Education.**—In 1946–47, elementary school enrolment was 427,404, with a teaching staff of 12,548; secondary school enrolment was 137,670, with a teaching staff of 6,226.

**Social Insurance and Assistance, Public Welfare and Related Programs.**—For the year ended June 30, 1947, 12,002 persons received $1,011,446 in general relief; 18,482 received $3,033,169 in old-age assistance; 5,811 families with 17,120 dependent children, $1,781,466; 1,265 blind, $269,679; 2,240 under the regular foster care program, $386,544. In 1947, 288,046 checks for civilian unemployment compensation were written, amounting to $4,173,943, and 449,879 war veterans' readjustment allowance checks were written for $14,169,224. The civilian checks were 20% fewer than the preceding year, and the veterans' payments were down more than 30%. An average daily population of 4,364 was in 6 penal institutions for adults, and of 649, in 4 industrial schools for juveniles at the end of the fiscal year in June 1947.

**Communications.**—On Jan. 1, 1947, there were 9,320 mi. of highway in the state's primary system; on July 1, 1947, there were 38,136 mi. in the secondary system. During the year ended June 30, 1947, the state spent $54,534,742 on its highways, nearly double the previous year's expenditure. The total railroad mileage was 4,091.07 on Jan. 1, 1947. There were 440,090 telephones in Virginia on Nov. 30, 1947.

**Banking and Finance.**—On June 30, 1947, Virginia had 184 state banks with 54 branches, and 130 national banks and branches. On June 30, 1947, deposits of national banks were $996,797,000, and assets, $1,076,401,000. On June 30, 1947, deposits in state banks totalled $696,457,934, and assets, $755,473,267. Resources on Dec. 31, 1946, of 15 industrial loan associations were $9,389,447; of 56 building and loan associations, $42,963,130; of 26 credit unions, $1,262,642. For the fiscal year ended June

**Table I.**—*Leading Agricultural Products of Virginia, 1947 and 1946*

| Crop | 1947 | 1946 | 1947 Value |
|---|---|---|---|
| Corn, bu | 42,490,000 | 40,284,000 | $98,762,000 |
| Wheat, bu. | 8,522,000 | 8,344,000 | 21,305,000 |
| Oats, bu. | 3,456,000 | 4,260,000 | 3,802,000 |
| Rye, bu. | 392,000 | 392,000 | 843,000 |
| Barley, bu. | 2,478,000 | 2,272,000 | 3,593,000 |
| Buckwheat, bu. | 96,000 | 105,000 | 182,000 |
| Tobacco, all types, lb. | 161,112,000 | 178,821,000 | 62,873,000 |
| Peanuts for nuts, lb. | 199,260,000 | 191,250,000 | 22,118,000 |
| Hay, all tame, tons | 1,438,000 | 1,744,000 | 33,793,000 |
| Apples, commercial, bu. | 5,010,000 | 12,975,000 | 9,770,000 |
| Peaches, bu. | 1,800,000 | 2,640,000 | 3,420,000 |
| Cotton, lint, bales | 18,000 | 17,000 | 2,817,000 |
| Potatoes, bu. | 9,450,000 | 10,676,000 | 15,592,000 |
| Sweet potatoes, bu. | 3,500,000 | 3,250,000 | 6,125,000 |
| Soybeans for beans, bu. | 1,425,000 | 1,106,000 | 4,275,000 |

Table II.—*Principal Industries of Virginia, 1945 and 1944*

| Industry | Value of products<br>1945 | Value of products<br>1944 |
|---|---|---|
| Tobacco products | $790,582,323 | $760,800,542 |
| Food and kindred products | 308,793,770 | 298,882,246 |
| Textiles and their products | 400,185,144 | 377,549,000 |
| Wood products | 95,684,644 | 105,860,200 |
| Paper and printing | 134,072,940 | 142,556,943 |
| Chemical products | 121,750,914 | 111,694,596 |
| Transportation equipment | 200,419,947 | 244,324,461 |
| Metals and machinery | 78,910,459 | 70,437,607 |

30, 1947, the state treasury received revenues of $252,300,660, about 25% more than in the previous year; expenditures were $248,750,205. The gross debt on June 30 was $14,287,952; there was no net debt, since a sinking fund of $16,153,824 left an excess of $1,865,872. The fiscal year ended with a general fund surplus of $22,940,351.

**Agriculture.**—The 1947 growing season was an irregular one. Late frosts in May cut the apple crop 61% below 1946, and unusually dry weather caused a poor crop of early corn. Improving conditions in the late summer brought total corn production to nearly 43,000,000 bu., highest in 27 years; the crop was produced on the second to lowest corn acreage in 80 years. The tobacco crop dropped to second place in value with a production down 10% from 1946. The value of principal crops was placed at $301,248,000, up 1% from 1946. Farmers harvested an estimated 3,681,000 ac., 4% below the average for 1936–45. The shortage of farm labour continued acute over most of the state. Prices for farm land tended to level off late in the year, but remained 117% above prices in 1939. Cash receipts to Virginia farmers in 1947 from farm marketings were estimated at 15% above 1946, when cash income (including government payments of $10,356,000) amounted to $370,956,000.

**Manufacturing.**—The total value of manufactured products for the year ended Dec. 31, 1945, was $2,197,718,834. Wage earners received $307,672,769 in this period, and total salaries amounted to $70,338,849. Figures on estimated production for 1946 had not been compiled by the state at the close of 1947, but it was estimated that probably 211,600 persons were engaged in manufacturing at the close of 1947 with substantially higher income than was received by the 210,000 wage earners and salaried workers of 1945. Principal industries in 1947 were tobacco products, food and kindred products, transportation equipment, textiles, paper and printing and chemical products.

**Mineral Production.**—The production value of raw mineral resources in the year ending Dec. 31, 1945, was placed at $84,081,000, 5% less than during the preceding year but far more than the $50,003,672 of 1940. Coal production in 1945 was valued at $61,140,000, 5% less than the 1944 output. Production in 1947 was believed to have been far more than this figure. Approximately 4,000 bbl. of petroleum and 54,000 cu.ft. of natural gas were produced in 1945. Nonmetallic minerals in that year had a production value of $17,210,000. The value of metallic ores exclusive of coal, chiefly zinc, titanium and manganese, was about $5,731,000.

(J. J. Kt.)

**Virginia, University of.** A state institution for higher education at Charlottesville, Va. Colgate Whitehead Darden, Jr., became the third president of the university on June 23, 1947. He succeeded John Lloyd Newcomb, who had held the office for 16 years. The new president, an alumnus of the university, of Columbia university and of Oxford university, had served Virginia in its general assembly, the U.S. house of representatives and as governor. Plans were announced during the year for the launching of a development fund campaign to be headed by Adm. William F. Halsey. The Virginia Geographical institute, under the direction of Col. Sidman P. Poole, began its work on terrain studies and by the end of the year had brought together a staff of eminent geographers. The Virginia Music festival, planned as an annual spring event, was held at the university during three days in June. The Friends of the University, composed of students, faculty and citizens at large and devoted to the cultivation of fine arts, came into being, and the Bibliographical Society of the University of Virginia was organized. (For statistics of endowment, enrolment, faculty, library volumes, etc., *see* UNIVERSITIES AND COLLEGES.) (C. W. Dn.)

**Virgin Islands.** The Virgin Islands are an insular possession of the United States located 1,400 mi. southeast of New York and 39 mi. east of Puerto Rico. They form part of the chain of islands between the Caribbean sea and the Atlantic ocean. The three largest islands with an area of 133 sq.mi. are St. Croix (pop. 13,000 est. 1946); St. Thomas (16,200) and St. John (800). The chief cities are Charlotte Amalie, the capital on St. Thomas (9,801); Christiansted (4,495) and Frederiksted (2,498) on St. Croix.

The governor of the Virgin Islands is William Henry Hastie who was appointed by President Truman in 1946.

**Education.**—The public school enrolment in St. Thomas in 1947 was 2,624 of which 785 pupils were enrolled in the junior and senior high schools. In St. Croix the enrolment was 1,570 with about 361 pupils in high schools. The average expenditure per child in St. Thomas was $79.62. In St. Croix the average cost per pupil was $52.59. The average salary of teachers in St. Thomas was $1,400 and in St. Croix $1,035.

**Finance.**—The revenues of the municipality of St. Thomas and St. John during the fiscal year 1947 were $817,898.53 compared with $862,396.95 in the fiscal year 1946. Budget expenditures were $1,121,306.94. Income tax collections were $511,870 as compared with $622,573.27 in 1946.

For the municipality of St. Croix, revenues were $273,026.86 as compared with $262,257.54 in the preceding year. Budgeted expenditures were $428,226.86. Congress appropriated $135,000 toward the expenses of local government in the municipality of St. Croix. Income tax collections there amounted to $86,232.22 as against $103,069.94 in the previous year.

**Trade and Communication.**—In 1947 360 ocean-going vessels with a gross tonnage of 2,631,887 entered the St. Thomas harbour as against 353 with a gross tonnage of 1,493,725 in 1946. The volume of shipping was still considerably lower than in the years before World War II. Imports into the Virgin Islands from the United States during the calendar year 1946 totalled approximately $1,782,577; exports amounted to approximately $750,987.

During 1947 the Pan American Airways and Caribbean Atlantic Airlines served the islands with two daily flights.

St. Thomas and St. Croix are adequately provided with roads. A few miles of roads have been developed in St. John. Radio telephone service among the three islands and to the continental United States through Puerto Rico began in 1946.

**Industry.**—The growing and processing of sugar cane and its allied industries and the business derived through the harbour activities in St. Thomas constitute the economic life of the islands. Exports of rum in 1947 amounted to 244,809 proof gallons from St. Thomas and 146,071 proof gallons from St. Croix as against a total of 955,049 proof gallons in 1946.

St. Croix produces the entire sugar crop of the islands. This basic industry suffered seriously in 1947 because of severe drought. Despite increased acreage and higher prices and subsidies the yield dropped from 47,160 tons in 1946 to 36,304 tons in 1947, with a corresponding reduction in sucrose content from 4,970 tons in 1946 to 2,946 tons in 1947.

Plans were on foot to develop and construct additional facilities for the accommodation of tourists.

The economic problem of the Virgin Islands can be solved only when local foodstuffs and other essential supplies are produced and manufactured to such an extent as to make unnecessary the expenditure of large sums on importations. Great emphasis was laid in 1947 on the need for greater production and consumption of local products. The department of the interior and the department of commerce along with other local agencies were developing plans to help solve this situation.

The federal public works program, delayed considerably because of material shortages and inadequate shipping facilities, was under way in 1947. (W. H. He.)

**Virgin Islands, British:** *see* LEEWARD ISLANDS.

**Viruses:** *see* INFANTILE PARALYSIS; MEDICINE; PNEUMONIA.

**Vishinsky, Andrei Y.** (1883– ), soviet statesman, jurist and diplomat, was born in Kiev of an ancient Polish family. He studied law at the University of Kiev and joined the Menshevist group of the Social Democrats in 1902. He participated in the revolt of 1905 and served a year in prison. When the bolshevists took power, Vishinsky deserted the Menshevists, served in the red army for a year and joined the Communist party in 1920. He was professor of jurisprudence at Moscow university, 1925–27, was named the all-union deputy public prosecutor in 1933 and was public prosecutor from 1935 to 1939. He rose to fame as the public prosecutor in the treason and purge trials, 1936–38, and was appointed vice-chairman of the council of peoples' commissars and deputy commissar for foreign affairs in 1940. He attended virtually all of the important inter-Allied and United Nations conferences from 1945 through 1947. A skilled lawyer, Vishinsky was a formidable opponent in U.N. debate by virtue of his vast knowledge of legal and parliamentary technicalities. In June 1947, he won the Stalin prize (worth about $40,000) for his "work in legal science."

However, he was also given to impassioned oratory as attested in his vitriolic 92-minute attack on U.S. foreign policy before the United Nations general assembly (Sept. 18) in which he accused influential "reactionary circles" in the U.S. of "warmongering" against the Soviet Union; simultaneously he offered a resolution urging the U.N. to forbid its members to engage in war propaganda. The resolution, however, was defeated (Oct. 27), and the assembly's political and security committee instead adopted unanimously a substitute measure condemning all forms of propaganda that might threaten the peace.

**Vital Statistics:** *see* BIRTH STATISTICS; CENSUS DATA, 1947; DEATH STATISTICS; INFANT MORTALITY; MARRIAGE AND DIVORCE; SUICIDE STATISTICS.

## Vitamins.

The synthesis of vitamin A was reported simultaneously and independently from two laboratories in 1947, by D. A. van Dorp and J. F. Arans working in the Netherlands and J. B. Cauley and co-workers in the United States. In neither case were accurate descriptions of the methods given. It was reported that the biologic potencies and the physical and chemical properties of the natural and synthetic vitamins were identical. This synthesis, if verified, was an important discovery in the field of vitamin chemistry.

Significant advances were made in finding the role of biotin, one of the B-complex vitamins, in metabolism. The older observation that biotin is concerned in the oxidation of pyruvate and lactate was narrowed down to a function in carbon-dioxide fixation by which pyruvate is converted to oxalacetate. It was shown by H. A. Lardy and colleagues that the function of biotin was definitely associated with carbon-dioxide fixation. They noted that oxalacetate as well as aspartic acid spared biotin needs for certain bacteria and further that carbon dioxide greatly stimulated growth in the presence, but not in the absence, of biotin. The same metabolic role for biotin was advanced by W. L. Shive and L. L. Rogers, who demonstrated that oxalacetate or aspartic acid compensated for the depression of bacterial growth caused by a biotin anti-metabolite. H. C. Lichstein and W. W. Umbreit demonstrated the need for biotin in the decarboxylation of oxalacetate, and these same workers demonstrated a second role for biotin in metabolism involving the enzyme systems concerned with the deamination of certain amino acids.

Of the known water-soluble vitamins, thiamin, riboflavin, pyridoxine, and niacin were shown to exert their physiologic action in the form of phosphoralated derivatives which combine with specific proteins to effect the catalysis of certain known reactions of intermediary metabolism. Largely as a result of the brilliant work of F. Lipmann and his collaborators, pantothenic acid was added to the list of vitamins which had been shown to function in this manner. Lipmann and his colleagues isolated a coenzyme concerned with acetylation, another process of intermediary metabolism, and this coenzyme was found to contain pantothenic acid. Further information on the chemistry and distribution of the coenzyme for acetylation was announced at the meeting of the American Society of Biological Chemists. In view of the universal presence of the pantothenic acid containing coenzyme in cells it seemed unlikely that its function is limited to acetylation processes.

Observations were made concerning transaminase and succinoxidase in normal and vitamin $B_6$ deficient rats; it had previously been shown that this vitamin is concerned with these two important enzyme activities. In earlier results it was shown that rats maintained on the vitamin $B_6$ deficient diet for six weeks had low levels of transaminase in all tissues examined. To find whether the effect was specific for transaminase activity or whether other enzymes were equally affected in vitamin $B_6$ deficiency, the succinoxidase activity was also determined in deficient and controlled rats. The vitamin $B_6$ deficient rats showed only a slight decrease of succinoxidase activity to about 80% to 90% of the normal level, thus suggesting a definite specificity of the effect on the transaminases.

The important role played by a number of the vitamins of the B-complex group in the enzyme systems which are involved in energy transformations in the living organism made it seem possible that a direct decrease in the work output of the muscle might result from dietary deficiencies. A number of investigators reported an increased fatigability, deterioration of physical fitness and decreased work output within a few days or weeks after certain of the vitamin B-complex factors were missing from the diet, or present in small quantities. Others failed to obtain such results. Part of this apparent disagreement may have resulted from the difficulty of measuring fatigue, work output, or physical fitness. N. W. Shock and W. H. Sebrell attempted to overcome this difficulty by studying the effect of various members of the vitamin B-complex on the work output of standardized frog muscle preparations and found some interesting, if not as yet explainable, results. They compared the work output of isolated muscles of frogs with the work output of the same muscles of the opposite legs perfused with glucose ringer solution containing variable amounts of the various vitamins of the B-complex. Thiamin, co-carboxylase, pantothenic acid, pyridoxine and riboflavin when present in small concentrations in the perfusion fluid were found to lead to work output of the muscles approximately 20% over that of the corresponding controls. All the substances tested gave about the same response. It was puzzling that so many substances of different chemical structure which are usually characterized by the specificity of their physiologic reactions gave the same effect.

In Vitamin $B_1$ or thiamin deficiency, pyruvate accumulates as does lactate, frequently in a definite ratio to pyruvate. F. S. Randalls and colleagues were interested in determining whether the impaired ability of the body to utilize pyruvate in the presence of thiamin deficiency is a uniform abnormality of all tissues or whether this impairment of metabolism may be more marked in the heart. Experimental work on dogs revealed that the pyruvate balance of the heart appears to be unlike that of other tissues. The workers concluded that normally the heart not only oxidizes all the carbohydrate products formed within it but also utilizes some poured into the blood stream by other organs. In thiamin deficiency this function is impaired. It was suggested that an important source of the increased pyruvic acid blood levels observed in thiamin deficiency is the heart tissue itself.

Additional evidence of the importance of certain vitamins of the B-complex in the formation of antibodies was obtained by A. E. Axelrod and associates. A severe impairment of antibody response was observed in pantothenic acid and pyridoxine-deficient rats. Variable but low antibody titers were observed in riboflavin-deficient animals. Good antibody response was observed in well nourished and starved control animals. (*See* also BIOCHEMISTRY; CHEMISTRY; CHEMOTHERAPY; FISHERIES; FLOUR; FOOD RESEARCH; MEDICINE.)

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(F. J. SE.)

**Vocational Education:** *see* EDUCATION.

## Vocational Rehabilitation, Office of.

Physically and mentally handicapped civilians of working age requiring vocational rehabilitation services in order to obtain or retain employment commensurate with their potential capacities, numbered at least

U.S. VETERANS, injured in World War II, are shown in Chicago demonstrating their skill in making automobile identification tags, during the 1947 observance of National Employ the Physical Handicapped week

1,500,000 in the United States in 1947, not including veterans of the armed forces with service-incurred disabilities. The number was increasing at the rate of 200,000 a year. All 48 states, the District of Columbia, Puerto Rico, Hawaii and Alaska entered into partnership with the Federal Security agency's Office of Vocational Rehabilitation to provide the necessary services and facilities.

There were during the year 52 general rehabilitation agencies administered by the state boards of education through divisions of vocational rehabilitation. In 35 states, there were agencies authorized by state laws to provide vocational rehabilitation services to rehabilitate blind persons. In 17 states general rehabilitation agencies provided services for all types of handicapped clients, including the blind.

The states and territories actually operated the programs, purchasing rehabilitation services from existing facilities and necessary medical care from general practitioners, specialists, clinics, hospitals and other sources—either public or private—available in the communities. The federal government, through the Office of Vocational Rehabilitation in the Federal Security agency, assisted the states and territories through financial grants-in-aid, establishment of standards of service and technical aid. The federal government assumed all necessary administrative costs incurred by the states as well as their expenditures for guidance and placement of disabled individuals. Medical examinations and treatment, training and the costs of other services were shared equally by the states and the federal government.

The states were fully reimbursed by the federal government for costs of services to war-disabled civilians such as merchant seamen, members of the Civil Air Patrol and the aircraft warning service injured in performance of duty.

During the fiscal year 1947, 43,880 clients—32,015 men and 11,865 women, including the blind—were rehabilitated into employment, and their cases were closed to the mutual satisfaction of themselves and their employers. Total annual earnings—not including those of farmers and family workers, whose earnings were difficult to estimate—increased almost 400% after rehabilitation, rising from an estimated annual rate of $13,922,100 before rehabilitation to $67,796,700 afterward. Of this group, 32,384 or 74% were unemployed when they were surveyed for services, 6,245 never having worked before and 9,250 only part time.

In addition, 19,900 other clients made vocational adjustments during the same period following diagnosis or counselling and planning, while 102,711 were still in process of rehabilitation at the close of the fiscal period.

Clients found employment in various professional and semiprofessional fields, and in skilled, semiskilled and unskilled occupations.

Rehabilitation programs were conducted at a total cost, during the 1947 fiscal year, of $19,313,314, of which the federal share was $14,188,933. The states' participation totalled $5,124,411, which represented state and local governmental funds supplemented by contributions from interested welfare, health, fraternal and other organizations. (*See* also VETERANS' ADMINISTRATION.) (M. J. SY.)

## Wages and Hours.

Manufacturing pay rolls of the U.S. were substantially larger in the first nine months of 1947 than in the corresponding months of 1946 and increased during the rest of the year. The index numbers for Jan. 1947 were more than 34% higher than the figures for Jan. 1946. Substantial wage increases accounted for most of the increase. There were also more workers employed and fewer strikes.

Table I shows employment indexes for 1946 and the first nine months of 1947 in all manufactures, durable goods and nondurable goods. The table shows wage-earner employment and pay-rolls in both durable and nondurable goods industries. These indexes were based upon 1939 as 100. The chart on page 787 shows employment and pay-roll variations from 1919 to June 1947.

**Table I.—*Indexes of Production-Worker Employment and Pay Rolls in Manufacturing Industries***

(1939 average=100)*

| Months | All manufacturers | | | | Durable goods | | | | Nondurable goods | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Wage-earner employment | | Wage-earner pay roll | | Wage-earner employment | | Wage-earner pay roll | | Wage-earner employment | | Wage-earner pay roll | |
| | 1947 | 1946 | 1947 | 1946 | 1947 | 1946 | 1947 | 1946 | 1947 | 1946 | 1947 | 1946 |
| Jan. . | 152.7 | 130.2 | 307.3 | 229.2 | 178.0 | 144.1 | 340.0 | 243.0 | 132.8 | 119.2 | 275.3 | 215.7 |
| Feb. . | 153.7 | 123.9 | 310.6 | 214.3 | 180.1 | 125.2 | 344.6 | 204.2 | 133.0 | 122.8 | 277.4 | 224.1 |
| March. | 154.0 | 132.1 | 314.1 | 238.3 | 180.9 | 141.7 | 349.9 | 244.8 | 132.8 | 124.4 | 129.2 | 232.1 |
| April . | 152.9 | 135.9 | 310.7 | 249.2 | 180.8 | 151.6 | 349.9 | 267.3 | 130.9 | 123.5 | 272.3 | 231.4 |
| May . | 150.6 | 139.6 | 312.2 | 253.5 | 178.0 | 159.0 | 353.8 | 275.1 | 129.1 | 124.3 | 271.5 | 232.3 |
| June . | 151.4 | 141.9 | 319.6 | 262.8 | 179.7 | 162.4 | 365.9 | 289.1 | 129.1 | 125.7 | 274.2 | 237.0 |
| July . | 149.9 | 143.6 | 313.9 | 267.1 | 174.7 | 165.7 | 350.4 | 296.3 | 130.3 | 126.2 | 278.1 | 238.5 |
| Aug. . | 153.8 | 147.7 | 322.4 | 284.4 | 177.1 | 170.6 | 357.2 | 316.1 | 135.4 | 129.7 | 288.4 | 253.4 |
| Sept. . | 156.7 | 149.5 | 337.2 | 290.3 | 179.5 | 173.1 | 372.8 | 323.3 | 138.7 | 130.9 | 302.4 | 258.1 |
| Oct. . | ... | 149.6 | ... | 292.8 | ... | 173.9 | ... | 328.1 | ... | 130.4 | ... | 258.3 |
| Nov. . | ... | 152.0 | ... | 292.8 | ... | 176.7 | ... | 331.1 | ... | 132.5 | ... | 266.0 |
| Dec. . | ... | 152.8 | ... | 306.2 | ... | 177.0 | ... | 337.3 | ... | 133.6 | ... | 275.8 |

This table compiled from statistics released by the *Monthly Labor Review*, United States bureau of labour statistics.

*Indexes are based on 1939 average and adjusted to census of manufacturers. They are not comparable to indexes published prior to Dec. 1942 by the bureau of labour statistics.

Table II shows the average hours and earnings in Aug. 1946 and 1947 in the principal manufacturing and nonmanufacturing industries.

It is evident that a high level of wage earners' weekly "take-home" continued through Aug. 1947, as the result of higher hourly earnings.

Table II.—*Average Weekly Earnings, Average Weekly Hours and Average Earnings per Hour in Major Industrial Classifications, Month of August 1947 and 1946: U.S.*

| Industry | Average weekly earnings 1947 | Average weekly earnings 1946 | Average weekly hours 1947 | Average weekly hours 1946 | Average hourly earnings cents 1947 | Average hourly earnings cents 1946 |
|---|---|---|---|---|---|---|
| ALL MANUFACTURING | $49.21 | $44.99 | 39.8 | 40.5 | 123.8 | 111.2 |
| Durable goods | 52.56 | 48.02 | 40.0 | 40.5 | 131.3 | 118.6 |
| Nondurable goods | 45.75 | 41.89 | 39.5 | 40.4 | 115.9 | 103.6 |
| Iron and steel | 54.51 | 48.78 | 39.6 | 39.9 | 137.6 | 122.2 |
| Electrical machinery | 51.61 | 47.49 | 39.2 | 40.6 | 131.6 | 116.9 |
| Machinery, not electrical | 55.83 | 50.99 | 40.5 | 40.9 | 137.9 | 124.6 |
| Transportation equipment, except automobiles | 56.36 | 53.91 | 39.7 | 39.7 | 142.0 | 135.9 |
| Automobiles | 56.07 | 53.80 | 37.3 | 39.2 | 150.1 | 137.3 |
| Nonferrous metals | 51.35 | 48.00 | 39.7 | 40.8 | 129.4 | 117.7 |
| Lumber basic | 45.26 | 38.78 | 43.2 | 41.8 | 104.8 | 92.8 |
| Furniture | 44.06 | 40.09 | 41.2 | 41.9 | 106.9 | 95.7 |
| Stone, clay and glass | 43.96 | 43.23 | 40.5 | 40.7 | 120.9 | 106.3 |
| Textile-mill products | 39.40 | 37.00 | 38.2 | 40.1 | 103.1 | 92.4 |
| Apparel products | 36.59 | 36.48 | 35.2 | 37.0 | 104.0 | 98.6 |
| Leather | 40.26 | 36.74 | 38.1 | 37.8 | 105.7 | 97.2 |
| Food | 49.58 | 44.34 | 43.3 | 43.7 | 114.4 | 101.5 |
| Tobacco | 57.26 | 34.16 | 39.2 | 38.6 | 95.1 | 88.5 |
| Paper and allied products | 50.46 | 44.26 | 42.4 | 43.4 | 119.2 | 102.0 |
| Printing and publishing | 59.48 | 43.01 | 39.4 | 40.8 | 151.0 | 129.9 |
| Chemical products | 51.31 | 44.91 | 40.9 | 40.8 | 125.3 | 110.2 |
| Products of petroleum | 60.62 | 54.36 | 40.6 | 40.3 | 149.4 | 134.7 |
| Rubber products | 55.60 | 51.03 | 38.4 | 39.4 | 144.6 | 129.5 |
| NONMANUFACTURING | | | | | | |
| Coal mining: | | | | | | |
| Anthracite | 66.26 | 60.65 | 38.4 | 37.9 | 172.4 | 159.8 |
| Bituminous | 71.49 | 62.84 | 40.1 | 42.8 | 177.8 | 146.6 |
| Metalliferous mining | 56.27 | 49.59 | 41.6 | 40.9 | 135.3 | 121.2 |
| Quarrying | 52.28 | 47.11 | 46.1 | 46.5 | 113 1 | 101.6 |
| Crude petroleum | 59.71 | 53.42 | 50.1 | 40.9 | 148.6 | 130.7 |
| Telephone | 46.92 | 44.19 | 38.7 | 39.3 | 121.5 | 112.9 |
| Telegraph | 55.10 | 41.31 | 44.8 | 45.4 | 122.8 | 91.0 |
| Electric light | 57.97 | 52.27 | 42.4 | 41.6 | 137.8 | 126.0 |
| Street railways and buses | 58.00 | 55.25 | 46.6 | 48.6 | 124.9 | 109.9 |
| Wholesale trade | 52.05 | 48.14 | 41.1 | 41.7 | 125.8 | 114.8 |
| Retail trade | 38.14 | 33.81 | 41.1 | 41.3 | 100.2 | 89.3 |
| Hotels | 29.38 | 27.15 | 44.9 | 43.8 | 65.4 | 61.4 |

Compiled from *Monthly Labor Review*, United States bureau of labour statistics, Washington, D.C.

Table III.—*Rise in Hourly Earnings Rates in U.S.A., 1941–47*

| Industry | Hourly earnings in August 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | 1947 |
|---|---|---|---|---|---|---|---|
| Manufactures in general | $ .745 | $ .864 | $ .965 | $1.016 | $1.025 | $1.112 | $1.238 |
| Durable goods manufactures | .830 | .966 | 1.060 | 1.111 | 1.114 | 1.186 | 1.313 |
| Nondurable goods | .658 | .738 | .811 | .865 | .908 | 1.036 | 1.159 |
| Iron and steel | .871 | .967 | 1.037 | 1.076 | 1.109 | 1.222 | 1.376 |
| Machinery | .844 | .976 | 1.063 | 1.120 | 1.136 | 1.246 | 1.379 |
| Lumber and products | .588 | .677 | .744 | .803 | .816 | .928 | 1.048 |
| Food and kindred products | .658 | .732 | .805 | .844 | .882 | 1.015 | 1.144 |
| Tobacco products | .520 | .587 | .658 | .715 | .761 | .885 | .951 |
| Rubber products | .861 | .936 | 1.015 | 1.102 | 1.119 | 1.295 | 1.446 |
| Anthracite mining | .989 | .992 | 1.073 | 1.179 | 1.331 | 1.598 | 1.724 |
| Bituminous mining | 1.033 | 1.061 | 1.147 | 1.189 | 1.248 | 1.466 | 1.778 |
| Wholesale trade | .798 | .861 | .944 | .939 | 1.013 | 1.148 | 1.257 |
| Building | 1.001 | 1.174 | 1.246 | 1.323 | 1.383 | * | * |

*Not available.

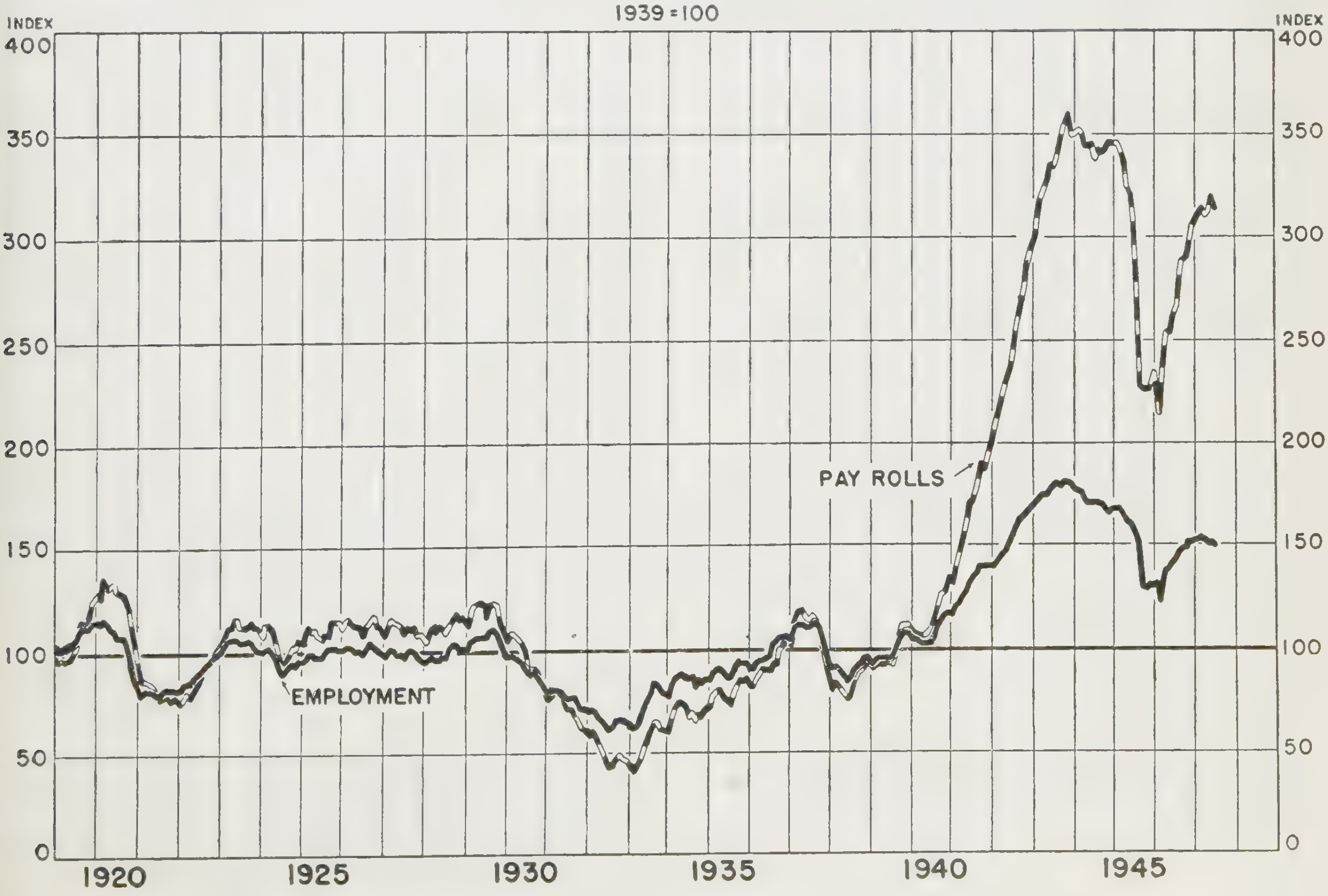
Table III shows a steady rise in average hourly earnings from 1941 to 1947. It was not possible to separate the increment added to hourly earnings by overtime work from the prevailing rates paid for standard hours of employment but additional increases occurred in many industries in 1947.

The much higher hourly earnings in some industries were the result of one or more of the following factors: (1) character of the labour supply employed, as to sex, age and skill; (2) productivity of the industry, principally determined by its degree of modernization, technical equipment and proportion of skilled workers; (3) degree to which union working conditions prevailed and (4) necessity of paying high wages to attract labour supply.

Weekly earnings measure wage-earner welfare better than do hourly rates (Table II). There were 3 industries of the 31 studied in which average weekly earnings exceeded $60 per week in Aug. 1947. The maximum was $71.49 in bituminous coal mining. The lowest weekly earnings were in hotels: $29.38. Of course, hotel earnings are supplemented by tips, and the statistics do not reveal this part of the employees' income. In Aug. 1947, there were 18 industries in which average weekly earnings were between $50 and $59.71 and 6 industries between $40 and $50. The average weekly earnings of durable goods manufacturers were $52.56 in Aug. 1947 compared with $48.02 in 1946.

The wages of farm labour, both monthly and daily wages, rose a little from 1946 levels, judging by the reports of the U.S.

EMPLOYMENT and pay rolls* for all manufacturing industries, 1919 to June 1947, as compiled by the U.S. bureau of labour statistics (1939=100)



bureau of agricultural economics; adequate statistical data were not yet available. (D. D. L.)

**Great Britain.**—There was a considerable slackening off of the upward trend of wage rates; for the first eight months of 1947 the total estimated increases in weekly rates amounted to only £832,000, spread over 2,600,000 workers, as compared with £2,350,000, spread over 6,700,000 workers, in the corresponding period of 1946, when wage rates were already being kept largely stable in order to avoid inflation. The trade unions supported wage increases only in exceptional cases, mainly where they were clearly needed in order to remedy deficiencies in labour supply. The government, for its part, continued to hold the cost of essential foodstuffs as nearly stable as possible by means of subsidies, which had become much more costly because of higher world prices. There were some proposals to reduce the food subsidies on financial grounds, but no action was taken.

There was further discussion of the desirability of adopting some "national wages policy" to bring the supply of labour for the different industries into better relation to the requirements of the plan of production. The government's general attitude was that wage increases should be granted only where labour needed to be attracted into undermanned industries, or where they were linked with increases in productivity under systems of payment by results.

The old cost-of-living index (July 1914=100), stood at 155 in Sept. 1939 and at 203 in July 1947, when it was issued for the last time. The new index, which had no connection with the old, was based on June 1947, and stood in August at 100.1. It should be emphasized that, despite the food subsidies, the actual rise in the cost of living since 1939 had been much greater than the old index suggested, as it gave a disproportionately heavy weight to subsidized food items. The new policy on subsidies announced in the budget of Nov. 1947, whereby the total expenditure on them was to be kept stable, meant that further increases in prices would show up in retail prices and so increase the cost of living. The index of retail prices rose at the end of the year, and further rises were expected.

For earnings, as distinct from wage rates, in industry generally the latest published figures available in 1947 were for Oct. 1946, when the average for all workers covered by the figures stood at 101*s.*, or 90% above the level in Oct. 1938. For men over 21 the figure was 120*s.* 9*d.*, a rise of 75%; for women over 18 it was 65*s.* 3*d.*, a rise of 101%. Youths' earnings had risen slightly more than men's, and girls' slightly more than women's. The increases were greatest in textile and clothing, and smallest in building, printing and paper, and public utilities. Working hours averaged 47.6 per week for men and 42.6 for women, as compared with 47.7 and 43.5 in 1938. Hours per week had fallen for youths from 46.2 to 44.7, and for girls from 44.6 to 42.6.

The highest weekly earnings were in the metal, engineering and shipbuilding trades—men 132*s.* 9*d.* per week, women 70*s.* 7*d.* Certain important industries were not covered by the general figures. Of these, coal mining showed for the final quarter of 1946 average earnings of 24*s.* per man shift, as compared with 11*s.* 3*d.* in 1938, when miners' earnings were abnormally low. For adult miners only, the average for Oct.–Dec. 1946 was 134*s.* 8*d.* weekly, as compared with 62*s.* in 1938. Allowances in kind were valued at 5*s.* 1*d.* in 1946, and 2*s.* 1*d.* in 1938. For dock workers, weekly earnings in Oct. 1946 averaged 143*s.* 3*d.* (no prewar comparison was available). For railway workers, there were no complete figures later than March 1946, when weekly earnings averaged 121*s.* 6*d.* for adult men and 88*s.* 4*d.* for women, a rise, in the case of men, of 77% above the 1939 level. In agriculture the statutory minimum wage for adult men was raised from 80*s.* to 90*s.* per week, and for women from 62*s.* to 68*s.*, in both cases for a standard week of 48 hr. Statutory regulation under the Wages Councils act was extended to cover certain further groups of distributive workers. (*See* also AGRICULTURE; BUSINESS REVIEW; CANADA; CENSUS DATA, 1947; LABOUR UNIONS; LAW; PRICES.) (G. D. H. C.)

**Wales:** *see* GREAT BRITAIN & NORTHERN IRELAND, UNITED KINGDOM OF.

## Wallace, Henry Agard

(1888– ), U.S. statesman. (See *Encyclopædia Britannica* for his early career.) Wallace was secretary of agriculture in the Roosevelt cabinet, 1933–40. He was elected vice-president in 1940 and after completion of his term became secretary of commerce in 1945. He resigned from the latter position on Sept. 20, 1946, at Pres. Harry S. Truman's request because of his attack on the administration's "get-tough-with-Russia" policy, which proved embarrassing to Secretary of State James F. Byrnes, then attending the Paris peace conference. Later Wallace became editor of the *New Republic.*

In 1947, Wallace launched a whirlwind crusade to reverse what he believed to be the faulty direction of U.S. foreign policy. He started his campaign with a visit to England, France and the Scandinavian countries in April, continuing it on his return to the United States with an 18,000-mi. tour of 15 states and the District of Columbia.

Although his tour at home and abroad attracted political criticism, it also drew large audiences, a phenomenon explained by some observers as a tribute to his "messianic" fervour. The motif running through Wallace's denunciations of the administration's foreign policy was that it would lead inevitably to war with the Soviet Union, and in a New York speech, Sept. 11, he said he would work within the Democratic party, but if it proved to be "a war party . . . then the people must have a new party."

Wallace announced (Dec. 29) that he would run for president in 1948 on a third party platform of "peace and abundance" for all, and he resigned the *New Republic* editorship.

**Walnuts:** *see* NUTS.

**War Assets Administration:** *see* SURPLUS PROPERTY DISPOSAL.

**War Brides:** *see* IMMIGRATION AND EMIGRATION.

## War Crimes.

Data available to the United Nations War Crimes commission in Oct. 1947 indicated that eight Allied countries (United States, United Kingdom, France, Netherlands, Norway, Greece, Yugoslavia and Australia) had conducted 1,600 war crimes trials, with an average of three persons tried in each. Of some 5,000 accused, 17% were acquitted. Of the 83% found guilty, one-third were sentenced to death and the remaining to fine or imprisonment. These trials were about equally divided between the European and far eastern areas. In the former area, half were tried in United States tribunals, and in the latter, less than a quarter. Data for trials by the Soviet Union and China were lacking. Czechoslovakia and Poland classified war criminals and collaborators together. They had dealt with nearly 28,000 persons accused of these crimes, of which about 1,000 had been sentenced to death and 18,000 to fine and imprisonment. The remaining 9,000 were acquitted.

**Europe.**—Since conclusion of the trial of major war criminals at Nuernberg in Oct. 1946, there were numerous trials of lesser war criminals. During 1947 death sentences were decreed by U.S. courts for officers of concentration camps at Dachau, Kaufbeuren and Buchenwald and for Captain Carl Hildebrand; Field

Marshal Erhard Milch was sentenced to life imprisonment for war crimes. Seven SS men, mostly physicians, were found guilty of war crimes and crimes against humanity for experiments on inmates of concentration camps. Three industrial magnates, including Friedrich Flick, were sentenced to imprisonment for exploiting slave labour.

British courts sentenced to death members of the staff of the Ravensbrueck women's concentration camp, including four women, and sentenced Field Marshal Albert Kesselring to death (later commuted to life imprisonment) for the massacre of Italian civilians at the Ardeatine caves.

French courts sentenced to death 21 SS men for murdering prisoners, and sentenced Captain Heinrich Tillesen to 15 years' imprisonment for murdering Dr. Matthias Erzberger, former chancellor of Germany.

The soviet court at Stalino obtained confessions from 4 of 12 German officers on the charge of participating in the massacre of 170,000 soviet civilians and 150,000 prisoners of war and the destruction of $2,000,000,000 worth of mining and industrial equipment. The Polish tribunal at Krakow sentenced to death 23 SS officers for crimes against humanity at the Auschwitz extermination camp.

In addition to these trials, preparations were made for the trial of the members of the four organizations (the SS, the SD, the gestapo, and the leadership corps of the nazi party) which had been found to be criminal organizations by the International tribunal at Nuernberg. According to the judgment of that tribunal, each alleged member of a criminal organization was entitled to individual trial.

Apart from war criminal trials, several trials were held by the Allied courts in the European zone for persons accused of sedition against military government. Thus on Feb. 23, it was announced that British and U.S. forces had arrested a number of higher officers of the SS and others for collaboration in an underground movement to restore nazi government and to lead Europe into war against Russia. On March 26, the U.S. commander at Frankfurt stated that a nazi plot in that city had been frustrated, and four former SA officers had been arrested.

German denazification courts sentenced the three men who had been acquitted by the International tribunal at Nuernberg (Hans Fritsche, Franz von Papen and Hjalmar Schacht) to prison terms of eight or nine years. Hitler's photographer, Heinrich Hoffman, was also sentenced to imprisonment by one of these courts. More than 2,000,000 persons were subject to denazification proceedings in the U.S. zone, and more than 400 German denazification tribunals were established to deal with them. In July 1946 General Joseph T. McNarney extended amnesty to youths and on the following Christmas to persons not charged as "major offenders" or "offenders" and whose financial status indicated they had not profited from the nazi regime or who were more than 50% disabled. These amnesties reduced those subject to trial by half. By the beginning of 1947, 125,738 persons had been tried, of whom more than 4% were found to be "major offenders" or "offenders," less than 9% "lesser offenders," and nearly 10% were exonerated. The rest were classified as "followers" not interned but subject to supervision and to certain limitations of occupation and public service.

A new United States directive for military government in Germany issued on July 11, 1947, urged "every effort to facilitate and bring to early completion the war crimes program. . . ."

**Far East.**—The trial of Japanese accused as "major war criminals," begun June 3, 1946, continued through 1947. The fact that there were more defendants (28) and more counts in the indictment (55) accounted in part for the greater length of the trial as compared with that at Nuernberg. General Hideki Tojo, whose defense began near the end of the year, assumed major responsibility for the war, which, however, he alleged was a defensive necessity for Japan.

BUCHENWALD concentration camp officials who were among the 31 defendants being tried for war crimes by a U.S. military tribunal at Dachau, Germany. All 31 were convicted on Aug. 12, 1947, with 22 sentenced to death and the remainder to life or long-term imprisonment

In the far eastern zone, there were numerous trials of lesser war criminals. The British court at Hong Kong sentenced to death the commandant and the doctor of the Shamshaipo prison camp for murdering prisoners, the chief of the Japanese gendarmery in Hong Kong, Colonel Noma Kennosuke, for atrocities against civilians and Colonel Nakano and Captain Imamura for maltreatment of prisoners of war in Formosa. The British court at Singapore sentenced Lt. Gen. Sabura Kawamura and Lt. Col. Masayuke Oishi to death for complicity in the murder of 5,000 Chinese after the fall of Singapore.

The French court at Şaigon sentenced 13 members of the Japanese police for torturing French men and women.

The Australian court at Rabaul sentenced to death Lt. Masao Baba for ordering forced marches of British and Australian prisoners in Borneo in 1945 and Commander Hatakeyama for participation in the murder of Allied troops in the Netherlands Indies.

A Chinese court at Nanking sentenced to death Lt. Gen. Rensuke Isogai, governor of Hong Kong during the Japanese occupation, for ill treatment and starvation of civilians in Hong Kong.

**Activities of the United Nations.**—The trial and sentencing of war criminals had proceeded with a high degree of co-operation among the powers. Yugoslavia, however, complained that certain categories of war criminals, traitors and quislings in the U.S., British and French zones had not been turned over for trial in its zone. With the support of the Soviet Union, it introduced a resolution concerning this matter in the second general assembly of the United Nations in Oct. 1947. The assembly rejected the resolution, which criticized the western powers, and approved a British resolution recommending that member states "continue with unabated energy to carry out their responsibilities for the surrender and trial of war crimes."

The United Nations War Crimes commission continued to function in London under the chairmanship of Lord Wright. It initiated the publication of a series of reports of war crimes trials, thus making available the legal principles developed in these trials.

The United Nations has proceeded with studies in pursuance of the resolutions of the first general assembly concerning the codification of international criminal law, including the war crimes set forth in the Nuernberg charter and the crime of genocide. (*See* also INTERNATIONAL LAW; WORLD WAR II.)

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(Q. W.)

**War Damage Insurance:** *see* INSURANCE.

**War Debts.** A statement follows showing the World War I indebtedness of foreign governments to the United States as of July 1, 1947.

| Country | Principal | Accrued Interest | Total Indebtedness |
|---|---|---|---|
| Funded debts: | | | |
| Belgium | $ 400,680,000.00 | $ 119,531,077.60 | $ 520,211,077.60 |
| Czechoslovakia | 165,241,108.90 | 19,006,198.84 | 184,247,307.74 |
| Estonia | 16,466,012.87 | 9,170,747.94 | 25,636,760.81 |
| Finland | 7,624,499.59 | 634,770.69 | 8,259,270.28 |
| France | 3,863,650,000.00 | 897,077,124.40 | 4,760,727,124.40 |
| Germany (Austrian indebtedness)* | 25,980,480.60 | 44,058.93 | 26,024,539.59 |
| Great Britain | 4,368,000,000.00 | 2,351,464,782.58 | 6,719,464,782.58 |
| Greece | 31,516,000.00 | 6,229,215.10 | 37,745,215.10 |
| Hungary | 1,908,560.00 | 965,118.38 | 2,873,678.38 |
| Italy | 2,004,900,000.00 | 57,276,909.34 | 2,062,176,909.34 |
| Latvia | 6,879,464.20 | 3,713,951.84 | 10,593,416.04 |
| Lithuania | 6,197,682.00 | 3,297,593.51 | 9,495,275.51 |
| Poland | 206,057,000.00 | 114,772,064.20 | 320,829,064.20 |
| Rumania | 63,860,560.43 | 14,666,897.10 | 78,527,457.53 |
| Yugoslavia | 61,625,000.00 | 2,387,968.78 | 64,012,968.78 |
| Total | $11,230,586,368.65 | $3,600,238,479.23 | $14,830,824,847.88 |
| Unfunded debts: | | | |
| Armenia | $ 11,959,917.49 | $ 16,627,153.58 | $ 28,587,071.07 |
| Russia | 192,601,297.37 | 274,738,070.32 | 467,339,367.69 |
| Total | $ 204,561,214.86 | $ 291,365,223.90 | $ 495,926,438.76 |
| Total of above | $11,435,147,583.51 | $3,891,603,703.13 | $15,326,751,286.64 |
| Germany:† | | | |
| Army costs (reichsmarks) | 997,500,000.00 | 87,490,551.50 | 1,084,990,551.50 |
| Awards of Mixed Claims Commission (reichsmarks) | 2,040,000,000.00 | 247,350,000.00 | 2,287,350,000.00 |
| Total (reichsmarks) | 3,037,500,000.00 | 334,840,551.50 | 3,372,340,551.50 |
| Total (in dollars at 40.33 cents to the reichsmark) | $1,225,023,750.00 | $135,041,194.42 | $1,360,064,944.42 |

*The German government had been notified that the government of the United States would look to the German government for the discharge of this indebtedness of the government of Austria to the government of the United States.

†Indebtedness to the United States under agreements of June 23, 1930, and May 26, 1932.

(E. F. B.)

**United States Loans, World War II and Later.**—Although the total indebtedness of other countries to the United States government incurred during and after World War II approaches in amount that of World War I, the pattern differs materially. Whereas 70% of the original World War I debt was for war goods acquired prior to the armistice, 90% ascribable to World War II (as of June 30, 1947) arose in the two postwar years and was largely for rehabilitation and reconstruction purposes.

The main difference in the financing of the two wars was in

*Foreign Credits of the U.S. Government—By Agency, by Type of Credit, and by Country, as of June 30, 1947*

| | Total | Outstanding | Unutilized commitments |
|---|---|---|---|
| Total | $9,608,334,680 | $6,480,927,021 | $3,127,407,659 |
| By agency: | | | |
| Agriculture department | 124,948,446 | 124,948,446 | |
| Export-Import bank | 2,696,328,803 | 1,757,692,989 | 938,635,814 |
| Maritime commission | 170,924,773 | 140,700,600 | 30,224,173 |
| Reconstruction Finance Corp.: | | | |
| Proper | 294,482,554 | 259,482,554 | 35,000,000 |
| Office defense supplies | 1,715,447 | 1,715,447 | |
| Office rubber reserve | 109,154 | 109,154 | |
| U.S. Commercial company | 12,068,644 | 3,592,122 | 8,477,522 |
| State department: proper | 44,065 | 44,065 | |
| Office Foreign Liquidation commission | 1,149,590,022 | 840,631,148 | 308,958,874 |
| Treasury department: special British loan | 3,750,000,000 | 2,050,000,000 | 1,700,000,000 |
| Lend-lease fiscal operations | 1,408,122,772 | 1,302,011,496 | 106,111,276 |
| By type of credit: | | | |
| Loans | $6,744,082,077 | $4,070,446,263 | $2,673,635,814 |
| Property credits | 2,728,746,721 | 2,283,452,398 | 445,294,323 |
| Surplus property | 1,149,699,176 | 840,740,302 | 308,958,874 |
| Lend-lease | 1,408,122,772 | 1,302,011,496 | 106,111,276 |
| Merchant ships | 170,924,773 | 140,700,600 | 30,224,173 |
| Commodity credits | 135,505,882 | 127,028,360 | 8,477,522 |
| Cotton | 126,755,882 | 126,755,882 | |
| Material | 124,948,446 | 124,948,446 | |
| Operating expenses | 1,807,436 | 1,807,436 | |
| Raw material | 8,750,000 | 272,478 | 8,477,522 |
| By country: | | | |
| American republics | $ 604,499,178 | $ 315,605,276 | $ 288,893,902 |
| Argentina | 210,000 | | 210,000 |
| Bolivia | 19,532,816 | 9,597,816 | 9,935,000 |
| Brazil | 154,728,506 | 103,990,422 | 50,738,084 |
| Chile | 65,702,765 | 18,164,471 | 47,538,294 |
| Colombia | 34,676,982 | 19,625,415 | 15,051,567 |
| Costa Rica | 6,802,975 | 6,802,975 | |
| Cuba | 19,531,125 | 12,221,125 | 7,310,000 |
| Dominican Republic | 1,630,053 | 1,630,053 | |
| Ecuador | 16,973,659 | 6,393,659 | 10,580,000 |
| Haiti | 7,240,000 | 7,240,000 | |
| Honduras | 577,250 | 577,250 | |
| Mexico | 133,901,901 | 54,200,278 | 79,701,623 |
| Nicaragua | 2,289,500 | 2,289,500 | |
| Panamá | 121,000 | | 121,000 |
| Paraguay | 4,901,450 | 4,901,450 | |
| Peru | 5,334,649 | 5,261,155 | 73,494 |
| Salvador | 1,257,372 | 1,257,372 | |
| Uruguay | 14,842,312 | 12,085,205 | 2,757,107 |
| Venezuela | 2,028,500 | 2,028,500 | |
| Unclassified | 112,216,363 | 47,338,630 | 64,877,733 |
| Austria | 10,750,000 | 1,304,715 | 9,445,285 |
| Bahrein | 209,205 | 209,205 | |
| Belgium | 146,249,848 | 146,249,848 | |
| British Commonwealth | 4,661,548,995 | 2,917,666,956 | 1,743,882,039 |
| United Kingdom | 4,629,482,554 | 2,894,482,554 | 1,735,000,000 |
| Australia | 7,000,000 | 7,000,000 | |
| British Honduras | 443,901 | 443,901 | |
| Burma | 5,000,000 | 5,000,000 | |
| Canada | 10,700,000 | 5,000,000 | 5,700,000 |
| Newfoundland & Labrador | 1,422,540 | 1,422,540 | |
| New Zealand | 5,500,000 | 4,317,961 | 1,182,039 |
| Union of South Africa | 2,000,000 | | 2,000,000 |
| China | 241,960,011 | 175,903,399 | 66,056,612 |
| Czechoslovakia | 71,996,489 | 29,585,066 | 42,411,423 |
| Denmark | 30,000,000 | 15,086,000 | 14,914,000 |
| Egypt | 8,924,360 | 8,924,360 | |
| Ethiopia | 4,000,000 | 646,762 | 3,353,238 |
| Finland | 130,379,166 | 95,227,955 | 35,151,211 |
| France | 1,892,892,436 | 1,683,791,384 | 209,101,052 |
| Germany | 44,755,252 | 36,277,730 | 8,477,522 |
| Greece | 121,173,400 | 54,650,148 | 66,523,252 |
| Hungary | 36,900,000 | 10,289,503 | 26,610,497 |
| Iran | 34,316,159 | 9,247,170 | 25,068,989 |
| Iraq | 507,508 | 507,508 | |
| Italy | 327,339,308 | 219,371,652 | 107,967,656 |
| Japan | 105,750,630 | 98,136,119 | 7,614,511 |
| Korea | 25,000,000 | 3,266,816 | 21,733,184 |
| Lebanon | 4,771,167 | 1,807,816 | 2,963,351 |
| Liberia | 19,275,000 | 10,649,958 | 8,625,042 |
| Netherlands & possession | 480,524,314 | 322,350,774 | 158,173,540 |
| Netherlands | 281,159,907 | 253,920,018 | 27,239,889 |
| Netherlands Indies | 199,364,407 | 68,430,756 | 130,933,651 |
| Norway | 79,778,386 | 10,234,551 | 69,543,835 |
| Philippines | 65,000,000 | 65,000,000 | |
| Poland | 93,050,940 | 33,187,942 | 59,862,998 |
| Portuguese possession: Angola | 60,224 | 60,224 | |
| Saudi Arabia | 27,000,000 | 8,671,993 | 18,328,007 |
| Siam | 10,000,000 | 5,009,915 | 4,990,085 |
| Turkey | 40,162,703 | 5,693,605 | 34,469,098 |
| U.S.S.R. | 241,560,000 | 196,191,602 | 45,368,398 |
| Yemen | 1,000,000 | | 1,000,000 |
| Unclassified areas | 47,000,001 | 121,069 | 46,878,932 |
| Europe—special cotton credit | 41,000,000 | | 41,000,000 |
| Special exporter-importer credits | 1,000,001 | 121,069 | 878,932 |
| Various countries | 5,000,000 | | 5,000,000 |

Source: Clearing office for foreign transactions, department of commerce.

the introduction of lend-lease in the later conflict. For the war period from July 1, 1940, to June 30, 1945, including the 18 months prior to Pearl Harbor, foreign aid in the form of grants and credits totalled about $50,000,000,000, the greater part of which represented lend-lease or other grants for which payment was not expected. For the first two postwar years, July 1, 1945, through June 30, 1947, aid amounted to about $12,000,000,000, the portion in the form of credits being somewhat larger than in grants.

The figures presented in the table on page 790 are exclusively credits, for which there is a definite obligation to repay principal, invariably with interest. The amounts shown relate to indebtedness as of June 30, 1947, and include a relatively small amount still due on some loans granted by the Export-Import bank prior to the war. They are, however, exclusive of World War I debts. The amount outstanding is the total amount originally disbursed or utilized less repayments. Unutilized commitments represent amounts still available to the borrower under the terms of the agreement. It was probable that, for one reason or another, some of this would never be utilized. For example, new sales of surplus property to Czechoslovakia and Hungary were suspended.

On the other hand, all except $300,000,000 of the $1,700,000,000 balance under the special loan to the United Kingdom had been utilized by Dec. 31, 1947.

The total of outstanding and unutilized commitments represented the maximum amount of credit which could be extended on the basis of authorizations at June 30, 1947. It was exclusive of the more than $800,000,000 uncommitted lending capacity of the Export-Import bank and other credits which might be approved thereafter by other agencies under programs authorized by the congress.

Credits extended abroad by the U.S. government were of three main types: Loans, property credits and commodity credits. Loans were invariably in the form of dollar credits, either restricted to expenditures on specific items or unrestricted as to locale or method of expenditure. Property credits and commodity credits, on the other hand, were expressed in terms of existing goods, most of which were produced or contracted for during the war years.

While loans thus added to the demand for new commodities, the other types of credit generally did not have a similar effect.

Property credits were extended in connection with the disposal of surplus property, including merchant ships, and in settlement for lend-lease goods on hand at the end of the war or in process of manufacture and part of the so-called lend-lease pipe line. Commodity programs involved credits extended to the military governments of Germany and Japan in the form of advances of cotton and other commodities to assist in the economic rehabilitation of these areas. (R. C. Pe.)

**War Prisoners:** *see* Prisoners of War.

**Warren, Earl** (1891– ), U.S. politician and governor of California, was born on March 19 in Los Angeles, Calif. He was graduated from the University of California in 1912, received his law degree in 1914 and was admitted to the bar the same year. He joined the army during World War I, but was not sent overseas.

He became deputy city attorney of Oakland in 1919. Six years later he was elected to the district attorneyship, and in 1938 California Republicans elected him as the state's attorney-general.

Warren, whose reputation as a "racket-busting" prosecutor rivalled that of Thomas E. Dewey in New York, was elected in 1942 as governor of California. Two years later, he turned down a G.O.P. offer to run for vice-president of the United States on the ground that he was obligated to complete his term as governor.

In the 1946 gubernatorial elections, Warren shattered precedent in California by winning both the Republican and Democratic nominations in the June 4 primaries, making his re-election in the November polls a foregone conclusion.

Because California's large number of electoral votes made it a "key" state, Warren figured in 1947 as a prominent aspirant for the G.O.P. presidential nomination. While he agreed on Nov. 13 to enter the state's primary, he said he would confine his campaign to California alone.

**War Risk Insurance:** *see* Insurance.
**War Savings Stamps:** *see* Post Office.

**Washington.** A state in the extreme northwest United States, popularly known as the "Evergreen state," admitted to the union Nov. 11, 1889. Total area, 68,192 sq.mi. of which 66,977 sq.mi. are land; pop. (1940) 1,736,191; native, 1,525,812; foreign born 210,379. An estimate as of July 1, 1947, placed the population of the state at 2,233,000, an increase of 28.6% more than 1940. Capital, Olympia 16,000 (est.). The 1940 census and 1947 estimates for three largest cities were respectively: Seattle, 368,302 and 470,000; Spokane, 122,001 and 147,000; Tacoma, 109,308 and 136,000. Wartime growth and postwar stabilization are reflected in 1940 census and the estimates for 1945 and 1947 for two cities: Bremerton 15,134 to 72,000 to 35,000; Vancouver 18,788 to 39,510 to 26,000. The urban population in 1940 was 921,969 or 53.1%; in 1947 it was 1,350,507 (est.) or 60.5%.

**History.**—The state legislature in its 30th biennial session from Jan. 13 to March 13, was in complete control of a Republican majority whose influence was enhanced by its coalition with a group of right-wing Democrats. Changes made in the state's administrative structure were material, particularly with the reallocation of the functions of the former department of finance, budget and business to a new department of public institutions and to a director of the budget. A new state board of education was to consist of 12 members, of whom 2 were to be elected from each of the state's 6 congressional districts by conventions of representatives of local school directors. Nine ad interim committees were formed. One, a bipartisan legislative council of 21, was delegated primarily to study and examine administrative procedure. Its constitutionality was questioned, but its legality was upheld by the state supreme court. A similar committee was instructed to investigate un-American activities. Two of the constitutional amendments to be placed on the state's 1948 ballot related to local government. One was so worded that Seattle could sever its connection with King county and set up a new city-county jurisdiction; another would permit counties to adopt "Home Rule Charters" and effect radical administrative reorganization. The death of Fred Norman, Republican congressman from the 3rd district, on April 18, resulted in a spirited campaign in which Russell Mack on June 7 won over Charles Savage, Democratic member of the 79th congress but defeated for re-election in 1946.

State officers for 1948: governor, Monrad C. Wallgren; lieutenant governor, Victor A. Meyers; secretary of state, Belle Reeves (died Jan. 2, 1948, successor appointed by governor, Earl S. Coe); treasurer, Russell H. Fluent; auditor, Cliff Yelle; attorney general, Smith Troy; state superintendent of public instruction, Pearl Wanamaker (elected on nonpartisan basis); chief justice of the state supreme court, William F. Millard; speaker, house of representatives, Herbert M. Hamblen.

**Education.**—During the school year 1946–47, average daily attendance in elementary and secondary schools was 295,405; the total number of teachers 13,844 whose average salary was $2,624.01. Total current expenditures were $60,085,676.92, and the cost per pupil in attendance was $192.39. The 1947 legislature, furthermore, appropriated $20,000,000 to help finance school district building projects, and by increasing subventions to districts required them to grant salary increases of from $500 to $700 to public school teachers.

**Social Insurance and Assistance, Public Welfare and Related Programs.**—During the period Nov. 1946 through Oct. 1947, inclusive, public assistance in the state, including federal direct expenditures and state aid, cost $69,724,742.30. An average of 115,019 persons received assistance to the total amount of $66,186,635.42. An average of 16,662 persons per month received home assistance to the amount of $5,480,402.11. An average number of 65,772 old persons received a total of $45,552,983.73. An average number of 26,911 children received a total of $9,849,077.64. An average number of 645 blind persons received a total of $483,126. A total of 128,645 unemployed workers who had received at least one check were paid a total of $36,455,482 during the benefit year ending June 30, 1947. On Nov. 30, 1947, ten charitable institutions had a total population of 9,739 and four correctional institutions had 2,268 inmates, and both programs cost the state $8,607,740.17 during the fiscal year of April 1, 1946, to March 31, 1947.

**Communications.**—In 1944 there were 5,524 mi. of railroad in the state. In 1947 mileage of both state and rural highways was 52,126.99; federal-aid funds applied to 9,214.01. During 1947 up to Oct. 1, the state spent $10,561,017.46 for construction. On Oct. 31 the largest telephone company in the state reported 516,208 units, an annual gain of 45,657; independent firms had 75,000 (est.) subscribers.

**Banking and Finance.**—Whereas the per capita property tax of $25.64 during 1946 was the lowest for any of the far-western states, the total per capita of $84.05 for the fiscal year ending June 30, 1947, was the highest for any of the United States. In 1946 the total assessed valuation of real and personal property was $1,578,922,506. On March 31, 1947, the bond indebtedness of $4,240,000 and outstanding warrants amounting to $10,237,919.02 were easily covered by investments and cash balances. The treasurer's cash balance was $128,521,211.19. For the year ending on March 31, 1947, total receipts were $299,962,319.43 and disbursements were $299,100,407.37. One hundred and twenty-five banks in the state reported a total capital of $38,627,600; capital surpluses and undivided profits of $95,731,269.28; and assets of $2,297,613,881.55.

**Agriculture.**—In 1945 the state had 79,887 farms whose acreage totalled 16,719,726, and of these 4,186,000 ac. were in 1946 devoted to 52 crops. In 1946 the total farm crop was valued at $597,001,000, and in 1947 an official estimate placed this value at an all-time high of $625,000,000. The total farm income (exclusive of changes in inventory) in 1946 was $567,107,000; from crops $359,291,000; from livestock $185,646,000; from government payments $12,172,000. The state led all others in rural electrification with 95.1% of all farms on power lines.

*Leading Agricultural Products of Washington, 1947 and 1946*

| Crop | 1947 (est.) | 1946 |
|---|---|---|
| Wheat, bu. | 68,368,000 | 77,965,000 |
| Apples, bu. | 33,480,000 | 32,710,000 |
| Hay (all), tons | 1,661,000 | 1,811,000 |
| Pears, bu. | 8,305,000 | 8,890,000 |
| Peas (100-lb. bags) | 6,542,000 | 6,926,000 |
| Hops, lb. | 19,824,000 | 19,720,000 |
| Potatoes, bu. | 8,000,000 | 10,120,000 |
| Cherries, tons | 33,400 | 34,700 |
| Peaches, bu. | 2,817,000 | 2,700,000 |
| Oats, bu. | 7,000,000 | 6,144,000 |

**Manufacturing and Trade.**—In 1946, income payments in the state amounted to $3,112,000,000 in contrast with $1,012,000,000 in 1939. Business transactions for the period May 1, 1946, to April 30, 1947, amounted to $6,459,711,783 representing an increase of 20.6% more than the previous year. Of this amount, manufactures constituted $1,326,177.99; wholesaling $1,413,478,336; retailing $3,122,357,800; services (including professional) $360,376,716; mining and extracting $136,309,108. Total civilian employment in July 1947 was 957,000; wage earners and salaried persons 671,000; tradesmen and service personnel 262,000; transport and communication workers 69,000; employees of government and government contractors and others 164,000. Value of operating properties of public utilities in 1947 was $424,040,120. The Washington customs district reported exports valued at $151,694,868 and imports at $64,925,408 for the period Jan. through Aug. 1947.

Record catches of bottom fish, sole, ling and cod, found a ready market and indicated a new development in the fishing industry.

**Mineral Production.**—Mineral production in 1945 amounted to $31,588,000 of which metals accounted for $7,140,242, and in 1946 the latter were estimated at $6,886,749. There was a steady decline in the yield of copper. In the northeastern part of the state, development of the largest known body of low-grade lead-zinc ore in the United States was begun.

(H. J. De.)

**Washington,** District of Columbia, national capital of the U.S.A., 11th largest of U.S. cities, had in 1940 a population of 663,091. In 1946, Washington reached a peak of population which had declined by June 30, 1947, to an estimated 861,000 for the district and 1,205,220 for the metropolitan area. The number of government employees, which reached about 300,000 during World War II, declined to 250,000 at the end of 1946 and to 195,000 by Dec. 1, 1947. The acute housing shortage continued through 1947. Some new private housing was provided in the suburbs and a few apartment houses built in the city. No new public housing was built and most of the temporary war housing remained in use.

From 1926, the National Capital Park and Planning commission had served as the co-ordinating planning agency. In 1947, the staff of the commission, with the aid of a planning consultant, made progress in bringing up to date the comprehensive plan of Washington, as authorized by the Urban Development act of 1946.

The total appropriation of congress for the fiscal year running from July 1947–48, was $95,516,741.80. The federal contribution to the budget was $12,000,000—about one-eighth of the total. For some years the federal government contributed 50%, but contributions gradually declined to less than 10%. The area of private property covering less than half the area of the district, but in 1947 assessed at full value at the rate of $2 per $100, could not carry the tax load for a city developed on the scale of the national capital. No taxes were paid by the federal government on the 41% of land in federal ownership.

Washington is governed in all legislative matters by the congress of the United States, as provided in the constitution. The principal administrative agency is a commission of three, appointed by the president of the United States, one of whom is nominated from the corps of engineers, U.S. army. In 1947, a subcommittee of the committee on the District of Columbia of the house of representatives conducted a study and recommended that congress delegate to a locally elected council of 12 most of the responsibility conferred on congress by the constitution, the chief executive to be appointed by the council. In view of the character and function of the federal city, it was not expected that the federal government would forfeit its essential control of its national capital. (H. Js.)

**Washington, University of (Seattle).** On April 10, 1947, announcement was made of a $150,000 grant to the university by the Rockefeller foundation for a modern research program to be carried out by the university's far eastern department.

Climaxing three days of symposia concerning atomic energy, labour economics and the humanities, Dr. Raymond Bernard Allen was formally invested as the university's 21st president in a colourful academic ceremony, May 24, 1947. A few of the outstanding participants in the inauguration were Ernest O. Lawrence, Nobel prize winner in physics; Edward U. Condon, director of the national bureau of standards; Robert A. Millikan, former president of the California Institute of Technology; L. A. DuBridge, president of the California Institute of Technology; Edgar L. Warren, director of the U.S. conciliation service; Senator Elbert D. Thomas of Utah; Dr. Stafford Warren, dean of the University of California at Los Angeles medical school; and Robert Gordon Sproul, president of the University of California.

On Oct. 23, 1947, President Allen announced the planned construction of a 200-ton, 60-in. cyclotron, to cost $375,000. Also planned were a large cloud chamber for cosmic ray studies and a 4,000,000-volt Graaf generator.

As the year ended, a $20,000,000 building program was under construction, while $11,000,000 in additional construction was in the planning stage. Buildings nearing completion were units of the health sciences group, Thomson hall, Engineering hall, C. C. More hall, and additions to Johnson hall, Physics hall and the library. Planned for early completion were a student union building, an administration building, the Hiram Conibear Crew house, Fisheries hall and a fine arts building. (For statistics of endowment, enrolment, faculty, library volumes, etc., *see* UNIVERSITIES AND COLLEGES.) (R. B. A.)

## Washington University (St. Louis).

Washington university, at St. Louis, Mo., is nondenominational and coeducational. It comprises the college of liberal arts, the schools of engineering, architecture, law, social studies, fine arts, business and public administration, medicine, dentistry, nursing, botany, graduate studies and the University college (principally adult education). A department of music was inaugurated in 1947.

Completion of a laboratory during the year provided facilities for research in the chemistry of radioactive substances, supplementing work carried on in the university's cyclotron.

Other new buildings were a 70-family apartment building for faculty members, and a centre for student and alumni activities.

During the year the Washington university school of medicine was appointed to advise in health services and research carried on at the Los Alamos Atomic Bomb project in New Mexico.

Gifts and bequests totalling $732,269 were received during the fiscal year ending June 30, 1947.

Dr. Arthur Holly Compton, Nobel prize winner and leader in the development of atomic energy, is the chancellor of the university. (For statistics of endowment, enrolment, faculty, library volumes, etc., *see* UNIVERSITIES AND COLLEGES.)

(A. H. C.)

**Water Supply:** *see* PUBLIC HEALTH ENGINEERING.

## Wealth and Income, Distribution of.

A report on the distribution of U.S. liquid assets and income, published in 1947 by the federal reserve board, provided data for 1946 and early 1947 on the basis of a small field canvass of family spending units. An earlier report had provided similar information for the year 1945. The summary data on liquid asset holdings are provided in Tables I and II. Holdings covered by these data included government bonds and savings and checking accounts; the investigators were unable to obtain satisfactory information on holdings of currency.

Table I.—*Distribution of Spending Units and Liquid Assets by Amount of Liquid Asset Holdings,* Early 1947*

| Spending units ranked according to their holdings of liquid assets | Per cent of total liquid assets held | Amount of liquid assets held by smallest holder in group |
|---|---|---|
| Highest tenth | 60 | $4,250 |
| Second | 17 | 2,150 |
| Third | 10 | 1,300 |
| Fourth | 6 | 800 |
| Fifth | 4 | 450 |
| Sixth | 2 | 250 |
| Seventh | 1 | 50 |
| Eighth | † | 0 |
| Ninth | 0 | 0 |
| Lowest tenth | 0 | 0 |
| All spending units | 100 | |

*The term "total liquid assets" is used to represent total holdings in U.S. government bonds and in savings and checking accounts.
†Less than one-half of 1%.

Table I shows the distribution of the spending units—either single individuals or family groups pooling their major items of income and expense—according to their holdings of liquid assets. It may be seen that these holdings were unevenly distributed over the ten units.

Table II shows the distribution of spending units and liquid assets by the size of income of each unit, for 1946 and 1945. It is readily apparent from these data that the 50% of the spending units holding small liquid assets was not so highly concentrated at the lower end of the income scale. There was, however, a marked tendency for the higher income groups to have substantially larger accumulated savings in the form of liquid assets. The group with incomes of $4,000 or more represented only 18% of the spending units in 1946, but this group owned more than 50% of total liquid assets.

Table II.—*Distribution of Spending Units and Liquid Assets by Income Classes, 1946 and 1945*

| Annual income (money income before taxes) | Proportion of spending units 1946 | Proportion of spending units 1945 | Per cent of total liquid assets held* 1946 | Per cent of total liquid assets held* 1945 |
|---|---|---|---|---|
| $ 0– 999 | 17% | 20% | 5% | 7% |
| 1,000–1,999 | 23 | 27 | 11 | 14 |
| 2,000–2,999 | 25 | 23 | 17 | 17 |
| 3,000–3,999 | 17 | 15 | 16 | 16 |
| 4,000–4,999 | 8 | 7 | 12 | 10 |
| 5,000–7,499 | 6 | 5 | 13 | 13 |
| 7,500 and over | 4 | 3 | 26 | 23 |
| All spending units | 100% | 100% | 100% | 100% |

*The term "total liquid assets" is used to represent total holdings in U.S. government bonds and in savings and checking accounts.

Interest in the distribution of liquid assets arose from its possible effect upon the postwar level of U.S. economic activity. Because holdings of these assets were so concentrated, it was concluded that the effect on the postwar economy would depend largely upon the decisions of a small part of the population. The survey inquired into the intentions of the spending units in regard to possible disposal of their liquid assets and found that the majority considered their liquid assets as a nest egg for long-range purposes. Most of them did not intend to use their assets for current expenditures, even for durable goods and housing, but planned to finance these outlays out of current income or borrowing. Intentions to buy consumer durable goods other than automobiles in 1947 were significantly less pronounced than were intentions to buy those same goods in 1946. In purchasing durable goods during 1947, consumers planned to use their liquid asset holdings to a greater extent than in the previous year.

Table III.—*Distribution of Spending Units, Income, and Saving by Income Classes in 1941, 1945 and 1946**

| Annual income (money income before taxes) | Percentage of total 1941 | | | 1945 | | | 1946 | | |
|---|---|---|---|---|---|---|---|---|---|
| | Spending units | Total income | Total saving | Spending units | Total income | Total saving | Spending units | Total income | Total saving |
| Under $1,000 | 35% | 9% | −6% | 20% | 5% | −1% | 17% | 3% | −7% |
| $1,000–$1,999 | 30 | 21 | 9 | 27 | 16 | 11 | 23 | 12 | 2 |
| $2,000–$2,999 | 20 | 24 | 11 | 23 | 23 | 14 | 25 | 21 | 9 |
| $3,000–$4,999 | 10 | 18 | 18 | 22 | 32 | 36 | 25 | 33 | 35 |
| $5,000 and over | 5 | 28 | 68 | 8 | 24 | 40 | 10 | 31 | 61 |
| All classes | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |

*Figures for 1941 taken from *Spending and Saving of the Nation's Families in Wartime*, bureau of labour statistics bulletin No. 723, Oct. 1942. Table I of this bulletin gave the distribution of income by income classes, and Tables I and IV were used to estimate total net saving by income classes. For 1945 and 1946, the data were taken from the national liquid assets survey, and the survey of consumer finances.

Readers are cautioned that the findings of the surveys are not strictly comparable. The surveys for 1945 and 1946 differ somewhat from that for 1941 in the definition of spending units, in the coverage of spending units and in the methods used in collecting the data. Moreover, the form used to estimate savings in 1945 was less complete than the forms used in 1946 and 1941.

As the survey of liquid assets included information on the size distribution of income, changes in the distribution since 1941 could be traced by comparison with earlier studies. Such a comparison is presented in Table III. It can be seen that the distribution of income in 1946 differed greatly from that of 1941. The major trends over the war period were a shifting of spending units from the lower to the higher income groups and a large decline between 1941 and 1945 in the percentage of saving that was accounted for by the spending units with high incomes. Between 1945 and 1946, the proportion of total savings accounted for by units in the top income bracket increased substantially, reversing the wartime trend.

**State Distribution of Income.**—Income payments to individuals in 1946 were at a record level in nearly every state. For the continental United States as a whole, total income received by individuals was more than $169,000,000,000, approximately one-tenth above the previous all-time high of $155,000,-

Table IV.—*Income Payments to Individuals, by States and Regions*

| States and regions | Total income payments: Amount (In millions of dollars) 1940 | 1945 | 1946 | Per cent change 1940 to 1946 | Per cent change 1945 to 1946 | Per capita income: Amount (dollars) 1940 | 1946 | Per cent change 1940 to 1946 |
|---|---|---|---|---|---|---|---|---|
| Continental United States | 75,852 | 155,201 | 169,373 | +123 | + 9 | 575 | 1,200 | +109 |
| New England | 6,124 | 10,860 | 11,995 | + 96 | +10 | 725 | 1,320 | + 82 |
| Connecticut | 1,417 | 2,635 | 2,877 | +103 | + 9 | 827 | 1,465 | + 77 |
| Maine | 431 | 847 | 917 | +113 | + 8 | 509 | 1,044 | +105 |
| Massachusetts | 3,309 | 5,631 | 6,269 | + 90 | +11 | 766 | 1,356 | + 77 |
| New Hampshire | 269 | 460 | 543 | +102 | +18 | 546 | 1,048 | + 92 |
| Rhode Island | 511 | 956 | 1,006 | + 97 | + 5 | 715 | 1,347 | + 88 |
| Vermont | 187 | 331 | 383 | +105 | +16 | 521 | 1,085 | +108 |
| Middle East | 24,319 | 43,577 | 48,031 | + 98 | +10 | 752 | 1,432 | + 90 |
| Delaware | 239 | 393 | 430 | + 80 | + 9 | 896 | 1,493 | + 67 |
| District of Columbia | 905 | 1,607 | 1,736 | + 92 | + 8 | 1,080 | 1,569 | + 45 |
| Maryland | 1,222 | 2,501 | 2,716 | +122 | + 9 | 713 | 1,293 | + 81 |
| New Jersey | 3,138 | 5,774 | 6,161 | + 96 | + 7 | 803 | 1,494 | + 86 |
| New York | 11,830 | 20,454 | 22,895 | + 94 | +12 | 863 | 1,633 | + 89 |
| Pennsylvania | 6,225 | 11,376 | 12,437 | +100 | + 9 | 628 | 1,238 | + 97 |
| West Virginia | 760 | 1,472 | 1,656 | +118 | +13 | 398 | 914 | +130 |
| Southeast | 9,043 | 22,267 | 23,395 | +159 | + 5 | 322 | 801 | +149 |
| Alabama | 763 | 2,021 | 2,073 | +172 | + 3 | 268 | 733 | +174 |
| Arkansas | 493 | 1,218 | 1,328 | +169 | + 9 | 252 | 697 | +177 |
| Florida | 900 | 2,420 | 2,372 | +163 | − 2 | 471 | 1,010 | +114 |
| Georgia | 986 | 2,445 | 2,567 | +160 | + 5 | 315 | 809 | +157 |
| Kentucky | 880 | 1,957 | 2,163 | +146 | +10 | 308 | 778 | +153 |
| Louisiana | 847 | 1,986 | 1,982 | +134 | * | 357 | 784 | +120 |
| Mississippi | 444 | 1,205 | 1,182 | +167 | − 2 | 202 | 555 | +175 |
| North Carolina | 1,131 | 2,621 | 3,031 | +168 | +16 | 316 | 817 | +159 |
| South Carolina | 545 | 1,303 | 1,407 | +158 | + 8 | 286 | 729 | +155 |
| Tennessee | 927 | 2,443 | 2,535 | +174 | + 4 | 317 | 843 | +166 |
| Virginia | 1,127 | 2,648 | 2,755 | +144 | + 4 | 450 | 952 | +112 |
| Southwest | 3,908 | 9,370 | 9,714 | +149 | + 4 | 399 | 927 | +132 |
| Arizona | 237 | 594 | 627 | +164 | + 6 | 473 | 995 | +110 |
| New Mexico | 190 | 448 | 491 | +158 | +10 | 356 | 911 | +156 |
| Oklahoma | 829 | 1,801 | 1,848 | +123 | + 3 | 356 | 825 | +132 |
| Texas | 2,652 | 6,527 | 6,748 | +154 | + 3 | 413 | 954 | +131 |
| Central | 21,664 | 42,893 | 47,838 | +121 | +12 | 605 | 1,264 | +109 |
| Illinois | 5,740 | 10,695 | 12,019 | +109 | +12 | 726 | 1,486 | +105 |
| Indiana | 1,858 | 4,102 | 4,386 | +136 | + 7 | 541 | 1,158 | +114 |
| Iowa | 1,233 | 2,375 | 3,012 | +144 | +27 | 485 | 1,183 | +144 |
| Michigan | 3,425 | 6,799 | 7,379 | +115 | + 9 | 649 | 1,215 | + 87 |
| Minnesota | 1,424 | 2,614 | 3,082 | +116 | +18 | 509 | 1,090 | +114 |
| Missouri | 1,914 | 3,776 | 4,349 | +127 | +15 | 505 | 1,143 | +126 |
| Ohio | 4,448 | 9,114 | 9,808 | +120 | + 8 | 643 | 1,302 | +102 |
| Wisconsin | 1,622 | 3,418 | 3,803 | +134 | +11 | 516 | 1,198 | +132 |
| Northwest | 3,363 | 7,692 | 8,439 | +151 | +10 | 454 | 1,162 | +156 |
| Colorado | 589 | 1,271 | 1,380 | +134 | + 9 | 524 | 1,196 | +128 |
| Idaho | 232 | 525 | 588 | +153 | +12 | 440 | 1,243 | +182 |
| Kansas | 757 | 1,908 | 1,992 | +163 | + 4 | 422 | 1,062 | +152 |
| Montana | 321 | 555 | 669 | +108 | +20 | 574 | 1,394 | +143 |
| Nebraska | 569 | 1,333 | 1,489 | +162 | +12 | 433 | 1,164 | +169 |
| North Dakota | 237 | 566 | 624 | +163 | +10 | 368 | 1,162 | +216 |
| South Dakota | 242 | 598 | 673 | +178 | +13 | 376 | 1,228 | +227 |
| Utah | 265 | 649 | 689 | +160 | + 6 | 480 | 1,063 | +121 |
| Wyoming | 151 | 287 | 335 | +122 | +17 | 605 | 1,264 | +109 |
| Far West | 7,431 | 18,542 | 19,961 | +169 | + 8 | 750 | 1,465 | + 95 |
| California | 5,606 | 13,649 | 14,879 | +165 | + 9 | 805 | 1,531 | + 90 |
| Nevada | 92 | 210 | 235 | +155 | +12 | 836 | 1,703 | +104 |
| Oregon | 633 | 1,631 | 1,729 | +173 | + 6 | 579 | 1,188 | +105 |
| Washington | 1,100 | 3,052 | 3,118 | +184 | + 2 | 632 | 1,346 | +113 |

Source: United States department of commerce.
*Less than five-tenths of 1%.

000,000 in 1945. Higher prices were an important element in the 1946 income rise.

The state and regional income totals for 1946, shown in Table IV, reflected swift adjustments to peacetime conditions in all parts of the country. Most of the large relative gains achieved by the south and west over the war years were left intact. From 1940 to 1946 there was a significant relative shift of income from New England and the middle eastern states to the south and west. While, particularly for purposes of market analysis, significance attached to the latter shift, correlative data on population and levels of average incomes also should be taken into account. For example, New England and the middle eastern states, despite their long-term declining relative trends in total income, still had comparatively high per capita incomes and were principal centres of population. In 1946 they received more than one-third of all income paid out in the nation.

Also to be noted was the concentration of low-income states in the south. Although the substantial income gains by the southern states after 1929 had narrowed the relative difference between them and the rest of the country, these states had an average per capita income in 1946 only three-fifths as high as the average for all other states.

The record $1,200 per capita income of the continental United States in 1946 was 109% above the average of $575 for 1940. In almost all states, the 1946 per capita income exceeded wartime highs. In three-fourths of the states, it was at least double the 1940 level.

Particularly noteworthy, in view of its top-ranking advance in total income payments, was the fact that the far west's rise in per capita income from 1940 to 1946 was less than the national average. The upsurge of total income was accompanied by a large increase (37%) in population. The 1940–46 increase in population for the nation as a whole was 7%. (*See* also INCOME AND PRODUCT, U.S.) (M. GT.)

**Great Britain.**—Figures for the distribution of incomes in 1945 (*see* Table V) were published in 1947; although they were provisional, the improved method of estimation made them much more accurate than the figures for the previous year, so that comparison would be misleading; comparison with 1938, however, is possible if an allowance is made for the changed level of prices.

Table V.—*Distribution of Incomes in the United Kingdom, 1945*

| Ranges of income £ | Number of incomes 000's | % | Amount of income £,000,000 | % | Proportion of income retained after tax % |
|---|---|---|---|---|---|
| Under 250 | (19,000) | 71.5 | 3,565 | 46.1 | 96.7 |
| 250– 500 | 5,400 | 20.3 | 1,895 | 24.5 | 85.5 |
| 500– 1,000 | 1,650 | 6.2 | 1,140 | 14.7 | 73.1 |
| 1,000– 2,000 | 410 | 1.5 | 535 | 6.9 | 63.4 |
| 2,000–10,000 | 124 | 0.5 | 462 | 6.0 | 47.6 |
| 10,000 and over | 8 | 0.03 | 138 | 1.8 | 18.8 |
| TOTAL | (26,500) | 100.0 | 7,735 | 100.0 | 84.0 |

Note: £1,480,000,000 of private incomes (£870,000,000 after tax), consisting mainly of excess profits tax and undistributed profits of companies, could not be allocated to ranges of income and are not included in the total shown. Increases from social insurance and assistance are included in the lowest range.

Source: *National Income and Expenditure of the United Kingdom, 1938-1946* (Cmd. 7,099, H.M.S.O., 1947) crown copyright reserved. The figures in brackets are approximate private estimates.

**Eire.**—The official study of the national income in Eire, following the British White Papers, made it possible for the first time to prepare a comprehensive distribution of incomes, though excluding the agricultural population, about one-half of the total population of Eire. The results published for 1938 and 1943 are given in Table VI. The concentration of the distribution in the lower ranges was definitely greater than in the British distribution.

Table VI.—*Distribution of Incomes in Eire, 1938 and 1943*

(Excluding agricultural occupations)

| Ranges of Income £ | Number of Incomes (000's) 1938 | 1943 | Amount of income (£.000,000) 1938 | 1943 |
|---|---|---|---|---|
| Under 150 | (490) | (450) | 52.7 | 69.1 |
| 150–250 | 85.0 | 103.1 | 16.9 | 20.5 |
| 250–500 | 53.6 | 65.1 | 17.9 | 21.5 |
| 500–1,000 | 16.4 | 20.9 | 10.9 | 14.0 |
| 1,000–2,000 | 4.3 | 6.3 | 5.8 | 8.6 |
| 2,000–10,000 | 1.8 | 2.7 | 6.1 | 8.9 |
| 10,000 and over | 0.1 | 0.1 | 1.8 | 1.7 |
| Total | (650) | (650) | 112.1 | 144.3 |

Note: The total of the table falls short of the total of private incomes by agricultural incomes (£39,300,000 in 1938 and £84,600,000 in 1943) and other private income, such as undistributed company profits (£12,500,000 in 1938 and £23,800,000 in 1943).

Source: *Eire National Income and Expenditure* (P. No. 7,356, 1946). The figures in brackets are approximate private estimates.

**Sweden.**—In Sweden distribution of incomes was published for 1945 in a form comparable with previous years, and is given in Table VII. The total of the table falls short of the national income by a large sum. There had been during 1945–47 a shift of incomes from the lower toward the middle ranges above

Table VII.—*Distribution of Incomes in Sweden, 1945*

| Ranges of income Kr. | Number of incomes 000's | % | Amount of income Kr. 000,000 | % |
|---|---|---|---|---|
| 600– 1,000 | 230 | 7.7 | 187 | 1.5 |
| 1,000– 2,000 | 664 | 21.6 | 990 | 8.0 |
| 2,000– 4,000 | 1,099 | 35.7 | 3,252 | 26.3 |
| 4,000– 8,000 | 851 | 27.6 | 4,570 | 37.0 |
| 8,000–15,000 | 174 | 5.6 | 1,786 | 14.4 |
| 15,000–30,000 | 44 | 1.4 | 874 | 7.1 |
| 30,000 and over | 13 | 0.4 | 699 | 5.7 |
| TOTAL | 3,075 | 100.0 | 12,358 | 100.0 |

Note: The national income exceeded the total shown here by about 5,000,000,000 Kr.
Source: *Swedish Statistical Yearbook.*

kr.4,000, which may be explained by the general rise in prices.

**Australia.**—In Australia the official estimates of the national income similarly made the preparation of a distribution of incomes possible. The estimates published for 1938–39 and 1943–44, given in Table VIII, do not give the number of incomes in each range, but only the amount of income. As a rough guide it may be assumed that the relationship of numbers to amounts in any range is about the same as in the preceding tables.

Table VIII.—*Distribution of Incomes in Australia, 1938–39 and 1943–44*

| Ranges of income £ | Amount of income 1938–39 (£.000,000) | 1938–39 (%) | 1943–44 (£.000,000) | 1943–44 (%) |
|---|---|---|---|---|
| Under £150 | 142.4 | 21.3 | 66.2 | 7.4 |
| 150–250 | 163.7 | 24.5 | 102.4 | 11.5 |
| 250–500 | 207.1 | 31.0 | 407.8 | 45.9 |
| 500–1,000 | 69.5 | 10.4 | 159.7 | 18.0 |
| 1,000–2,000 | 38.8 | 5.8 | 74.3 | 8.4 |
| 2,000 and over | 46.5 | 7.0 | 78.6 | 8.8 |
| Total | 668.0 | 100.0 | 889.0 | 100.0 |

Note: The total of the table falls short of the total of private incomes by £159,000,000 in 1938–39 and £429,000,000 in 1943–44, including pensions, pay of the armed forces and undistributed company profits, etc.

Source: *Australia National Income Estimates 1938–39 to 1945–46* (F. 6561, 1946).

(*See* also BUDGET, NATIONAL.) (T. BAR.)

**Weather:** *see* METEOROLOGY.

## Wedemeyer, Albert Coady

(1897– ), U.S. army officer. was born on July 9 in Omaha, Neb. A graduate of the U.S. Military academy at West Point, N.Y., 1918, he was commissioned a 2nd lieutenant in the army and advanced through the grades to the rank of lieutenant general in Jan. 1945.

He was graduated in 1936 from the Command and General Staff school at Fort Leavenworth, Kan., attended the Kriegs (war) Akademie in Berlin from 1936 to 1938 and was on the U.S. war department's general staff from 1941 to 1943.

Wedemeyer was dispatched to the Southeast Asia theatre in 1943 where, in October, he was appointed deputy chief of staff to Adm. Lord Louis Mountbatten, Allied theatre commander. After Gen. Joseph W. Stilwell's removal from China on Oct. 27, 1944, Wedemeyer was given command of U.S. forces there and was named chief of staff of the China theatre.

Nearly two years after the end of World War II, Wedemeyer was dispatched to China and Korea by Pres. Harry S. Truman (July 1947) to make "an appraisal of the over-all situation" there. On completing his four-week tour of duty, Wedemeyer severely criticized the "greed and incompetence" in Chiang Kai-shek's government in a statement issued in Nanking, Aug. 24. However, in his appearance Dec. 17 before the senate appropriations committee, Wedemeyer urged all-out aid to Chiang Kai-shek in his fight against Chinese communists, declaring that more important than Chiang's "benevolent despotism" was the fact that "the man has fought communism all his life."

Earlier (Oct. 27, 1947), the army department announced that Wedemeyer would become director of plans and operations in the army general staff.

## Wellesley College.

A four-year liberal arts college for women, founded in 1870 by Henry Fowle Durant and located in Wellesley, Mass. The 1947 enrolment was the largest in the history of the college. Pre-eminently for candidates for the B.A. degree, Wellesley offers also the degrees of M.A., M.A. in education, M.S. and a certificate in hygiene and physical education.

Convinced that tax-exempt institutions are socially obligated to serve their communities as directly and continuously as possible, the trustees of Wellesley college made available the facilities of the college for summer educational ventures related to but not identical with the winter program of an undergraduate liberal arts college for women.

The summer of 1947 marked the second summer for the Institute for Foreign Students. This institute was established to orient 42 men and women from 24 countries to North American college life and community living and to help them acquire a greater comprehension of the English language. It was unusual in its attempt to teach students with 15 different language backgrounds, who were registered for entrance to 24 different colleges or universities.

The summer of 1947 also saw the inauguration of the Wellesley summer theatre and school. Five productions were presented by students of the theatre with a professional staff of actors and a star for each production. Plans were made to continue the Wellesley summer theatre and school in 1948.

The year 1947 was the fourth year for Wellesley's summer internship program, sponsored by the department of political science to enable qualified students to gain first-hand knowledge about the work of the federal government. Ten students spent six weeks of the summer working as interns in the offices of senators, congressmen, federal agencies and the Democratic and Republican national committees.

The Anne L. Page Memorial school, for children from three through eight years of age, is completely maintained by the college and serves as a centre for child study, observation and participation for students from all departments of the college.

The organization of the 75th anniversary fund campaign was a major activity of all the administrative officers of the college. It was hoped that $7,500,000 would be raised by June 1950 for faculty salaries and student scholarships and the construction of a new dormitory and library.

(For statistics of endowment, enrolment, faculty, library volumes, etc., *see* UNIVERSITIES AND COLLEGES.) (M. M. HN.)

**West Africa, British:** *see* BRITISH WEST AFRICA.

**Western Samoa:** *see* NEW ZEALAND, DOMINION OF; PACIFIC ISLANDS UNDER TRUSTEESHIP; TRUSTEE TERRITORIES.

## West Indies.

An archipelago between Florida and the South American coast opposite the mouth of the Orinoco river. The West Indies include: the Greater Antilles (in order of size, Cuba, Hispaniola or Haiti, Jamaica and Puerto Rico); the Lesser Antilles (grouped generally into the Leeward Islands, to the north, and the Windward Islands, to the south) between Puerto Rico and the Venezuelan coast; the Bahama group northeast of Cuba; and certain more distant islands, including Curaçao and Aruba near the mouth of Lake Maracaibo in Venezuela. The whole West Indies group is less commonly known as the Antilles. The land area is approximately 92,000 sq.mi. The population is about 14,883,000 (this represents the total of the latest figures for each unit, which are not all for the same year), and in some of the islands has a very high density, *e.g.*, in Barbados where there are almost 1,200 people per sq.mi. The racial distribution is approximately 75% white and 25% Negro and mulatto in Cuba and Puerto Rico, and from 80% to 100% Negro and mulatto elsewhere, except that in Trinidad about 40% are of East Indian origin. Roman Catholicism is the predominant religion except in Trinidad and a few other places; a considerable practice of African-inspired voodooism still prevails in Haiti. Languages include Spanish, English, French and Dutch, in addition to various patois largely of African origin but influenced also by word importations from Portuguese and many other sources. Politically, the West Indies include the three independent republics of Cuba, Haiti and the Dominican Republic, two United States territories and six British, one Dutch and two French colonies. In addition to prewar bases, the West Indies are the location of five U.S. naval bases, the sites for which were obtained from Great Britain by lease in 1940.

**History.**—The chief general developments in 1947 affecting the archipelago as a whole revolved around the continuing activity of the Caribbean commission. This agency was an outgrowth of the Anglo-American Caribbean commission established in 1942 to concern itself with the economic and social problems of British and United States possessions in the Caribbean area. The structure of and participation in the commission were broadened in 1945 to include representatives of France and the Netherlands for their respective colonies in the Caribbean. The second West Indian conference, held in the U.S. Virgin Islands in February and March of 1946, considerably broadened and stimulated the work of the commission and its activities continued to expand during 1947. It was engaged especially in studies of food supply and migration of agricultural workers from one unit to another. The commission also undertook a study during 1947 of the feasibility of establishing a schooner pool to facilitate small-scale interisland shipping services. The staff of the commission was altered by the addition of a larger number of persons from the West Indian islands themselves. Another feature of the year was the increased interest displayed in the activities of the Caribbean commission by the independent republics.

**Trade and Communications.**—West Indian economy is based primarily upon export of agricultural staples, of which sugar is by far the most important. The principal exceptions are banana production in some of the islands, petroleum and asphalt production in Trinidad, and oil refining in Aruba and Curaçao where two of the world's largest refineries operate, chiefly on the basis of oil imported from Venezuela. Many of the islands have other mineral resources of greater or less potential value, though these are little developed. The Cuban sugar crop reached a record figure in 1947 and another large production was anticipated for 1948.

The largest mileage, both of railways and highways, is found in Cuba. Other islands are, on the whole, poorly served with surface transportation arteries. Despite the closeness of the islands, interisland transportation is chronically difficult and increasing dependence is placed for passenger traffic on the air lines, of which the most important are the British West Indian Airways, Pan American World Airways and its affiliated companies, and K.L.M. (Royal Dutch Airlines).

**Agriculture.**—West Indian agriculture as a whole experienced a reasonably prosperous year in 1947, although local production of different crops was adversely affected in different islands by a wide variety of factors. Political and economic unrest in some of the islands also had an unfavourable reaction on agricultural production. (*See* also Bahamas; Barbados; Cuba; Curaçao; Dominican Republic; French Overseas Territories; Haiti; Jamaica; Leeward Islands; Puerto Rico; Trinidad; Virgin Islands; Windward Islands.)

Bibliography.—*West Indies Year Book* (1947); Carlos E. Castañeda, *Lands of Middle America* (1947); Pan American Union, *Bulletin* (Washington, monthly); Thomas S. Simey, *Welfare and Planning in the West Indies* (1947); *South American Handbook* (1947); Fernando Ortiz, *Cuban Counterpoint: Sugar and Tobacco* (1947); *Foreign Commerce Weekly* (Washington). (R. H. Fn.)

**West Indies, British:** *see* Bahamas; Barbados; Jamaica; Leeward Islands; Trinidad; Windward Islands.

**West Virginia.** The 35th state in the union was conditionally admitted on Dec. 31, 1862, and proclaimed a separate state on April 20, 1863, effective 60 days later. It has an area of 24,282 sq.mi., of which 148 sq.mi. are water surface. The population (1940) was 1,901,974, of which 1,742,320 were white and 41,782 were foreign born. The urban residents numbered 534,292 or 28.1% of the total population. Charleston (pop. 67,914) is the capital. Other cities, in the order of size, are: Huntington (78,836), Wheeling (61,099), Clarksburg (30,579), Parkersburg (30,103), Fairmont (23,105) and Bluefield (20,641).

**History.**—The chief state officers in 1947 were: governor, Clarence W. Meadows; secretary of state, William S. O'Brien; treasurer, R. E. Talbott; auditor, Edgar B. Sims; attorney general, Ira J. Parthlow; state superintendent of free schools, W. W. Trent. In the 1946 general election a registered Democratic majority of 178,000 was all but wiped out at the polls. Harley M. Kilgore (D.) was re-elected to the U.S. senate over Thomas B. Sweeney (R.) by about 3,500 votes, and Frank C. Haymond (D.) was elected by about the same majority to the state supreme court of appeals to succeed Judge H. H. Rose, deceased. Representatives in congress, elected in Nov. 1946, were: First district, Francis J. Love (R.); second district, Melvin C. Snyder (R.); third district, E. G. Rohrbaugh (R.); fourth district, Hubert S. Ellis (R.); fifth district, John Kee (D.); sixth district, Dr. E. H. Hedrick (D.).

**Education.**—For the year 1946–47 the total pupil enrolment (net) in the 4,197 state elementary schools was 287,360. In the 378 state high schools it was 129,322. There were 10,106 elementary and 5,158 high school teachers. The total state appropriation for elementary and secondary education was $21,364,029. The state supported nine teacher-training colleges which in the first semester had a total student enrolment of 8,388 and teaching staff of 340. It also supported the university (Morgantown), West Virginia State college (Negro, Institute), West Virginia Institute of Technology (Montgomery), and Potomac State school (Keyser, a junior college under control of the university).

**Social Insurance and Assistance, Public Welfare and Related Programs.**—For the year ending June 30, 1947, the total expenditure for old-age assistance was $4,177,345; for the blind, $207,693; for dependent children, $3.561,737. The total cost including administration was $8,386,184.66. The total general relief fund was $1,490,284.87. Eight correctional institutions were largely self-sustaining but they cost the state in excess of $200,000.

**Communications.**—On Jan. 1, 1947, the state contained about 3,350 mi. of steam railway, or 6,677 mi. including double tracks and sidings. There were 8 mi. of electric railways. There were 17,601 mi. of improved highways (15,585 mi. hard surfaced), and a road system aggregating 33,186 mi., both primary and secondary. There were 294,500 telephones (Bell, 260,000 and connecting lines, 31,000), not including 3,500 local nonconnecting phones.

**Banking and Finance.**—On June 30, 1947, the total deposits of the 105 state banks and trust companies were $389,488,849.48; the total for the 76 national banks was $472,471,891.80; resources of 22 federal savings and loan associations were $32,227,152.31; resources of 19 active building and loan associations, $10,426,462.66; and resources of 23 loan companies were $14,244,052.92. State receipts for 1946–47 were $190,317,423.70; disbursements, $177,315,633.36; balance, June 30, 1947, $44,571,667.84. On June 30, 1946, the total state funded indebtedness was $63,995,000, less a sinking fund of $5,203,853.50, leaving a net indebtedness of $58,791,146.50.

**Agriculture.**—The total cash income from farm crops and livestock in 1946 was $110,191,000; income from government payments was $4,340,000. The number of farms in 1945 was 97,600 with a total acreage of 8,741,017, valued at $341,000,000.

*Principal Agricultural Products of West Virginia, 1946*

| | Yield, 1946 | Value, 1946 |
|---|---|---|
| Corn, bu. | 10,200,000 | $18,360,000 |
| Wheat, bu. | 1,501,000 | 3,107,000 |
| Oats, bu. | 1,792,000 | 1,846,000 |
| Buckwheat, bu. | 133,000 | 205,000 |
| Hay (all), tons | 1,060,000 | 21,412,000 |
| Apples (commercial), bu. | 4,550,000 | 10,692,000 |
| Potatoes (Irish), bu. | 2,970,000 | 5,346,000 |
| Barley, bu. | 203,000 | 311,000 |

**Industry.**—In 1945–46 industry and business employed 606,500 persons who earned $1,300,000,000 in a total estimated production valued in excess of $1,656,000,000. In the order of the number of persons employed, the largest industrial groups, together with the total sums paid each were: coal mining and coke making 115,021—$380,661,000; iron, steel and metals 41,753—$109,047,000; chemical and allied products 20,179—$64,522,000; glass and glassware 19,792—$49,114,000; lumber and wood products 18,210—$29,631,000; clothing and textiles 14,044—$28,444,000; clay, stone, etc., 15,426—$34,188,000; automobiles and trucks 16,530—$34,847,000; petroleum and its products 11,002—$24,297,000; construction (not buildings) 12,335—$27,387,000; and public utilities 8,600—$19,350,000.

**Mineral Production.**—The production of crude oil for 1946 was 2,940,000 bbl.; in 1945 the natural gas production was 200,000,000,000 cu.ft.; coal (1945) 151,909,714 short tons; and coke (bee-hive and by-products, 1945) 2,738,422 short tons. The total value of mineral production (1945) was $597,377,000.

Bibliography.—*West Virginia Bluebook* (1946) and various state official documental reports. (C. H. A.)

**Whaling:** *see* Fisheries.

**Wheat.** The U.S. wheat crop broke all records again in 1947; it was not only far above the average but more than 20% above the crop of 1946. Large acreage and heavy yield, the result of favourable weather from seedtime to harvest, produced the record outturn.

The crop was estimated at 1,364,919,000 bu. compared with a crop of 1,153,046,000 bu. in 1946, 1,108,224,000 bu. in 1945 and 1,060,111,000 bu. in 1944. The 10-year average 1936–45 was 890,306,000 bu. Acreage harvested was 74,186,000, 10% above the 67,075,000 ac. of 1946. Only 3,152,000 ac. were not harvested in 1947 because of good growth in all areas. About 2,000,000 ac. of "volunteer" wheat, which grew from seed left in the soil from previous crops, were included in the 1947 crop.

The winter wheat crop of 1947 amounted to 1,067,970,000 bu. and spring seeded wheat 296,949,000 bu. This was the first 1,000,000,000 bu. winter wheat crop in U.S. history; the acreage was 12% above 1946 and the average yield 19.5 bu. per acre, compared with an average of 16.1 bu. per acre in the 10 years 1936–45. High yields in the big wheat states were: Kansas 20 bu.; Texas 18 bu.; Oklahoma 15.5 bu.; Colorado 24 bu. and Washington 26 bu.

The spring wheat crop was made up of 43,983,000 bu. of durum, grown almost entirely in the Dakotas and Minnesota, and 286,365,000 bu. of other spring wheats grown in 19 states. The durum yield was 15 bu. and other spring wheats 17.2 bu. per acre. North Dakota led in the production of spring wheat with 146,038,000 bu. including durum.

Production of wheat was greater in all classes in 1947, with hard red winter increasing 31% over 1946. The total crop included 761,894,000 bu. of hard red winter and 228,138,000 bu. of hard red spring; 241,913,000 bu. of soft red winter; 43,600,000 bu. of durum and 131,216,000 bu. of white wheat, winter and spring.

From 1941 the U.S. wheat supply had exceeded 1,200,000,000 bu. Stocks in carry over were large in 1941 and 1942, amounting to more than 600,000,000 bu., more than equal to the amount used for food in the United States. Use of wheat for domestic food, feed and alcohol, however, increased from about 700,000,000 bu. in 1941 to 1,216,000,000 bu. in 1943 and reduced the carry over rapidly to 316,700,000 bu. in the latter year. Exports began to increase in 1943 and were up to about 400,000,000 bu. in 1946 and an estimated 450,000,000 bu. in 1947–48. The carry over had dropped to 83,400,000 bu. in 1946 and was only 184,100,000 bu. in 1947. Domestic uses declined to 927,000,000 bu. in 1947 with restrictions on industrial uses, reduced feeding to livestock and the voluntary wheat-saving campaign. In December the secretary of agriculture estimated that about 450,000,000 bu. of the 1947 supply would be exported, leaving 957,000,000 bu. for use as food, feed, seed and carry over. The total amount of wheat allocated for export was estimated at 209,000,000 bu. by Dec. 1, 1947. Had U.S. production not reached remarkable proportions the world shortage of bread grain would have been vastly more serious.

Table I.—*U.S. Wheat Production, 1947, 1946 and 10-yr. Average, 1936–45*

(In thousands of bushels)

| State | 1947 | 1946 | 10-yr. Average | State | 1947 | 1946 | 10-yr. Average |
|---|---|---|---|---|---|---|---|
| Kansas | 286,702 | 212,977 | 158,517 | New Mexico | 9,420 | 2,896 | 3,047 |
| North Dakota | 146,038 | 139,824 | 106,205 | New York | 9,272 | 5,648 | 7,270 |
| Texas | 124,270 | 62,916 | 41,287 | Virginia | 8,522 | 8,344 | 7,976 |
| Oklahoma | 104,734 | 88,262 | 57,618 | North Carolina | 8,449 | 6,307 | 6,456 |
| Nebraska | 90,300 | 90,677 | 50,328 | Utah | 8,082 | 6,981 | 5,812 |
| Washington | 64,750 | 77,965 | 53,182 | Maryland | 7,770 | 7,320 | 7,389 |
| Montana | 64,325 | 62,888 | 54,564 | Wyoming | 6,130 | 6,232 | 3,290 |
| Colorado | 59,052 | 37,080 | 20,070 | Tennessee | 5,190 | 3,870 | 4,981 |
| South Dakota | 53,628 | 53,197 | 28,815 | Kentucky | 5,184 | 4,158 | 6,246 |
| Ohio | 49,028 | 48,522 | 42,154 | South Carolina | 4,356 | 2,706 | 2,612 |
| Idaho | 37,935 | 34,846 | 27,297 | Iowa | 3,252 | 4,335 | 6,060 |
| Indiana | 35,811 | 29,396 | 27,229 | Georgia | 3,240 | 2,093 | 2,049 |
| Michigan | 29,800 | 22,896 | 18,242 | Wisconsin | 2,793 | 2,265 | 1,538 |
| Illinois | 28,524 | 19,361 | 31,458 | New Jersey | 1,875 | 1,550 | 1,245 |
| Missouri | 24,438 | 18,195 | 25,020 | West Virginia | 1,763 | 1,463 | 1,776 |
| Pennsylvania | 22,296 | 19,912 | 18,537 | Delaware | 1,407 | 1,216 | 1,298 |
| Oregon | 21,615 | 25,168 | 20,585 | Nevada | 612 | 545 | 442 |
| Minnesota | 20,633 | 27,080 | 24,536 | Mississippi | 460 | 198 | 226 |
| California | 12,028 | 12,597 | 12,942 | Arkansas | 372 | 420 | 485 |

The wheat situation at the end of 1947 was as follows: A small carry over of 84,000,000 bu., a new crop of 1,406,000,000 bu., an export goal of 400,000,000 to 450,000,000 bu., restricted domestic consumption of about 925,000,000 bu.; and a carry over for July 1948 of about 100,000,000 bu. The wheat-saving campaign was expected to provide the quantity needed for export and reserve. These needs indicated the forces making for higher prices of wheat both in the U.S. and abroad.

During 1947 the price of wheat soared to the high peaks attained during and after World War I. At that time the supply of wheat was small and demand increased suddenly in contrast to World War II when the supply was large and the demand even larger. The price of wheat to growers was $1.92 per bushel average for the year ending July 1, 1947, the highest after 1919, when it was $2.16. In spite of the largest crop on record, prices advanced to $2.14 per bushel to growers in July, on to $2.43 in September and to $2.79 per bushel in December, the all-time record to that date. On the central markets prices broke all records, with No. 1 dark northern cash wheat selling at $3.30 at Minneapolis in November. The price of corn was also high and in September averaged $2.40 per bushel to growers, as compared with $2.43 for wheat. Rice was at the same general level and rye not far below. At no time in U.S. history had bread grains and feed grains ranged so high together.

Wheat prices remained above parity most of the time after early 1946, and by Nov. 1947 were 28% above parity of $2.14.

Public agitation over the high price of wheat led to an inquiry as to the amount and character of trading at the Chicago

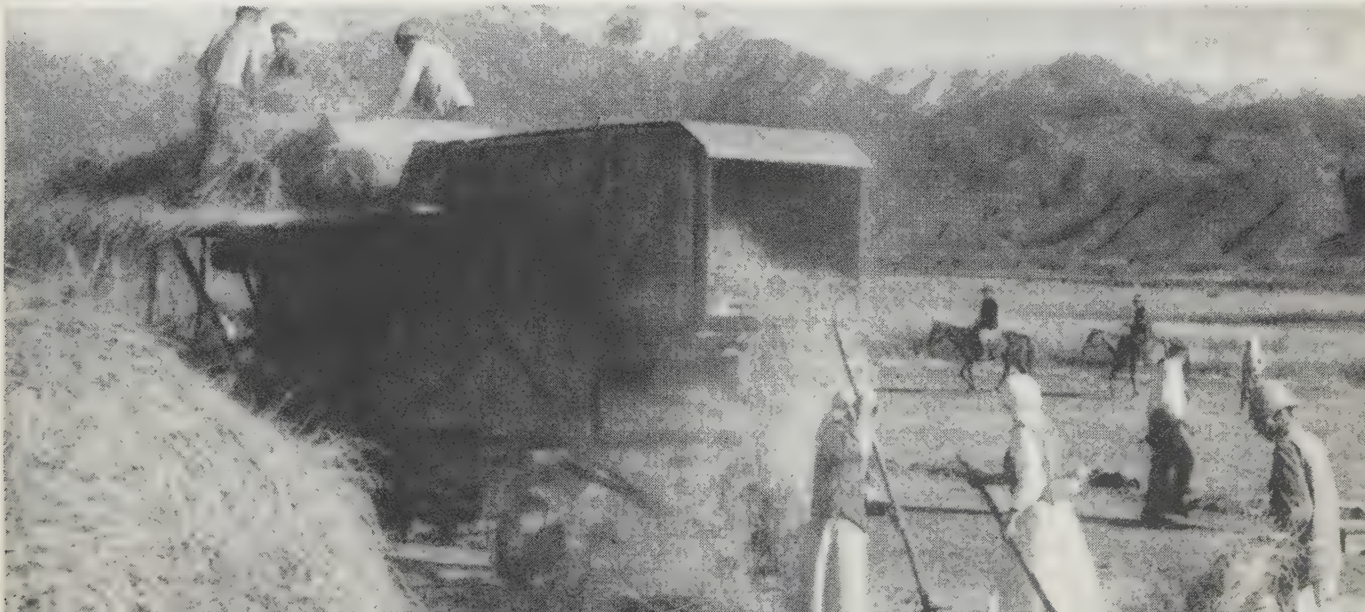

**THRESHING WHEAT** at a collective farm in the Kazakh S.S.R. where a bumper crop was harvested in 1947

Table II.—*World Wheat Production, Revised Estimates for 1947, 1946, 1945 and 1944 and Average 1935–39**

(In million bushels)

| | 1947 | 1946 | 1945 | 1944 | Average 1935–39 |
|---|---|---|---|---|---|
| United States | 1,364 | 1,153 | 1,108 | 1,060 | 758 |
| Canada | 341 | 413 | 305 | 416 | 312 |
| Mexico | 15 | 13 | 13 | 14 | 14 |
| Europe | 1,020 | 1,300 | 949 | 1,348 | 1,554 |
| Great Britain | 63 | 73 | 81 | 117 | 62 |
| North Africa | 130 | 126 | 77 | 96 | 127 |
| Union of South Africa | 16 | 15 | 10 | 11 | 16 |
| Asia | 1,490 | 1,548 | 1,430 | 1,560 | 1,442 |
| Argentina | 175 | 206 | 143 | 150 | 221 |
| Australia | 250 | 116 | 144 | 52 | 169 |
| U.S.S.R. | 875 | .... | .... | .... | .... |
| World Total | 5,775 | 5,735 | 3,570 | 4,010 | 4,040 |

*Revised estimates by the U.S. department of agriculture on basis of incomplete reports from several countries with adjustments for year of harvest.

board of trade. An analysis of the accounts on Sept. 17, 1947, showed that in a total of 3,827 accounts, there were: 456 hedging accounts; 846 farmers; 364 real estate men; 319 merchants; 308 housewives and 139 retired people and professional traders. The remainder included all classes of labourers, clerks, etc. These accounts were in the positions of about 45,000,000 bu. "long" and 35,000,000 bu. "short."

The world wheat crop of 1947 was estimated in December at 5,775,000,000 bu., compared with 5,735,000,000 bu. in 1946 and the prewar average of 4,040,000,000 bu. in 1935–39. (*See* Table II.) North American production was increased by the large U.S. crop, which more than offset the reduction of about 70,000,000 bu. in Canada. Severe drought in western Canada was responsible for the reduced crop there.

Production in Europe was estimated at 17% below 1946 and 32% below prewar levels. The severe winter cut the crop in France and droughts reduced yields in Italy and Spain. Eire was the only country showing a substantial increase. The European crop was more than 200,000,000 bu. below 1946 and 400,000,000 bu. below prewar averages. The United Kingdom crop was about 10% less than that of 1946 and a little above the prewar average. The Danube valley crops were reduced in acreage.

The Soviet Union crop was estimated to be larger, because of expanded acreage and better yields. While reports from behind the "iron curtain" were conflicting, enough was known to justify the estimate of somewhat less than the prewar output which was frequently more than 1,000,000,000 bu. The Chinese crop was reported as 8% above that of 1946 and above the prewar level. Conditions were unfavourable in India, and the crop was reported to be the smallest after 1928. Turkey's crop was about average.

Early estimates of prospects in Argentina showed a 13% reduction in acreage which would indicate a below-average crop. North Africa had crops comparable with those of the 1946 level and below domestic needs. Australia's outlook was good for a crop of about 250,000,000 bu., which would be above prewar levels.

World exports in the crop year ending July 1947 amounted to about 758,000,000 bu., compared with 560,000,000 bu. in prewar years. This export total was made up as follows: United States, 400,000,000 bu.; Canada, 229,000,000 bu.; Argentina, 70,000,000 bu.; Australia, 49,000,000 bu.; other countries, about 10,000,000 bu. (*See* also Flour.) (J. C. Ms.)

**Wholesale Trade:** *see* Business Review.

## Wilderness Preservation.

The national policy of preserving dedicated remnants of wilderness in the United States prevailed in 1947 over specific threats from various enterprises in various localities, and the conservation movement to support this policy appeared stronger at the close of the year than ever before. Success in combating many of the exploitation enterprises was, however, not final, and several conflicts were unresolved.

The most dramatic demonstration of public concern with wilderness preservation resulted from a proposal to construct a road, hotel-resort, parking area and mechanical ski lift in the San Gorgonio Primitive area—a dedicated tract of 35,365 ac. in the San Bernardino National forest in southern California. Advocated by the California Chamber of Commerce, the California Ski association and the National Ski association (though opposed by the national association's ski mountaineering committee), the proposal had in 1946 received the tentative endorsement of the U.S. forest service, and a public hearing had been announced for Feb. 19, 1947. Early in the year the proposal seemed certain of adoption, but as studies of both skiing and wilderness opportunities in the region were made and publicized, unexpected demands for preservation of the primitive area arose both locally and nationally. Thousands of letters, the forest service reported, were received from conservation organizations and from individuals in all parts of the country. Summing up a case for preservation, *The Living Wilderness* pointed out that "southern California's demands for skiing can certainly be reasonably well met without sacrificing this unique wilderness." The magazine emphasized that the many skiers already using the area would lose what all southern Californians would lose—"the choice of finding their outdoor recreation in a wilderness if they so wish"—and declared:

> If there were abundant opportunities for wilderness recreation in this region it might then be valid to balance 100,000 skiers against 10,000 wilderness users at a specific site and conclude that skiing facilities would be for the good of the greater number. But when we are considering a precious wilderness remnant, we are in fact balancing 100,000 skiers against the entire population, for we are threatening to deprive everybody forever of a choice that is the right of every American. And we are threatening to do this for a part of the population that has elsewhere reasonably good opportunities, and still better prospects, for the sport that they most enjoy. (*The Living Wilderness,* The Wilderness Society, Washington 9, D.C., 1947.)

The hearing, which required use of the San Bernardino municipal auditorium for two days and an intervening night session, revealed also protests from water users who valued wilderness preservation for watershed protection and from scientists who pointed out that the area included unique forms of plant life. As a result of the hearing and an intensive study of the proposal, the forest service in June concluded that the area had "higher public value as a wilderness and a watershed than as a downhill skiing area" and resolved the controversy by eliminating from the primitive area only some 1,400 ac. to permit road construction that would make the area readily accessible for wilderness skiing without affecting the rest of it.

This test case became celebrated among conservationists throughout the U.S., and the impetus and encouragement given the wilderness preservation movement by the decision were such as to suggest that it would come to have historic significance. This decision, with its related debate in which basic principles were dramatically publicized, was without doubt the year's outstanding event in wilderness preservation.

Notable also were the decision of Secretary of the Interior Julius A. Krug, announced on Aug. 15, to withhold leasing privileges that had been applied for oil and gas prospecting in the Teton Wilderness area, Wyoming, and the announcement by Gov. Thomas E. Dewey of New York on Nov. 13 of abandonment of the Higley Mountain dam project, which had been strenuously opposed because it would destroy the famous Moose river flats in the Adirondack wilderness, including one of the best deeryarding areas in the east.

Controversies which remained unresolved but in which preservationists had preliminary success during 1947 involved a proposal of lumber interests to remove large areas of virgin rainforest wilderness from Olympic National park in Washington, a move to abolish the Jackson Hole National monument in

Wyoming backed by certain cattle interests and by local enterprise concerned with prospects for commercial developments on lands within the monument and a project to construct an irrigation reservoir which would destroy Lake Solitude, the outstanding feature of the Cloud Peak Primitive area in the Big Horn National forest, Wyoming.

No dedicated wilderness area was lost from the national system during the year, and an invaluable area was added by establishment of the Everglades National park in Florida, dedicated by Pres. Harry S. Truman on Dec. 6. Progress was made toward establishing the proposed Quetico-Superior International Peace Memorial forest in the wilderness canoe country shared by the state of Minnesota and the Canadian province of Ontario. On Sept. 6 Pres. Truman restated the authority of the President's Quetico-Superior committee previously established by executive order and appointed Olaus J. Murie, director of the Wilderness society, to fill a vacancy on the committee and to serve as a member along with Charles S. Kelly, lawyer and conservationist of Chicago, Ill.; Ernest C. Oberholtzer of Ranier, Minn., president of the Quetico-Superior council; Regional Forester Jay H. Price of the U.S. forest service, Milwaukee, Wis.; and William Zimmerman, Jr., assistant commissioner of the U.S. office of Indian affairs. (H. Z.)

**Wildlife Conservation.** "Wildlife conservation"—according to a definition phrased by Harrison F. Lewis, superintendent of wildlife protection in Canada, at the annual meeting of the International Association of Game, Fish and Conservation Commissioners in Denver, Colo., on Sept. 8, 1947, "is the common term for the adjustment and development of the relationships between our species—mankind—and the large numbers of fellow-species that inhabit this same great globe with us. Its proper organization and application require the development and consideration of a philosophy whose ramifications and implications extend throughout all human affairs and down to the very foundations of life itself."

The further development and widened acceptance of this concept were highly significant in 1947.

As wildlife conservationists emerged rather completely from difficulties in their peacetime pursuit created by World War II, they faced a twofold basic problem. Land and water areas available to the wild species were increasingly threatened with curtailment by the human enterprise that had already appropriated so much of the continent. At the same time the numbers of sportsmen were increasing at a surprising rate, causing considerable concern for all the species that are hunted. It was apparent that preservation of wildlife habitat and control of hunting would both be dependent on effective public action based on a sense of the fundamental values involved.

The wildlife situation was in the main encouraging only as regards the prospects for intensified and more effective public interest. Smaller species that have made themselves at home around town and city dwellings and in rural farm areas, where they are prized for their song, their beauty and their protection of plantlife from insects, were abundant and in no apparent jeopardy. Deer in most of their habitat were in good numbers—in some places, where hunters are their only effective predators, even overabundant. Director Newton B. Drury of the national park service said: "The point has been reached in protection of wildlife in the national park areas where we can give quite general assurances that normal numbers of most species will be preserved." But throughout the North American continent most of the species that are hunted for sport and most of the fur animals and predators (other than coyotes) were present in small numbers, diminishing, and/or threatened.

The so-called big-game animals remained in the status described in 1946 as generally favourable, but in addition to increased tension over the status of the mountain sheep there was general concern over some prospects. Aeroplane travel to once remote regions, and threatened diminishing of the still remaining comparatively extensive wilderness areas available to these larger creatures led to frequent expressions of alarm.

Fur consumption in the U.S., already double the country's production, continued to increase. The fish and wildlife service reported that trappers in the face of this demand still took wild fur animals with an extravagant disregard for maintenance of breeding stocks. Surveys by the service resulted in estimates that about 2,700,000 trappers in the U.S. and Alaska (three-fourths of them farmers and farm boys) take in excess of 28,000,000 pieces annually and receive for them between $100,000,000 and $125,000,000.

An organization called Defenders of Furbearers and "devoted solely to eliminating as far as possible, by the use of humane traps, the torture suffered by millions of trapped furbearing animals every year, and to promoting, through education, the conservation of these animals" was established with headquarters at 1214 Sixteenth Street, N.W., Washington, D.C.

Among the birds that are hunted, the waterfowl continued to be most prominent in national interest. In fact, the still deepening waterfowl crisis was of international importance, the protection of these migratory birds being by treaty a joint concern of the U.S. with Canada and with Mexico. The fish and wildlife service, which conducts and correlates continent-wide and year-round investigations, reported that the continental population had continued its downward trend "at an alarming pace." An inventory of birds wintering in Canada, Alaska, coastal Latin-America, and the U.S. conducted in Jan. 1947, indicated an estimated total of only 54,000,000—a decrease of 26,000,000 from the 1946 estimate, more than 51,000,000 from the 1945 total, and a loss of more than 71,000,000 (more than 56%) from the 125,350,000 birds estimated in 1944. So drastic had the decline been that many, led by the National Audubon society and the American Nature association and even numerous sportsmen, advocated a prohibition of all waterfowl hunting. The regulations adopted for the hunting seasons that were allowed were drastic—so drastic that the Wildlife Management institute and others believed that the restrictions "should halt the decline." At the end of the year (and the shooting seasons) no official predictions were obtainable, but preparations had been made for another thorough inventory early in Jan. 1948.

The amazing increase in the numbers of hunters, which began while World War II was still being waged, continued. Sales of federal migratory-bird hunting stamps (the so-called "duck stamps" required of all wildfowlers over 16 years of age) totalled 2,016,819 in the fiscal year ended June 30, 1947—as compared with 1,725,505 the preceding year, 1,487,029 in 1945, and 1,169,352 in 1944. Not only wildfowlers but all hunters continued to increase in numbers. Total sales of hunting licences by the 48 states, which included all legal hunters, had not been summarized for 1947 by the end of the year, but a tabulation of sales during the year ended June 30, 1946, showed a total of 9,854,313 as compared with 8,194,296 in the preceding year. Indications, the fish and wildlife service reported, pointed to a continuation of the pronounced upward trend during 1947, and it seemed safe to speculate that there were in the U.S. in 1947 more than 10,000,000 licensed hunters.

With such increases in numbers of hunters, in the face of declining or threatened wildlife populations, wildlife management officials were especially encouraged by great advances made during the year in connection with the Federal Aid to Wildlife Restoration program. Financed from the 11% federal excise tax on firearms, shells and cartridges, this program as in previous years provided individual states with 75% of the costs of approved projects to conduct wildlife studies and to acquire, restore, develop and maintain land and water areas devoted to wildlife. A total of more than $2,000,000 was made available to 47 states during the 1947 fiscal year, and for the fiscal year to end June 30, 1948, the full amount of the tax collected in the year ended June 30, 1946, was made available to the fish and wildlife service for apportionment to the states—a sum of $9,854,313, which if fully used would be increased by 33⅓% by participating states.

Outstanding event of the year was probably the 12th North American Wildlife conference sponsored by the Wildlife Management institute and held in San Antonio, Tex., Feb. 3–5 on the theme "Americans, Wildlife, and Their Land." Addresses by outstanding conservationists at general sessions and research reports by scientists at technical sessions were later published by the institute under the editorship of Ethel M. Quee as *Transactions of the Twelfth North American Wildlife Conference*—a 632-page volume constituting a remarkable representation of the current status of wildlife conservation and research. A notable feature of the book was an index covering not only this volume but also 18 earlier annual volumes in which were printed the proceedings of comparable conferences.

The principal source of wildlife information in the United States was the fish and wildlife service, U.S. department of the interior, Washington 25, D.C., which had available lists of federal publications and compilations—including a list of officials and organizations concerned with wildlife conservation and *Wildlife Review*, a periodical listing books, articles in journals and other publications and including critical notations. Leading private organizations were: American Forest association, publisher of *American Forests*, 919 Seventeenth Street, N.W., Washington 6, D.C.; American Nature association, publisher of *Nature Magazine*, 1214 Sixteenth Street, N.W., Washington 6, D.C.; Izaak Walton League of America, publisher of *Outdoor America*, 31 N. State Street, Chicago 2, Ill.; National Audubon society, publisher of *Audubon Magazine*, 1006 Fifth Avenue, New York 28, N.Y.; National Parks association, publisher of *National Parks Magazine*, 1212 Sixteenth Street, N.W., Washington 6, D.C.; National Wildlife federation, publisher of *Conservation News*, 3308 Fourteenth Street, N.W., Washington 10, D.C.; the Wilderness society, publisher of *The Living Wilderness*, 1840 Mintwood Place, N.W., Washington 9, D.C.; and the Wildlife Management institute, 822 Investment Bldg., Washington 5, D.C., sponsor of research projects, special investigations, annual North American wildlife conferences, and monographs. Scientific periodicals were notably *The Journal of Wildlife Management*, *The Journal of Mammalogy*, and *The Auk: A Quarterly Journal of Ornithology*—organs respectively of the Wildlife society, the American society of Mammalogists, and the American Ornithologists' union. (H. Z.)

**Canada.**—Most important event in an active year was the establishment of the dominion wildlife service, under the department of mines and resources. The new unit was empowered to administer the Migratory Birds' Convention act, the Northwest Game act and the Fur Export ordinance of the Northwest Territories. It was made responsible for the conservation of game and fur resources and other wild creatures in the Northwest Territories, the management of animals and birds and fish in the national parks of Canada, the handling of international problems relating to wildlife resources.

Early in April the Canadian parliament gave its approval to the establishment in Canada of a National Wildlife week to begin each year on April 10, the birthdate of Jack Miner, famed Kingsville, Ont., wildlife conservationist.

During the year U.S. biologists tagged more than 6,000 ducks and geese in Canada. At Lake Newell, Alberta, some of the banding was done for the first time with the aid of an aeroplane, which herded flocks of ducks and geese toward traps. Records were made of the age and sex of birds, as well as their numbers, in order to obtain later information on population survivals, hunting pressures, natural sex ratios and the flyways of individual species.

Ducks Unlimited (Canada) announced the banding of 4,347 waterfowl during 1947 in Manitoba, Saskatchewan and Alberta. At the end of 1947, the engineering department of D.U. reported that 6 projects started in 1946 were completed in 1947, 23 new projects built and 12 projects were still under construction. (C. Cy.)

**Great Britain and Europe.**—The British wildlife conservation special committee presented a report in July in connection with the national parks scheme that had been planned during the year (*see* National Parks and Monuments). The report urged the need for the preservation of scenic beauty, for nature reserves within the national parks as well as natural conservation outside them, and for wider government responsibility, a constructive scientific policy and educational facilities in the matter. It emphasized the importance of separate management for the nature reserves in the national parks and recommended preservation of tracts of land as conservation areas.

The International Office for the Protection of Nature was reorganized, with its headquarters in Amsterdam. The Society for the Preservation of the European Bison was in process of revival. In the summer an International Conference for the Protection of Nature was held at Brunnen under Swiss auspices. The promoters contemplated the formation of an international union of world-wide scope, but it was decided to invite U.N.E.S.C.O. to consider whether it could not undertake the pioneer work. Among the interesting conclusions of the conference was the recognition of the need for scientific research relating to the protection of nature and for the spread of public knowledge of the subject, and the particular importance of educating children in the study and appreciation of nature. The conference appeared to accept the view that the protection of nature was not merely a cultural question, but might also closely affect the welfare and even the existence of mankind. Somewhat ironically, on the conclusion of their discussions, the members of the conference were taken to visit the popular Swiss national park, only to learn that it was threatened with destruction in favour of a hydroelectric scheme. It seemed probable, however, that popular reaction against this project would be widespread.

Other evidences of revived interest in the protection of wildlife were the reversal of the decision—taken on financial grounds—to dismiss the staff of gamekeepers in the Gran Paradiso national park in Italy, where, in particular, chamois and ibex are protected; the establishment in Holland of a youth organization, already some 4,000 strong, with the protection of nature as one of its principal aims; and, lastly, a very well attended meeting in London of the International Committee for Bird Protection.

**Africa.**—Measures for the destruction of wildlife in Africa showed little, if any, sign of abatement in 1947, but representations made by the Society for the Preservation of the Fauna of the Empire to the colonial secretary were partly responsible for the holding of a conference by the governors of the east African colonies to discuss the obligations to protect wildlife undertaken on their behalf by the British government, and how those obligations not hitherto implemented should be honoured. The society, meanwhile, had sent out their own representative to study conditions in the different colonies and to take part in the conference. The conference report was not published before the end of the year.

The Fauna society feared that the example of Southern Rhodesia, whose government had pinned its faith on wholesale destruction of wild animals as the only method of controlling the tsetse fly, would be followed in other parts of Africa. The tsetse fly, which lives on blood, is well known as a vehicle of the trypanosomes which, when introduced into the blood stream of men or cattle, cause the diseases known in men as sleeping sickness and in cattle as *ngana*. The game animals, or some of them, are immune hosts of the trypanosomes. It was argued that by getting rid of the game, the source of supply and, at the same time, the vehicle of transmission to susceptible men or cattle would be eliminated. The society questioned whether the destruction of game would eliminate the fly, whether other means could not be found of getting rid of it, and whether the slaughter of the animals which provide the fly with its natural food might not make matters worse by dispersing it over wider areas and driving it to feed on men and cattle. The Fauna society further pointed out that the government had as recently as 1933 procured a convention for the protection of African wildlife, which the British colonies had failed to implement, and that, so far as the tsetse fly and its control were concerned, many material facts could only be clarified by widespread scientific field research.

There were more hopeful signs elsewhere during the year. The Wild Life Conservation Society of South Africa continued its outspoken propaganda. The Natal Society for the Preservation of Wild Life and Natural Resorts and the Nigerian Field society were again active; a movement was on foot in Nyasaland to organize a society with the same objects in view; and the *Institut des Parcs Nationaux du Congo Belge* and the French *Institut de l'Afrique Noire* continued their good work. (H. G. M.)

**Wilhelmina** (Wilhelmina Helena Pauline Maria of Orange-Nassau) (1880– ), queen of the Netherlands, daughter of William III, king of the Netherlands, and Queen Emma, was born on Aug. 31. She succeeded to the throne in 1890 under the regency of her mother, and was enthroned in 1898. In 1901 she married Henry, duke of Mecklenburg-Schwerin (d. 1934), and in 1909 Princess Juliana, heir to the throne, was born. When the Netherlands were invaded on May 10, 1940, the royal family with members of the government sought refuge in London. Queen Wilhelmina returned to the royal palace at The Hague in July 1945.

In Jan. 1947 the queen acted as personal host to Prince Gustav Adolf of Sweden on the occasion of his state visit to Holland. The U.S. deputation from Albany, N.Y., which had come to Holland in connection with Albany's adoption of the Dutch town of Nijmegen, was received by her at Soestdijk on March 28. On May 5 the queen was present at the commemoration ceremony at the Canadian cemetery at Groesbeek, and on May 30 she flew from Soestdijk to Beek to be present at a similar ceremony at the U.S. cemetery at Margraten. Later in the year Queen Wilhelmina paid a flying visit to the British royal family in Scotland. On June 16 she marked the importance of the "Benelux" union by receiving the Dutch-Belgian-Luxembourg interparliamentary commission, and on Sept. 17 she received Tjokordo Gde Rake Soekawati, president of the independent state of East Indonesia.

Because of ill health and the need of rest, the queen was relieved from all official duties by a bill presented to parliament and passed on Oct. 10, appointing Princess Juliana regent until Dec. 1; the queen then resumed her duties.

**Windward Islands.** The British Windward Islands (in the Caribbean sea) comprise the four islands of Dominica, St. Lucia, St. Vincent and Grenada—each ranking as a separate colony for purposes of internal administration—together with the smaller islands known as the Grenadines, which lie between St. Vincent and Grenada and are attached partly to the one island and partly to the other. Total area: 821 sq.mi.; total pop. (1946 census): 251,671 (Dominica 47,682; Grenada 72,374; St. Lucia 69,955; St. Vincent 61,660); the great majority of the inhabitants are Negroes: a few aboriginal Caribs still remain in St. Vincent and Dominica. St. George's is the headquarters of the governor of the Windward Islands as well as the capital of Grenada; it has a pop. (1946 census) of 5,774. Roseau (pop. 9,751) is the capital of Dominica, Castries (7,056) of St. Lucia and Kingstown (4,831) of St. Vincent. Each of the four islands retains its own institutions and is presided over by a resident administrator assisted by an executive council. There is a local legislative council, with an elective element, in all of them; but there is no central legislature for the Windward Islands as a whole, nor are there common laws, revenue or tariff unit. The governor, appointed by the British crown and assisted by a chief secretary for the Windward Islands, exercises general executive authority over the whole group. Governor: Sir Arthur Grimble (appointed 1942).

**History.**—The Windward Islands were among the territories represented at the conference held in Jamaica in Sept. 1947 to consider the question of closer union between the British colonies in the Caribbean arc. They were also concerned in the discussions held early in the year in St. Kitts (Leeward Islands) on the narrower issue of Leeward-Windward Islands amalgamation. Conclusions favourable to amalgamation were reached (*see* Leeward Islands). A grant of £14,319 was sanctioned in July 1947, under the Colonial Development and Welfare act, for the training of teachers in St. Lucia.

**Finance and Trade.**—The legal tender throughout the Windward Islands is British sterling and the gold coins of the United States. Revenue (1946): Dominica £200,000; Grenada £472,000; St. Lucia £385,000; St. Vincent £292,000; total £1,349,000. Expenditure: Dominica £263,000; Grenada £473,000; St. Lucia £370,000; St. Vincent £309,000; total £1,415,000. Total imports (1946): £1,721,000; exports £1,232,000. The resources of the islands are almost wholly agricultural. The principal product of Grenada is cocoa, that of St. Lucia sugar and that of St. Vincent arrowroot. Other products of importance are nutmegs (Grenada) and Sea Island cotton (St. Vincent). Apart from these commodities, exports from the various islands include mace, bananas, coconuts and essential oils. The St. Vincent arrowroot industry is of primary significance, the island being the principal source of world supply. (J. E. Sh.)

**Wines.** Wine production showed an average increase throughout the world in 1947. The quality in countries whose climate and methods of production allow annual variances was excellent and in some countries exceptional.

France maintained its position as largest producer of wines, although the yield was but 80% of the average crop prior to World War II. Champagne produced amounted to 7,000,000 gal. and, it was hoped, might rank high among the famous vintages. Burgundy and Rhône fared almost as well, with 87,000,000 gal. of remarkable wines high in alcohol. The Bordeaux area produced 73,000,000 gal. of fine wines, particularly white, of which there was 31,000,000 gal., a larger proportion than usual.

BARREL-MAKERS' exhibit at the wine fair which was opened in Macon, France, by Premier Paul Ramadier (left, carrying papers) during May 1947

*World Production of Wine, 1946 and 1947*

Millions of gallons

| Country | 1947 | 1946 | Average | | 1947 Quality |
|---|---|---|---|---|---|
| Algeria | 264 | 237 | 500 | | Excellent |
| Argentina | 256 | 234 | 200 | | No variation |
| Australia | 36 | 30 | 20 | (Prewar) | Good |
| Austria | 17 | 28 | | | |
| Brazil | * | 20.6 | | | |
| Bulgaria | 48 | 42 | | | |
| Chile | 84.5 | 93 | | | No variation |
| Czechoslovakia | 6.6 | 10.8 | | | |
| France | 1,100 | 910 | 1,342 | (1936-41) | Excellent |
| Germany | * | 50 | | | Fine |
| Greece | 52.8 | 68 | | | |
| Hungary | 52.8 | 100.5 | 100 | | |
| Italy | 875 | 905 | 935 | (1936-46) | Good |
| Luxembourg | 1.9 | 2.4 | | | |
| Morocco | 8.7 | 8.4 | | | |
| Palestine | 1.7 | 2.2 | 1.6 | | Best in last 5 yr. |
| Peru | * | 4.8 | | | |
| Portugal | 225 | 221 | 180 | (1936-42) | Average |
| Rumania | 156 | 139 | | | |
| Spain | 607 | 475 | | | Excellent |
| South Africa | 34.4 | 40.2 | 37.1 | (1936-46) | No variation |
| Switzerland | 22.2 | 19 | 15 | (10 yr.) | Outstanding |
| Tunisia | 14 | 12 | | | No variation |
| U.S.A. | 100 | 165 | 102.5 | (1940-45) | |
| Uruguay | * | 25 | | | |
| U.S.S.R. | * | 200 | | | |
| Yugoslavia | * | 97 | | | |
| Total | 3,965.6 | 3,742.5† | | | |

*Unknown. †1946 total does not include countries with * in 1947.

Italy reported a good year in quality and normal production, which reflected favourably on its competitive position in the world market. In Spain the Jerez district produced 20% more than in 1946, all wine of exceptional quality. Portugal produced an average crop Its port production, controlled to the world demand, was fixed at 4,200,000 gal. of superlative quality.

The U.S. produced an estimated 100.000,000 gal., about 60% of the previous year, one-quarter of which was unfortified wine and three-quarters fortified with brandy; 95% of the crop was from California.

(*See* also LIQUORS, ALCOHOLIC.) (J. WE.)

## Wisconsin.

One of the north-central states of the United States, Wisconsin, popularly called the "Badger state," entered the union as the 30th state in 1848. Area, 56,154 sq.mi. of which 1,439 sq.mi. are water. The population was estimated, as of July 1, 1947, at 3,283,000, an increase of 145,413 as against the federal census figures of 1940. The urban population in 1940 was 1,679,144 and the rural 1,458,443. Only 24,835 were nonwhite. Foreign-born whites numbered 288,774. Capital, Madison (pop. 1940, 67,447). Milwaukee is the largest city with a population of 587,472. Other large cities are Racine (67,195), Kenosha (48,765), Green Bay (46,235), La Crosse (42,707) and Sheboygan (40,638).

**History.**—The legislature, meeting in biennial session during 1947, passed the largest budget in the history of the state, $142,000,000 for the fiscal biennium 1947–49, including $19,000,000 for the state university. It provided a veterans' housing program of more than $8,000,000, to be financed by a special tax of $1 per gallon on whiskey. It prohibited strikes in public utilities, providing instead for compulsory arbitration. It increased state educational aids to a record $13,000,000. It added 1,000 mi. to the state highway system, authorized co-operatives to establish health and sickness plans for members. It gave the Rural Electrification administration co-operatives the right of eminent domain except for lands held by a private utility for power purposes. It defeated plans for the reapportionment of senate and assembly districts, but took an important forward step in state government by establishing a permanent interim legislative council.

The state officers in 1947 were all Republican. The death on March 12, 1947, of Walter S. Goodland, who at 83 had won reelection as the nation's oldest governor the previous fall, brought Oscar Rennebohm, Madison, to the executive mansion. The subsequent death of John Smith, 76-year-old state treasurer, created a vacancy to which Rennebohm named John Sonderegger on Aug. 19, 1947. As 1947 was not an election year, other state officers were the same as in 1946: F. R. Zimmerman, secretary of state; J. E. Martin, attorney-general; John Callahan, superintendent of public instruction. The chief justice of the state supreme court was Marvin B. Rosenberry.

OSCAR RENNEBOHM, who became acting governor of Wisconsin on March 13, 1947, following the death of Gov. Walter S. Goodland

Wisconsin would in 1948 observe its centennial of statehood. Plans for the celebration were being formulated by a special centennial committee headed by Dr. Ora Rice, Delavan.

**Education.**—There were 6,037 elementary schools, 457 secondary schools, 24 county normal schools and 9 teachers' colleges in 1945–46. Enrolment in the elementary schools totalled 342,437; in secondary schools it was 141,919 and in county normal schools 614. Elementary schools employed 13,889 teachers, while secondary schools had 6,328 and the county normal schools had 94. The teachers' colleges had 446 faculty members teaching 3,738 college and 2,148 training-school students. State aid for education in the fiscal year 1945–46 totalled $9,534,361. Total expenditures in all elementary and secondary public schools was $66,812,932.

**Social Insurance and Assistance, Public Welfare and Related Programs.**—The number of cases receiving public assistance as of June 1947 was as follows: general relief 4,879; old-age assistance 47,137; aid to dependent children 7,156; aid to the blind 1,278; totally and permanently disabled 439—a total of 53,128 households. Expenditures for public assistance in the year ending June 30, 1947, were as follows: general relief $2,637,995; old-age assistance $21,281,391; aid to dependent children $6,371,247; aid to the blind $573,648; totally and permanently disabled $247,207—making a grand total of $31,111,488. Civilian unemployment benefit payments in 1946 were $7,771,329 as compared with $4,264,654 in 1945 and $1,249,692 in 1944. The contributions for 1946 totalled $7,590,280 as compared with $27,575,988 for 1945 and $42,081,693 for 1944.

Wisconsin's 13 charitable, mental and correctional institutions during the year ended June 30, 1947, were operated at a cost of $7,714,172. The average daily population for June 1947 was 9,318.

**Communications.**—Public highways as of Jan. 1, 1947, totalled 93,188 mi. divided as follows: 84,781 (towns), 2,400 (villages) and 6,006 (cities). Expenditures by the highway commission for the fiscal year 1946–47 were $35,842,047, much of which was returned to municipalities as aids. The total railway mileage (steam and electric) as of Dec. 31, 1946, was 6,780.42, with 52.69 mi. of trolley-coach routes (trackless). Airports numbered 124. There were 768,120 telephones.

**Banking and Finance.**—At the end of 1946 there were 463 state and 95 national banks. Deposits in the state banks totalled $1,496,290,304; the assets were $1,587,368,028. National banks had deposits of $1,346,990,000 and assets of $1,427,724,000. The 524 credit unions (12 fewer than in 1945) listed assets of $20,659,988. Assets of the 114 building and loan associations totalled $155,658,756.

State receipts for the fiscal year ending June 30, 1947, were $138,459,327; disbursements $126,166,587. Taxes collected by the state and returned to local subdivisions totalled $40,395,454; agency collections returned to counties were $1,012,983; state aids amounted to $36,842,845. There was no state debt.

**Agriculture.**—The total acreage harvested in 1946 was 10,265,000. The gross farm income excluding government payments was estimated at $990,275,000, consisting of $134,942,000 from crops and $855,333,000 from livestock and its products, including milk. The year 1946 was a record crop year for Wisconsin. Diversified farming is the foundation on which Wisconsin agriculture is built, and the amount of land used for farming has increased steadily as the state's agriculture has developed.

**Manufacturing.**—The total value of Wisconsin manufactured products in 1939 was $1,604,507,356. Wages paid were $251,946,993. The number of wage earners was 200,897 (average for the year). Wisconsin, with an extremely diversified industry, ranked first in the manufacture of cheese,

Table I.—*Leading Agricultural Products of Wisconsin, 1947 and 1946*

| | 1947 (est.) | 1946 | Value, 1947 (est.) |
|---|---|---|---|
| Corn (bu.) | 105,840,000 | 111,980,000 | $248,724,000 |
| Oats (bu.) | 120,873,000 | 124,758,000 | 132,960,000 |
| Canning peas (lb.) | 288,020,000 | 306,220,000 | 11,967,000 |
| All tame hay (tons) | 6,796,000 | 6,094,000 | 127,983,000 |
| All clover and timothy (tons) | 4,222,000 | 3,713,000 | .... |
| Alfalfa (tons) | 2,263,000 | 1,517,000 | .... |

milk products, malt and canned peas at that time. Within the state, the most important industries in value of manufactured products were: motor vehicles, paper and paperboard mills and wholesale meat packing. In 1946 the estimated average number of wage earners in Wisconsin manufacturing establishments was 308,400, compared with 327,225 in 1945, while the estimated weekly pay rolls had decreased from $15,245,000 to $14,087,000 in the same period.

Table II.—*Value of Mineral Products of Wisconsin, 1945 and 1944*

| Mineral | 1945 | 1944 |
|---|---|---|
| Stone | $8,442,921 | $7,741,499 |
| Iron ore | 3,575,133 | 4,190,380 |
| Zinc | 3,579,030 | 3,545,172 |
| Sand and gravel | 4,111,282 | 4,128,434 |

**Mineral Production.**—In 1945 the value of all mineral production in Wisconsin was $22,213,000 as compared with $22,794,000 for 1944 and $18,930,000 in 1943. (C. L. L.)

**Wisconsin, University of.** An institution of higher education at Madison, Wis. A record number of 2,100 students received degrees at Wisconsin's annual commencement in May 1947, the 94th in the university's 98-year history.

When the university opened for its 99th year on Sept. 29, 1947, a total of 23,442 students registered for instruction, 18,693 at Madison and 4,749 at 17 extension centres continued in cities in all parts of the state. This was an 85% increase over the highest prewar enrolment of 12,674 in 1939 and continued the university's record enrolment at the same high level set in 1946. The extension centre classes, taught by university instructors of regular faculty rank, were held in high schools, vocational schools and regular university centres for both freshmen and sophomores.

More than 46,625 young people and adults were enrolled in correspondence courses provided by the extension division during the year. More special institutes, 40 to be exact, attended by more than 7,000 citizens, were conducted for labour, agriculture, education, business and industry during 1947 than in any other of the university's 98 years.

With the huge demand for its educational services sustained through 1947, Wisconsin continued taking emergency measures to meet the situation and continued to carry forward plans, first inaugurated during World War II, involving the expenditure of more than $50,000,000 over a 10-year period for expansion and development of campus and building facilities. Besides the 17 extension centres, other emergency steps continued at Wisconsin to meet the immediate problems of the situation included temporary housing for students, temporary classrooms in the form of 15 Quonset huts and 27 temporary frame buildings. The faculty, increased by 65 full-time members to a record high of 883 members, established an integrated curriculum of liberal arts studies, and approved, on recommendation of Pres. Edwin Broun Fred, an intensive self-analysis of the university's work in education, science research and public service. (For statistics of endowment, enrolment, faculty, library volumes, etc., *see* UNIVERSITIES AND COLLEGES.) (R. Fs.)

**Withholding Tax:** *see* TAXATION.

**Woman's Christian Temperance Union, National:** *see* SOCIETIES AND ASSOCIATIONS.

**Women's Clubs, General Federation of:** *see* SOCIETIES AND ASSOCIATIONS.

**Wool.** The quantity of wool shorn in the U.S. in 1947, as estimated by the U.S. department of agriculture, was 256,302,000 lb., or 24,000,000 lb. less than in 1946 and 104,000,000 lb. less than the 1936–45 average. The record production of raw wool amounted to 459,000,000 lb. in 1942. The estimated number of sheep shorn in 1947 was 31,723,000, or about 3,000,000 head less than in 1946 and 13,500,000 below the 10-year average. The estimated weight per fleece was 8.8 lb., compared with 8.6 lb. in 1946 and the 10-year average of 7.97 lb. Pulled wool production for the year was estimated at 48,000,000 lb. against a total of 61,300,000 lb. in 1946 and a sharp reduction from the record production of 73,500,000 lb. in 1944. The reduction in poundage of both shorn and pulled wools may be attributed entirely to a decrease in the number of sheep shorn and slaughtered.

The 1947 world wool output, however, was equal to that of 1946, despite the decrease in United States production. The department of agriculture in October estimated the world wool production for the 1947–48 season at 3,700,000,000 lb. This was 12% smaller than the 1941 record of 4,200,000,000 lb. World production of apparel wool was estimated at about 2,900,000,000 lb. and consumption at 3,400,000,000 lb. This reduced the carry-over stock by 500,000,000 lb. The world carry-over of apparel wool on July 1, 1947, was estimated at 4,500,000,000 lb.

The Australian wool production in 1947 was estimated at 903,632,541 lb., an increase of approximately 25,000,000 lb. over the previous year. In New Zealand the clip was estimated at 349,873,367 lb., a decrease of nearly 3,000,000 lb. from the previous year. The estimated production of wool in Argentina for the year was 506,000,000 lb. Shipments for the year ending Sept. 30, 1947, amounted to 180,000 tons of greasy wool, which was nearly 40% under the record figure of the previous season. The United States purchased about 50%, while Belgium took 10%, France 8%, the U.S.S.R. 6%, and smaller quantities went chiefly to Italy, the Netherlands, Sweden, Spain, Switzerland and Poland.

During the month of March, negotiations by the Australian Wool Realization commission, involving the sale to Japan of lower-grade wools, were announced. The proposed $32,300,000 sale was the result of nearly a year's discussion and negotiation. As the Japanese government had no foreign exchange with which to finance the contract, and since all Australian wool is required by law to be sold by auction, the financing was done by a United States agency.

The first meeting of the International Wool Study group was held in London March 31 to April 3, and representatives of 25 countries participated. At about this time meetings were held in London and in Bradford, England, at which the utilization by British firms of surplus wool for processing in Germany was discussed, as well as the allocation of available combing and spinning space.

During early March three wool bills were brought before the house agriculture committee in Washington, D.C. All of these bills would allow the sale of domestic wools, in the government stockpile, by the secretary of agriculture for less than parity, to meet competition from abroad; and would permit, or require, the establishment of import quotas on foreign wools. One bill, which included the principal features of all, passed the senate but was vetoed by the president on June 26. His statement was to the effect that the bill in its original form contained features which were unnecessary for the support of the wool producers and would have a bad effect on international relations. Later the senate agricultural committee unanimously approved a new Wool Price Support bill, which was passed by the senate only four hours after the president's veto message had been received. On Aug. 5, President Harry S. Truman signed the Wool Price Support bill (S.1498) and the department of agriculture at once announced the new support program to be effective Aug. 15. This measure did two things: it authorized the Commodity Credit corporation to purchase the domestic wool clip until Dec. 31, 1948, at the 1946 level (an average price of 42.3 cents a pound, grease basis); and allowed the CCC to sell its stocks, consisting of about 400,000,000 lb. of the domestic wool stockpile, at prices competitive with those of foreign wool. Under the last price support law, such wools could not have been sold at less than parity. With this new law in effect and with the continued rise in price of the finer grades of wool in Australia and other wool centres, there were large weights of wool sold.

Following the offer of the United States to cut by 25% its duty of 34 cents per clean lb. on Australian wool, the commonwealth minister for reconstruction, who was in Geneva attending the United Nations Conference on Trade and Employment, was authorized to reopen negotiations with the United States on trade concessions. This would establish a new duty of 25½ cents per lb. clean basis on Australian wool entering the United States. This reduction in duty of the Tariff act of 1930, par. 1102 (b) for raw wool finer than 44s in grade, which was applicable to all most-favoured nations, including Argentina and Uruguay, was signed at Geneva on Oct. 30, to become effective Jan. 1, 1948.

The unprecedented demand for merino type of wools, principally from the continent, caused prices to advance rapidly at all sales in Australia as well as at London. A large credit, a revolving fund of £12,500,000, was granted the French wool textile interests by London banking institutions, the repayment being made in French exports of wool textiles. It was expected that this revolving fund would enable France to import £35,000,000 of British-owned wools as well as substantial quantities from South America. This large amount of credit caused France to outbid other nations, including the U.S., at all auction sales, both in Australia and South Africa. Other countries, except the United States, followed the upward swing in prices. The U.S., because of the tariff of 34 cents per lb., clean content, in effect at the time, was unable to compete, other than in certain specialty types. From January to November, prices rose at the Australian sales 50% on 64/70s and 42% on 58s. Other markets followed this upswing in prices.

Choice 60s/64s Chubut wool, from Argentina, rose in price from 33 cents per lb. in the grease in February to 41 cents per lb. in December.

United States wool textile mills consumed 358,700,000 scoured lb. of apparel wool in the first eight months of 1947, according to a report issued by the National Association of Wool Manufacturers. This was 13% less than that consumed in the corresponding period of 1946 but 95% greater than the average January–August consumption in the years 1935–1939. Domestic wool consumption in the Jan.–Aug. 1947 period was 60% greater than in the first eight months of 1946. The quantity of foreign apparel wool used in 1947 was down 25% from the same period in 1946.

In addition to higher prices of wool, increased wages were paid to labour in the woollen industry in the United States. A $27,456,000 annual wage increase went into effect Feb. 4 for 88,000 woollen workers covered by contracts with the Textile Workers Union of America (C.I.O.). All but 7 of 164 mills, which had agreements with the T.W.U.A., agreed on that day to a 15 cents an hour wage increase, lifting the minimum from 75 cents an hour, or $30 a week, to 90 cents an hour, or $36 a week.

On the basis of statistics of wool imports to the end of August, available from the department of commerce, it was estimated that the total of apparel types imported during the year amounted to 471,000,000 lb. (which included 80,000,000 lb. of 40s aside from those classed as "carpet" types). This indicated for the entire year little more than half the volume of apparel types, including the same 40s, imported in the calendar year 1946, which was 939,969,841 lb. The department of agriculture estimated the wool consumption for 1947 to be between 950,000,000 and 1,000,000,000 lb. (*See* also SHEEP; TEXTILE INDUSTRY.) (C. M. AN.)

## Words and Meanings, New.

The most certain characteristic of a living language is its tendency to change. New conditions of all kinds, new ideas, new inventions—all must be described by new words, by extensions of old words or by new combinations of words. English thus adds many new words to its vocabulary every year, some destined to live long, others to die soon. The words listed below are but a small residue of those collected by the committee preparing this article.

Several groups of the coinages below are deserving of brief comment. As usual, scientific discoveries are well represented among the new words, witness "astatine," "bevatron," "gleep," "hurricane-buster plane," "sonic barrier," and "synchro-cyclotron." Medical science, in particular, is represented by such coinages as "Amidone," "Caronamide," "chloromycetin," "electronarcosis," "grisein," and "rickettsialpox." An extremely interesting group of coinages reflect economic and political problems, especially in the foreign sphere: "Benelux," "Bizonia," "cold war," "Cominform," "crypto-Communist," "Marshall plan," and "police state."

Finally may be mentioned those words which reflect domestic activities, sometimes in the lighter vein: "baby sit," "bubble gum" (a 1947 fad), "flying saucer," "new look," and "Trumanburger."

These words became prominent or were seemingly used for the first time during the years 1946 and 1947. Dates within the parentheses following a word or definition indicate the first recorded use of the new word or meaning in the files of the committee.

A preceding hyphen means that the word or meaning is suspected to be older than the date given. If no date is given, the first record on file is 1947.

**across the board,** *adj.* Touching or affecting all parts of (a system); general; as, "an across the board wage increase." (1945)

**A.E.C.** United States **A**tomic **E**nergy **C**ommission.

**air letter.** A letter developed by the U.S. post office consisting of a single sheet of paper (stamped with a ten-cent air mail stamp), which can be folded into the shape of an envelope, sealed and sent anywhere in the world.

**airmark,** *v.* To provide with **airmarkers** (1942), prominently placed signs for the direction of fliers.

**Airphibian.** A two-seater, single-engine monoplane made by Continental, Incorporated, which can be converted into an automobile quickly and easily. Trade name. (1946)

**Amidone.** A drug (4-4-diphenyl-6-dimethylamino-heptanone-3), still in the experimental stage, with some of the properties of morphia. Also known as **Dolophine, Methadon** and **10820.**

**astatine.** Element number 85, which was produced by radio decay.

**Astra Dome.** The observation deck built in the roofs of the coach, diner, sleeper and observation lounge car of the General Motors "Train of Tomorrow." The deck is 30 ft. long and 10 ft. wide, and its transparent dome is 2 ft. above the roof of the car. Trade-mark.

**atomic itch.** A skin irritation, accompanied by high fever, brought about by exposure to radiations from the atomic bomb.

**atomic propulsion.** Propulsion by means of atomic energy. (1945)

**baby sit,** *v. i.* To sit with a baby while its parents are out.

**Bathyscaphe,** *n.* The 3½-in.-thick steel chamber, with an outside diameter of 6½ ft., with which Professor Auguste Piccard planned to descend far into the ocean. Also called **Hydrostrat.**

**Benelux.** Word formed from **Bel**gium, **Ne**therlands and **Lux**embourg to describe their economic association.

**bevatron.** A super-cyclotron, as yet only a design.

**biocide.** Term proposed by Dr. E. M. Greenberg to describe the gradual destruction of body tissues brought about by self-indulgence and the unhealthy living habits and pressures accompanying civilization.

**Bizonia.** The Anglo-U.S. zone in western Germany.

**blackmarketing,** *n.* Operating on a black market.

**bubble gum.** A kind of chewing gum capable of being blown into large bubbles which eventually pop. (-1938)

**-burger.** *See* **Trumanburger.**

**bush pilot.** A pilot who operates an aeroplane, especially in Alaska, over sparsely settled country and to out-of-the-way places. (1945)

**-buster.** *See* **hurricane-buster plane.**

**can,** *v. t.* To enclose (a plane or ship) within corrugated-steel chambers as a protection against weather. (1946)

**CARE.** Cooperative for American Remittances to Europe, Inc. (1946)

**Caronamide.** A drug (4-carboxyphenylmethanesulfonanilide) developed by Dr. Karl H. Beyer, of Sharp and Dohme, which, by checking the excretion of penicillin, makes the latter drug more efficacious in those cases where a high concentration of penicillin is required.

**chain reaction.** *Fig.* A series of results, one caused by another.

**chlordane.** A contact insecticide. Also **1068**, because it contains ten parts of carbon, six of hydrogen and eight of chlorine.

**chloromycetin.** A drug of the penicillin-streptomycin family recently discovered by Dr. Paul R. Burkholder, of Yale university, which may be effective against such diseases as epidemic typhus fever and parrot fever.

**civilian,** *n. & adj.* Pertaining to one not a (regular) member of a group, as, a temporary stenographer.

**cold war.** Bitter economic and political rivalry without outright fighting. (1946)

**Cominform.** Communist Information bureau.

**crypto-Communist.** One who sympathizes secretly with communism; a "fellow traveller." (1946)

**cyclonium.** *See* **prometheum.**

**deep,** *adj. Football.* Said of reserve players; as, "four deep in the line." (1942)

**depth,** *n. Football.* A supply of reserve players. (1945)

**Diapene.** Trade name of a bactericide for diaper rash.

**dollar crisis.** Condition resulting when a country whose exports to the United States fail to balance its imports begins using up its dollars.

**EDVAC.** Electronic Discrete Variable Computer, an electronic calculator.

**electronarcosis,** *n.* A treatment for the mentally ill in which the patient is kept unconscious for a short period of time by means of a mild electric current which is run through his brain.

**Elgiloy.** An alloy used in watchmaking, made by the Elgin National Watch Co.

**ERP.** European Recovery plan. The **Marshall plan** (*see* below).

**fan-marker.** *Aviation.* A vertical radio beam which indicates to the pilot of a descending aeroplane the distance to the end of the runway. (1944)

**flying disk.** *See* **flying saucer.**

**flying saucer.** One of a number of mysterious objects, first sighted over Oregon June 24, 1947, and later at other places, flying at great heights and at high speeds. Though the saucers were attributed in part to hallucinations resulting from mass hysteria, they were not satisfactorily explained.

**francium.** Name given by Mlle. Marguerite Perey to element number 87.

**Freedom Train.** A seven-car train, sponsored by the American Heritage foundation, containing an exhibit of important U.S. historical documents, which were displayed at various cities and towns throughout the United States.

**Friendship Train.** A train which went from Los Angeles to New York city, collecting voluntary contributions of food for Europe. Beginning as a train of 12 cars, it swelled to one of 266 by the time it reached New York. The food was shipped to Europe early in December on **Friend Ships.**

**gleep.** Name derived from the initials of "graphite low energy experimental pile" to describe Great Britain's first atomic pile.

**Glocca Morra.** Name that can be used for any desired place; as, "Things are fairly good in Glocca Morra." (-1947)

**grisein.** An antibiotic which complements streptomycin.

**grovesium.** *See* **prometheum.**

**hot rod.** *Slang.* A jalopy, stripped of excess trimmings, whose motor has been stepped up for high speeds. (-1945)

**hot war.** Actual fighting. Opposed to **cold war** (*q.v.*).

**hurricane-buster plane.** An aeroplane which attempts to break up hurricanes.

**hurricane-hunter plane.** An aeroplane for searching out and locating hurricanes.

**Hydrostrat.** *See* **Bathyscaphe.**

**Hypospray.** An instrument that forces liquid medicine under the skin.

**ILS.** Instrument Landing System, a radar system whereby a pilot is aided in landing his aeroplane. (1946)

**IRO.** International Refugee Organization. (1946)

**jump-pass,** *n. & v. Football.* A forward pass thrown as the passer jumps into the air. (-1947)

**Launderette.** A trade name of the Telecoin Corp. applied to a self-service laundry equipped with Bendix washing machines. (-1946)

**lay-up,** *n. Basketball.* A basket made by putting the ball through a basket by a jump and a gentle, one-handed push, usually off the back-board. (-1945)

**Mach number.** (After Dr. Ernest Mach.) The ratio between the speed of an object (as an aeroplane) and the speed of sound under the conditions (as of temperature) obtaining in the particular medium (usually air) in which the object is travelling. (1945)

**MANIAC.** The Mechanical and Numerical Integrator and Calculator, a calculating machine invented by John von Neumann.

**Marshall plan.** Term applied to the proposal of Secretary of State George C. Marshall that the United States give financial aid to western Europe to assist it in a long-term plan for recovery and rehabilitation.

**Mesantoin.** A trade name for an anticonvulsant drug.

**Methadon.** *See* **Amidone.**

**momism.** (From *mom,* colloquial for "mother.") Word coined by Philip Wylie to describe an American matriarchy, one aspect of which is the excessive "mothering" responsible for many neuroses, especially among men. (1942)

**nation,** *n.* A group of young people who meet to learn and practise the ways of democratic government.

**new look.** The new appearance of women's clothes resulting from innovations in style in 1947.

**1947N.** A comet, visible to the naked eye, so named because the 14th discovered during the year 1947.

**one-worlder,** *n.* An internationalist. (-1947)

**PCA.** Progressive Citizens of America.

**Phone Vision.** A principle developed by Zenith Radio Corp. for transmitting television over telephone wires.

**pipe line.** A channel of distribution. (1946)

**police state.** A state whose economic life is controlled by the government. Opposed to a country of free enterprise. **police statism.**

**post atom(ic),** *adj.* Subsequent to the dropping of the atomic bomb. (1945)

**power line carrier.** A type of telephone service, especially adapted to rural areas, which utilizes power lines. (1946)

**price (a person) out of the market.** To set prices so high that people refuse to buy. (1938) **price (goods) out of the market.** To price goods so high that they cease competing with their natural competitors. (1946)

**prometheum.** (After Prometheus.) Name proposed for the synthetically produced element number 61. Other proposals are **cyclonium, florentium, grovesium, illinium** and **thanium.**

**propylthiouracil.** A drug used in the treatment of goitre.

**Radarange.** A cooking range built by Raytheon Manufacturing Co. which utilizes the energy of ultra-high-frequency radio waves. (1946)

**rickettsialpox,** *n.* A disease, first identified in June 1946, with symptoms of chills, fever, sweating, backache and rash.

**seeding,** *n.* The dropping of chemicals, such as dry ice, from an aeroplane into a cloud to induce condensation. (Extension of older chemical usage, —1934.)

**sideline,** *v. t. Sport.* To keep (a player) on the sidelines, that is, out of play, because of an injury or the like. (-1946)

**silken curtain.** The well-mannered but firm censorship exercised by Great Britain over some of its foreign problems.

**sky barrier.** Same as **sonic barrier** (*see* below).

**Skystreak.** The U.S. navy's jet-propelled D-558 (made by the Douglas Aircraft Co.), which flew 650.6 m.p.h.

**sonic barrier.** *Aviation.* Point at the speed of sound where air disturbances supposedly create hazards for faster aeroplane flight. Also **sonic wall.** (-1947)

**spiv,** *n.* British. An operator on the black market; a minor racketeer.

**spot check.** A rough sampling. (-1945)

**stanine,** *n.* A blend (from "**stan**dard **nine**") that originated in 1942 in Psychological Research Unit No. 1, AAF classification centre, Maxwell field, Ala., to describe (a) a score on a 9-point scale in an AAF aptitude test or (b) the combined score in several such tests, as for pilot, bombardier, etc. (-1942)

**Stratofreighter.** The Boeing cargo aeroplane, capable of hauling 20 tons of freight. Trade-mark. (1946)

**Stratojet.** The Boeing XB-47, a bomber powered by six jet engines. Trade-mark.

**strip,** *n.* In California, a section of road or highway on which are located high-class eating places. (1938)

**synchro-cyclotron,** *n.* A cyclotron with some features of a betatron; its modifications in design make it more powerful than the cyclotron.

**1068.** *See* **chlordane.**

**thanium,** *n.* *See* **prometheum.**

**Trizonia,** *n.* The United States, British and French zones in western Germany.

**Trumanburger,** *n.* A meat substitute (bun sandwich whose filling consists of mashed beans and barbecue sauce).

**Truman doctrine.** Name given to the policy of President Harry S. Truman of giving financial aid to nations (specifically Greece and Turkey) for rehabilitation and resistance to Communist control.

**Tuf-Flex.** An unbreakable glass made by Libby-Owens-Ford, recently used as a baseball backstop instead of the conventional wire netting. Trade name. (1945)

**Ultrafax.** Trade name of a high-speed communications system employing television.

**UMT.** Universal Military Training program.

**Umtee** (Pron. of UMT). A trainee in the Universal Military Training program.

**venture,** *adj.* Not controlled; as, "venture money," money one is willing to risk in a new enterprise. (1938)

**watchdog commission.** A government commission set up for careful observation of some trouble spot. (I. W. R.)

**Works Agency, Federal:** *see* Federal Works Agency.

**World Bank:** *see* International Bank for Reconstruction and Development; International Monetary Fund.

**World Commerce:** *see* International Trade.

**World Council of Churches:** *see* Christian Unity.

**World Federation of Trade Unions.** At its general council meeting in June 1947, the federation elected Arthur Deakin, general secretary of the British Transport and General Workers' union, as president. Its secretary was Louis Saillant, of the French Confédération Générale du Travail. A special W.F.T.U. mission visited Germany in Jan.–Feb. 1947, and reported strongly in favour of the maintenance of a united German trade union movement, which had then reached a membership of 6,000,000. The W.F.T.U. asked the military governments in Germany to avoid all steps that might endanger trade union unity, to allow the trade unions to play a larger part in denazification of industry, and to give them "on all official and semi-official bodies a representation at least equal to that of other groups of the community." The W.F.T.U. also set up a liaison bureau for Germany, and agreed in principle to accept the affiliation of the German trade union movement as soon as it had been able to establish a common trade union centre. W.F.T.U. delegations also visited Japan and Iran; a conference on trade unions in Africa was organized at Dakar in April when demands were put forward for the organization of effective social and health services in African colonial territories, on the same basis as those provided in the metropolitan countries. The British delegation dissented from this recommendation as impracticable at the present stage of African development.

The main work of the W.F.T.U. in 1947 was concerned with the organization of trade departments representing the workers in particular industries and services, to replace the prewar independent Trade Federation of Transport Workers, Miners, Textile Workers, etc.; separate conferences of the various trade groups were being held, and a set of approved rules were drawn up for adoption by the trade departments, regulating their relations with the W.F.T.U. There were discussions with the United Nations Economic and Social council concerning the form of recognition to be given to the W.F.T.U. by that body, so as to secure its right to speak at plenary sessions on all questions in which it has an interest. The W.F.T.U. placed a number of questions on the agenda of the Economic and Social council, including those of equal pay for men and women, abolition of racial and national discrimination, full employment, treatment of immigrant workers, suppression of trusts and monopolies, and standards of living in different countries. Discussions were also opened with the International Labour organization concerning the relation of the W.F.T.U. to that body under its revised constitution.

Early in 1947 the W.F.T.U. represented trade unions in 32 countries, with an approximate total membership of 65,000,000. Of these, 27,000,000 were in the U.S.S.R., and 26,000,000 in the rest of Europe, including 7,000,000 in Great Britain, 6,000,000 in France and 5,000,000 in Italy. Germany was not represented. Asia accounted for nearly 4,000,000, including 1,600,000 in China, and there were 860,000 in India. The United States was represented only by the Congress of Industrial Organizations, with 6,500,000 members. In Africa, only Nigeria was affiliated, with 500,000, and in the Pacific only Australia, with 625,000. No figures were available for Latin America.

(G. D. H. C.)

**World Health Organization:** *see* UNITED NATIONS (U.N.).

## World War II.

The surrender dates of World War II follow:

*Sept. 3, 1943:* Italy surrendered unconditionally. On Oct. 13, 1943, Italy declared war against Germany and on July 15, 1945, against Japan.

*Aug. 23, 1944:* Rumania accepted the Allies' armistice terms and, on Aug. 25, declared war against Germany and Hungary.

*Sept. 9, 1944:* Bulgaria accepted Allied armistice terms.

*Sept. 19, 1944:* Finland signed armistice terms with Great Britain and Russia (the United States was not at war with Finland). On March 3, 1945, Finland announced it had been at war with Germany since Sept. 15, 1944.

*Jan. 20, 1945:* Hungary capitulated.

*May 7, 1945:* Germany surrendered.

*Aug. 14, 1945:* Japan surrendered.

It must be remembered in connection with the above listing that Germany, as early as 1942, had made overtures to Russia with the purpose of accomplishing a separate armistice with that power. Josef Goebbels was sure that Germany's position was weak and he enlisted Japanese aid in seeking a separate peace with Russia. Playing on that country's ire over the nonestablishment of a "second front," Germany tried to sell Russia the idea of a definite break with its allies, along with a peace with Germany. However, Russia could not reconcile these two points and nothing came of the attempt. In 1943, when things looked gloomy for the Germans, their diplomats again worked feverishly to effect a separate peace with Russia. They were ready to throw Finland and Rumania in as bribes. If the worst came to pass, the nazis would have preferred to capitulate to Marshal Joseph Stalin rather than to Franklin D. Roosevelt or Winston Churchill. However, German home sentiment soon revealed that if Russia should show any intention to pick up Germany's offer, Adolf Hitler would lose a considerable following. Since he had already lost Italy, he could not afford further loss at home. Russia turned a deaf ear to the proposition and nothing came of it.

Along with the national surrenders listed above, it is of interest to note several instances wherein groups of the enemy did not surrender, mentally or physically, according to accepted schedules.

U.S. forces fired first on Guam in July 1944 and in the next month had control of the island. A year later, in July 1945, a Japanese officer, his lieutenant, his orderly and 33 ragged soldiers surrendered on Guam to Col. Howard Stent of the U.S. marine corps. This Japanese group had hidden out in the jungles after their comrades in arms had surrendered. On Feb. 24, 1947, Allied police forces were forced to round up and arrest hundreds of diehard nazis in Berlin who fostered the idea of waging bacteriological warfare in an effort to restore Germany's armed might. The public press of July 18, 1947, reported a holdout force of 50,000 Japanese troops still battling in the Korean-Manchurian area, having failed to surrender on V-J day.

**Official End of Hostilities.**—The proclamation quoted below did not terminate the states of emergency declared by President Roosevelt on Sept. 8, 1939, and May 27, 1941, nor did it have the effect of terminating the state of war itself; it merely terminated the period of hostilities. It did, however, terminate immediately government powers under about 20 statutes and about 33 others at a later date, generally on July 1, 1947.

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA

A PROCLAMATION

With God's help, this nation and our Allies, through sacrifice and devotion, courage and perseverance, wrung final and unconditional surrender from our enemies. Thereafter, we, together with the other United Nations, set about building a world in which justice shall replace force. With a spirit, through faith, with a determination that there shall be no more wars of aggression calculated to enslave the peoples of the world and destroy their civilization, and with the guidance of Almighty Providence, great gains have been made in translating military victory into permanent peace. Although a state of war still exists, it is at this time possible to declare, and I find it to be in the public interest to declare that hostilities have terminated.

Now, therefore, I, Harry S. Truman, President of the United States of America, do hereby proclaim the cessation of hostilities of World War II, effective twelve o'clock noon, December 31, 1946.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the seal of the United States of America to be affixed.

DONE at the city of Washington this 31st day of December in the year of our Lord nineteen hundred and forty-six and of the Independence of the United States the one hundred and seventy-first.

By the President:

HARRY S. TRUMAN

James F. Byrnes
The Secretary of State.

ANTI-AIRCRAFT SHELLS being dumped into the Gulf of Mexico at a depth of 3,000 ft. in April 1947, as part of the lengthy operations for disposal of surplus naval ammunition remaining after World War II

Through the medium of official and nonofficial private publications released after V-E and V-J days, the general public was informed of World War II facts not thoroughly comprehended previously. The keynote of written and spoken material dealing with World War II had been utmost frankness. Books like Ralph Ingersoll's *Top Secret,* Robert Merriam's *Dark December,* William Huie's *The Case against the Admirals,* R. S. Allen's *Lucky Forward* and James Byrnes's *Speaking Frankly,* written from the viewpoint of the individual author, spared no one.

**Costs and Casualties.**—In April the department of the army released World War II cost figures, in lives and dollars. These figures show that World War II was almost twice as expensive in U.S. lives—313,000 against 193,663—and 20 times as expensive in wealth as World War I. The money bill for World War I was $21,850,000,000 which was 20 times the prewar debt and enough to pay the entire expenses of the United States government from 1791 to 1917. The bill for World War II was $340,000,000,000. Viewed in another dimension, World War II cost approximately 87.5% of the entire national wealth with 15% of the 1940 population in the armed forces during the course of the conflict. A hundred years earlier, the Mexican War had involved 0.6% of the nation's population and had cost 0.26% of the national wealth at that time. Reduced to tabular form, comparative costs in lives and wealth were:

| Wars | Dates | Total U.S. troops | Total dead | Total cost |
|---|---|---|---|---|
| Mexican | 1846–48 | 104,284 | 12,946 | $ 139,500,208 |
| Spanish | 1898–99 | 408,391 | 6,472 | 992,159,840 |
| World War I | 1917–21 | 3,665,000 | 193,663 | 21,850,000,000 |
| World War II | 1941–* | 10,200,000 | 313,000 | 340,000,000,000 |

*War not officially terminated at end of 1947.

Furthermore, it is estimated that, by 1972, accruing costs directly connected with World War II will raise the $340,000,000,000 figure to $700,000,000,000.

**Ship Losses in World War II.**—The *Eastern Underwriter* (Eastern Underwriter Co., New York, N.Y.) released the following statistics on ship losses in World War II from Sept. 3, 1939, to May 5, 1945:

| | |
|---|---|
| British empire | 2,570 |
| United States | 538 |
| All other Allies | 1,172 |
| Neutrals | 490 |
| Total | 4,770 |

Available sources for enemy losses show:

| | |
|---|---|
| Japan | 318 |
| Germany | 1,266* |
| Italy | 257† |
| Total | 1,841 |

*204 of these were surrendered.
†49 of these were surrendered.

**Operation "Torch."**—In his book *Our Vichy Gamble,* William L. Langer, professor of history at Harvard university, brings out many interesting facts concerning U.S. relations with Vichy France. His discussion of U.S. operations in North Africa, Operation "Torch," sheds considerable light on the interplay of political and military factors operative in that area, factors outside the ken of the average reader at that time.

At the outset, Generals Dwight D. Eisenhower and Mark Clark found themselves enmeshed in a welter of political factionalism from which there seemed to be no clear path of escape. Under the German aegis, Pierre Laval held the reins in France, although Henri Pétain was nominally in command at Vichy; Adm. Jean Darlan was commander in chief under Pétain, of all French armed forces—land, sea and air; Gen. Henri Giraud, a hero of World Wars I and II, had to be reckoned with from a command and sentimental standpoint and, finally, Gen. Charles de Gaulle, leader of the Free French, could not understand why he should divide the spotlight with any other Frenchman. Faced with this situation which was present throughout all the planning and operational stages of Operation "Torch," Eisenhower named General Clark to the command of the U.S. 5th army, leaving the position of deputy commander purposely open.

As the operations were shaped, De Gaulle, difficult to get along with, was deliberately kept in ignorance of the exact plans. To Allied political and military leaders, it seemed that General Giraud might bring to bear the most weight in asking Frenchmen, under his leadership, to fight against Frenchmen in Africa in order that the Allied invasion might succeed. Generals Eisenhower and Clark met with Giraud at Gibraltar to formulate the final plans. They ran into trouble immediately. Deaf to all arguments, Giraud insisted that he must be commander in chief in North Africa and be without responsibility to the U.S. and British combined chiefs of staff. He said the U.S. could look after his reinforcements of personnel and supplies. Further, Giraud was determined upon an immediate invasion of southern France. On this point, he was told definitely that such move would be predicated entirely on initial success in North Africa. Finally, Giraud yielded to the extent of acknowledging U.S. military leadership for the operation in exchange for which Giraud would be commander in chief of all French forces in the North African region and governor of the French North African provinces. In the meantime, military operations had begun.

At 1:00 A.M., Nov. 8, 1942, the task force was in motion. On the German side, the U.S. invasion came as a surprise. They had expected some operation either against Dakar or Casablanca, but they had not expected the landings in Algeria.

On Nov. 8, Gen. Alphonse Juin, commanding land and air forces in French North and West Africa, was called upon by Robert D. Murphy, counsellor of the U.S. embassy at Vichy, to recognize the fact of U.S. invasion and was urged to throw his strength on the side of the Allies to liberate France. Juin, faithful to Pétain, countered that it was not his responsibility to make such decision since Darlan was right then in Algiers. Darlan, summoned by phone, now made the argument a three-sided one with Murphy momentarily expecting to hear the sounds of invasion forces landing. Darlan, ever the opportunist, consented finally to throw in with the Americans, provided Pétain would approve. This news, when it reached Eisenhower at Gibraltar, created a tense problem. Giraud, after hours of urging, had just been won over to some form of agreement in return for which he had been made certain promises. What to do with him now? Could he and Darlan work together? Eisenhower immediately sent Giraud (Nov. 9) by plane to Algiers where his fellow French officers refused to have anything to do with him. General Clark even had to find him a hiding place where it would be safe to confer with Juin and Darlan. The latter, still apprehensive of Pétain's approval of his actions, was finally convinced enough to give a cease-firing order which undoubtedly saved hundreds of lives of the invasion forces. He also ordered the French fleet to be ready to move from Toulon should the Germans proceed to occupy all of France. In the meanwhile, he assumed command of all North Africa in the name of Pétain. When Darlan's message reached Pétain, he was urged to approve it, to order the French fleet to sea and to command French garrisons to take to the hills. To this he agreed, but the message he sent to Darlan to that effect was intercepted by the Germans, who called upon Laval to bring Pétain into line. This he did. Pétain reversed himself, named Gen. Auguste Noguès as commander in chief in North Africa but, at the same time, sent a secret message in code to Darlan telling him that he approved everything the latter had done. Receiving first the message concerning Noguès's appointment, Darlan told General Clark that he must rescind his previous cease-firing order. Clark's response was characteristic and immediate, "Damned if you do."

Darlan refused to budge; Giraud, lacking military recognition by his own uniformed people, was helpless. At this moment, the secret approval message of Pétain came through to Darlan, along with the news that the Germans were occupying all France.

Laval hastened to Munich only to learn from Hitler that, unless France allied itself with Germany, it would be occupied *in toto* and would lose its entire colonial empire. In North Africa, Clark and Eisenhower were moving the pieces on the chessboard somewhat feverishly. Summoned from Morocco, Noguès threw in his lot with Darlan; Pierre Boisson, governor general of West Africa, elected the Allied cause; Giraud accepted the post of military chief in the Darlan group; De Gaulle was out of the picture. Thus, by Nov. 22, the Allies, exploiting to the full Darlan's usefulness to them, had gained a measure of security in the rear and were assured of being able to open new and improved air supply lines across the Atlantic to U.S. troops. The French were immediately committed to helping the Allies to capture Tunisia, plus making every effort to get the fleet at Toulon. This latter failed when the French commander, Adm. Jean de la Borde, hating Darlan, scuttled the fleet in the harbour.

The invasion of North Africa, in point of time, was most fortunate. It came in conjunction with Gen. Bernard L. Montgomery's breaking of the German lines at El Alamein, the prelude to the British drive through Libya.

The dominating position to which Darlan had now succeeded roused a storm of protest; he was branded "Vichy traitor," "notorious quisling" and even "skunk." The possibility of uniting the De Gaulle and Giraud factions was, for the time, blasted. Darlan, opportunist to the end, now envisioned himself as the successor to Pétain. His supporters were all officers committed to Vichy. Thus, Eisenhower and Clark found themselves with a new problem on their hands. Darlan was told bluntly that he was acceptable so long as he collaborated to break the axis power and eventually thus to free France, but that he was not to indulge in building up a political organization which had no bearing on the military effort. He disavowed any such political intentions but his actions ran contrary to his words. It was finally decided that he must resign. However, on Christmas Eve, 1942, he was assassinated. The man was dead but not the problem.

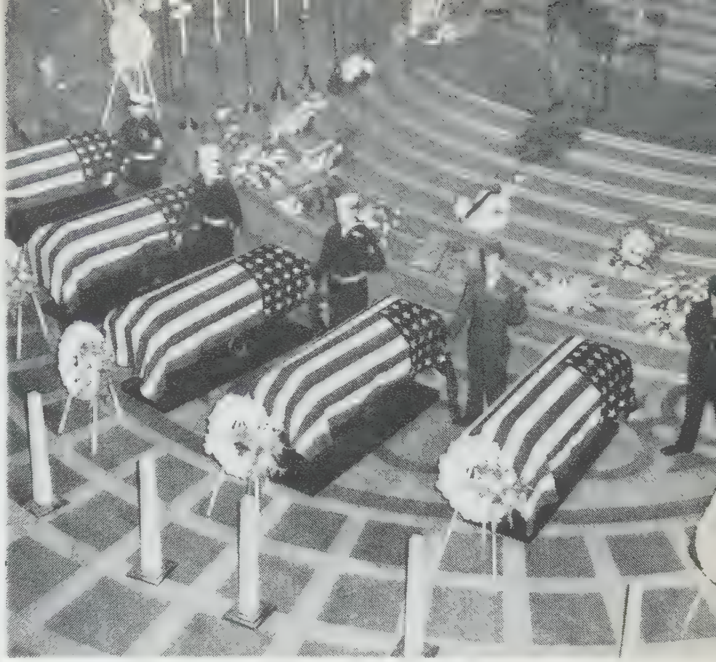
**Turkey in World War II.**—The role of Turkey during World War II has been often commented upon unfavourably in the press. It declared war against Germany only at the last possible moment, in fact only when the Allies announced that only states which had declared war on Germany would be invited to the San Francisco conference. The blame for allowing Turkey to dangle so long as a dubious ally or uncertain neutral must be equally shared by the United States and Great Britain. They figured that Turkey was an ally and could be counted on to (1) hold the Anatolian line and (2) come into the war on the Allied side. The first gamble, a winning one as was the second, allowed Great Britain to consolidate its position in Iran, Syria and Iraq.

From 1940 to 1944, Turkish soil was a battlefield for economic warfare. Before the war, Germany was Turkey's best customer, buying more from it than all the other countries of the world put together. Great Britain and other countries, if they bought, did so at the fantastic prices Turkey elected to charge. But when the World War II sea blockade went into effect, things began to look different. Turkey, thinking it was doing the right thing, veered commercially to France and Great Britain. Of its own accord it refused to renew its treaty of commerce with Germany. But, when its surpluses began to pile up, Turkey signified that it was ready to pick up the previous commercial tie with Germany. This was a serious matter for the Allies. Since Great Britain looked upon Turkey as an ally, it felt that vital war commodities should not flow from Turkey to the axis powers. The Turks argued that they needed arms and equipment for their army—machinery, locomotives, rolling stock and other essentials for their interior economy. They preferred to get these things from Great Britain but, since this seemed impossible, they knew they could get them from Germany in exchange for raw materials and foodstuffs. Clearly, Turkey was straddling two horses at the same time.

The principal items at stake were Turkey's chrome, cotton, tobacco, oil seeds, copper, valonea and dried fruits. Allied mass

TALK OF THE "NEXT WAR"
WE'LL JUST CLIP HIS WINGS AND HE WON'T FLY AWAY
CRAWFORD

"BLESSED ARE THE PEACEMAKERS." Wry comment, by Crawford of the *Newark Evening News*, on the widespread references, in 1947, to a third world war


FLAG-DRAPED COFFINS of U.S. soldier, marine, sailor, coast guardsman, air corpsman and civilian who lost their lives in World War II are shown lying in state at the city hall in San Francisco, Calif., as the return of overseas war dead to the U.S. was begun in Oct. 1947

buying kept Germany from getting all the things it wanted but for a long time Turkey traded in both camps.

In April 1944, the governments of Great Britain and the United States finally cracked the whip. Turkey was told that if it continued to trade with Germany it could expect to be blockaded like other neutrals. Faced with this ultimatum, Turkey, after three years of straddling, admitted that chrome was being used in the manufacture of weapons which were being used against its allies; therefore, no more chrome must be sent to the axis countries. Four months later it completely severed economic and political relations with Germany.

Turkey came out of World War II undamaged and with all the basic elements of its economy unimpaired. In 1947 it possessed greater resources than it did in 1939.

By the fortunes of war, Germany was eliminated as Great Britain's sharpest competitor for Turkey's commercial favour—but that place was taken by Russia.

**War Crimes.**—On May 30, 1924, the German courts rendered judgment that the whole nazi party was a criminal organization; when the German wehrmacht grovelled in defeat in 1945, that "criminal organization," from a position of brutal power, had written a horribly gory page in history. On this page was the record of crime and atrocity beyond civilized human belief.

On Aug. 8, 1945, the governments of the United States, Great Britain, Russia and France, along with 19 lesser governments of the United Nations, established the International Military tribunal to meet at Nuernberg, Germany, to try such war criminals whose offenses had no particular geographical location. Before this tribunal appeared 22 leaders of the infamous Hitler hierarchy to answer for their crimes. These were: Hermann Goering, Rudolf Hess, Joachim von Ribbentrop, Wilhelm Keitel, Ernst Kaltenbrunner, Alfred Rosenberg, Hans Frank, Wilhelm Frick, Julius Streicher, Walter Funk, Hjalmar Schacht, Karl Doenitz, Erich Raeder, Baldur von Shirach, Fritz Sauckel, Alfred Jodl, Martin Borman, Franz von Papen, Arthur Seyss-Inquart, Albert Speer, Constantin von Neurath, Hans Fritzsche. Of these, 3 were acquitted, 7 were given jail sentences ranging from 10 years to life and 12 were condemned to death by hanging.

Of this latter number, Goering cheated the gallows by committing suicide in jail. The principal charges were: (1) war crimes; (2) crimes against the peace and (3) crimes against humanity.

It was proved that war crimes were deliberately planned long in advance, as witness the invasion of soviet Russia wherein the program of plunder and cruelty to civilian populations had all been worked out beforehand. Similarly, the German government had carefully worked out a plan to exploit the inhabitants of all occupied countries for slave labour on a gigantic scale. This they considered an integral part of their war economy. Defying all principles of international law, prisoners of war and civilians in occupied territories were ill-treated, tortured and murdered. Whole populations were deported to Germany for purposes of slave labour upon defense works, armament production and other war-effort tasks. Civilian hostages seized in occupied countries were shot as it suited their German captors. Property, public, church or private, was plundered and pillaged to enlarge the resources of Germany. Cities, towns and villages were wantonly razed with no shred of military justification or necessity. Lidice, Czechoslovakia, must be remembered as one of these. Persecution of the Jews raged unchecked. Long before World War II, Goering had written, ". . . Vienna cannot rightly claim to be a German city. One cannot speak of a German City in which 300,000 Jews live. This City [Vienna] has an important German mission in the field of culture as well as in economics. For neither of these can we make use of the Jews." Before the Nuernberg tribunal it was brought out that, under the nazi party program, "Only a member of the race can be a citizen. A member of the race can only be one who is of German blood, without consideration of creed. Consequently, no Jew can be a member of the race." That the Jew might be eliminated from the fabric of German life, at least 5,000,000 murders were committed. Heinrich Himmler and his satellite officers did the killings, ran the infamous camps where mass cremations snuffed out thousands of lives; where other thousands were beaten to death; where countless numbers went mad, starved to death or were shot down like animals. Himmler executed but Goering, in his own or in Hitler's name, gave the orders. Dachau, Buchenwald, Langwasser, Rowno, Dubno, Treblinka, Flossenburg, Auerbach, Auschwitz, Staumehle and Garmisch are a few of the place names where the manifestations of German *Kultur* sank to noisome depths of infamy.

The tribunal charged and proved guilty those nazi leaders who, under the heading of crimes against the peace, planned and carried into execution the territorial moves against Belgium, the Netherlands, Austria, Norway, Denmark, Czechoslovakia, Poland and Greece. On the high seas, German submarine warfare had preyed on neutral and enemy ships alike. The tribunal placed the blame on those nazi leaders who were guilty of unrestricted submarine warfare, including the sinking of unarmed merchant ships and of neutrals, and of the nonrescue and machine-gunning of survivors. (*See* WAR CRIMES.)

**Atomic Bombing.**—The first atomic bomb, the first weapon of its type to be used against an enemy target, burst over Hiroshima, Japan, at 8:15 A.M. on Aug. 6, 1945. Three days later, another such bomb was dropped on Nagasaki. The United States Strategic Bombing survey estimates the dead at Hiroshima to have been between 70,000 and 80,000, with an equal number injured; at Nagasaki, more than 35,000 dead and somewhat more than that injured. At Hiroshima the proportion of deaths from burns (flash or flame) was placed at 70%; from falling debris at 20% and from other injuries at 10%. Of those who died later, the greater proportion died from radiation effects. Of the traced survivors who were within 3,000 ft. of the immediate explosion, 95% suffered from radiation disease. Scientists have determined that the radiation effects upon survivors resulted from the gamma rays liberated by the fission process rather than from induced radioactivity or the lingering radioactivity of deposits of primary fission products.

Hiroshima required complete rebuilding; the heart of the city, the main administrative and commercial, as well as residential, sections were all wiped out. Only 50 reinforced concrete buildings in that area remained standing and all of those suffered blast or fire damage. Japanese figures summed up building destruction at 62,000 out of a total of 90,000 buildings in the urban area.

At Nagasaki, the scale of destruction was greater than at Hiroshima, though the actual area destroyed was smaller. Parts of the city were protected by hills so that more than half of the residential units escaped serious damage. Of the 52,000 residential units, 14,146 were completely destroyed and 5,441 were half-burned or destroyed; but 90% of the industrial output of the city was seriously damaged.

The purpose of the bombing attacks, both of them all-Japan events, was to break the fighting spirit of the Japanese people and their leaders, not just of the residents of Hiroshima and Nagasaki. The reactions in the bombed cities tallied closely with those of the whole country—fear and terror, anger and hatred against the United States, grudging admiration for the scientific achievement. However, it cannot be said that the atomic bomb alone convinced the Japanese leaders of the necessity of surrender. Since 1944 a political group close to the emperor had been trying to end the war. But the army stood for a fight-to-the-end policy. The peace group now brought the emperor into the picture with his declaration for the acceptance of the Potsdam terms. Even in the face of the atomic bombings, the military party was not completely convinced that defense of the home islands was impossible. True to their "saving-face" tradition, the military had a way out by announcing that no army without the atom bomb could possibly resist an enemy who had it. Such a view reflected no disparagement on the competence of Japanese industrialists or the courage of the Japanese soldier.

Pres. Harry S. Truman had been reluctant to order the use of the atomic bomb. Every effort was made to urge upon Japan acceptance of the Potsdam terms for ending the war. However, the Japanese military party was in control and there was no other way.

On Aug. 6, President Truman's message to the Japanese was that if they did not accept the Potsdam terms they could "expect a rain of ruin from the air, the like of which has never been seen on this earth."

**Conferences of the Great Powers.**—The following brief statements cover the outstanding activities of the several conferences by the great powers. These conferences, starting while the war was in progress, extended over well into the peace-forming era:

*Moscow.*—Oct. 19–30, 1943. Present: Cordell Hull for the United States; Anthony Eden for Great Britain; Vyacheslav Molotov for Russia. An agreement was reached stating that the making of peace and the keeping of peace could be best achieved if the task were regarded not as one problem but two related problems. On Nov. 1, 1943, the three nations were joined by China in a declaration which stated that, ". . . they recognize the necessity of establishing at the earliest practicable date a general international organization, based on the principle of the sovereign equality of all peace-loving states, large and small, for the maintenance of international peace and security." Here was the germ of the United Nations idea.

*Cairo.*—Nov. 22–26, 1943 (first meeting). Present: President Roosevelt for the United States; Generalissimo Chiang Kai-shek for China; Prime Minister Churchill for Great Britain. Russia, not being at war with Japan, was not represented. The three Allies agreed to restrain and punish the aggression of Japan; to strip from Japan all the islands in the Pacific which it had seized or occupied after 1914 and to restore to China the stolen territories of Manchuria, Formosa and the Pescadores. Korea was to emerge free and independent.

*Tehran.*—Nov. 28–Dec. 1, 1943. Present: President Roosevelt for the United States; Prime Minister Churchill for Great Britain; Marshal Stalin for Russia. Principal item of business was the co-ordination of Allied and soviet military operations for a major assault upon Hitler's Europe. It was at the end of this conference that Roosevelt said, ". . . I got along fine with Marshal Stalin. . . . I believe we are going to get along well with him and the Russian people . . . very well indeed." Subsequent events did not substantiate this.

*Cairo.*—Dec. 4–6, 1943 (second meeting). Present: President Roosevelt for the United States; Prime Minister Churchill for Great Britain; Pres. Ismet Inönü for Turkey. This meeting was called to reassure Turkey as to the purpose and intentions of the Soviet Union. (Keeping in mind that at this time Turkey was reaping a rich dollar harvest from the axis and the Allies simultaneously, the solicitude for Turkey's welfare displayed at this conference must have been welcomed by Inönü.)

*Bretton Woods (N.H.).*—July 1–22, 1944. Present: delegates representing the United States and 43 countries invited to participate. Purpose of the conference was to establish an international monetary fund as the most practical method of ensuring international monetary co-operation. Out of this meeting came the establishment of the International Bank for Reconstruction and Development, more familiarly known as the World bank. The Soviet Union cast the only dissenting vote on the question of setting up this bank.

*Dumbarton Oaks (Washington, D.C.).*—Aug. 21–Oct. 7, 1944 (first phase). Present: Edward R. Stettinius, Jr., for the United States; Sir Alexander Cadogan for Great Britain; Andrei Gromyko for Russia. For the second phase of the conversations, Russia dropped out and its place was taken by Wellington Koo for China. Avoiding tangential problems created by the war, the conference concentrated on the means of establishing machinery to implement an international security organization. The most important of their agreements was the one stating, "There should be established an international organization to be known as the United Nations." A considerable part of the U.S. population watched the activities of this organization since its formation. A repeated and logical question has been: since the League of Nations did not prevent World War II, do the Dumbarton Oaks proposals represent any improvement on the League covenant?

*Yalta.*—Feb. 3–11, 1945. Present: President Roosevelt for the United States; Prime Minister Churchill for Great Britain; Marshal Stalin for Russia. This meeting was in reality a preliminary peace conference. Territorial and political agreements were reached to have tremendous impact later. European territorial agreements chiefly concerned Poland. Its eastern boundary was to become that of the Curzon line, drawn in 1919, and lying west of Poland's 1937 boundary with the Soviet Union. In compensation for the loss of territory involved, Poland was to receive land to be taken from Germany. Politically it was agreed that: (1) there must be unconditional surrender upon the part of the nazis; (2) there would be zone occupation, by nationalities, of German territory—France to participate if it so desired; (3) Germany would be disarmed and denazified.

At the time of this Yalta conference, Russia was not at war with Japan. Therefore, in order not to disrupt Allied military strategy, no announcements were made of the agreements reached regarding Japan. These came out in 1946 and included: (1) ceding the Kurile Islands to Russia; (2) restoring Russian

GEORGE C. MARSHALL, U.S. secretary of state, making a public address on his arrival at Moscow for the Conference of Foreign Ministers which met in March 1947 to discuss peace terms for Germany and Austria. He was greeted by soviet deputy Foreign Minister Andrei Vishinsky (right)

sovereignty over the southern part of Sakhalin Island; (3) preservation of the status quo in Outer Mongolia; (4) restoration of the Russian lease on Port Arthur as a naval base and (5) jointly with China, Russia to operate the Chinese and South Manchurian railroads. Russia had exacted a high price, in advance, for its promise eventually to declare war upon Japan.

*Mexico City.*—Feb. 21–March 8, 1945. Present: all members of the Pan American Union, except Argentina. Though not listed on the agenda, Argentina, suspected of pronazi leanings, was a principal subject of discussion. Three main documents were adopted: (1) the economic charter of the Americas; (2) the resolution on reorganization, consolidation and strengthening of the inter-American system and (3) the act of Chapultepec, a reaffirmation of certain fundamental principles striven for after 1890. Among these were: (1) proscription of territorial conquest and nonrecognition of acquisitions made by force; (2) condemnation of intervention by a state in the internal or external affairs of another; (3) recognition that every war or threat of war affects all civilized peoples and endangers the American ideals of liberty and justice; (4) the seeking of means for peaceful co-operation in the event of war or threat of war between American countries; (5) recognition of the fact that every act susceptible of disturbing the peace of America justifies initiation of consultation procedure; (6) settlements of differences or disputes by conciliation, free arbitration or through operation of international justice; (7) recognition of respect for personality, sovereignty and independence of each American state—the essence of international order sustained by continental solidarity; (8) respect for and observance of treaties as the indispensable rule for development of peaceful relations between states; (9) any threat against peace, security or territorial integrity of any American republic to be a matter of common concern; (10) the attempt by any non-American state to defile the integrity, sovereignty or political independence of an American state to be considered as an act of aggression against all the American states. This latter provision is similar in character to the Monroe doctrine of 1820.

*San Francisco.*—April 25–June 26, 1945. Present: delegates from 50 United Nations which had declared war on either Germany or Japan, or both. The conference had a twofold job: first, to frame a charter on the basis of the Dumbarton Oaks proposals and, second, to tackle the problems of the approaching peace settlements. At the outset, Russia was viewed with suspicion. What were its aspirations in Europe and Asia? Could the Yalta formula be applied? Roosevelt had announced to the United States that responsible unanimity must be maintained among the only powers that could possibly back up the decisions of the Security council with force. In other words, no action to preserve or restore peace could be successful unless the Big Five agreed to it unanimously. This formula, the U.S. now found out, had been agreed upon at Yalta. Stalin rode this idea in the conference until it seemed that all progress toward agreements was stalled. However, on June 7, 1945, he modified his stand and the Big Five on the following day announced an agreement clarifying the Yalta formula. This clarification required unanimity of permanent members of the Security council in all decisions relating to enforcement action and in all decisions for peaceful settlement.

The San Francisco charter, as finally adopted, kept the core of the Dumbarton Oaks proposals and set the United Nations organization up in business with the great-power coalition embedded in the structure of the Security council.

*Potsdam* (sometimes referred to as the Berlin conference).—July 17–Aug. 2, 1945. Present: President Truman and Secretary of State Byrnes for the United States; Prime Minister Churchill (succeeded by Prime Minister Clement Attlee) for Great Britain; Generalissimo Stalin and Minister Molotov for Russia. The conference was primarily concerned with the liquidation of Germany's military power and the limiting of its industrial potentialities to wage war in the future. Politically it was provided that: (1) so far as is possible there shall be uniformity of treatment of the German population throughout Germany; (2) the German political structure shall be decentralized and emphasis placed, instead, upon local responsibility; (3) no central German government to be established for the present. Economically it was provided that: (1) German economy should be decentralized to destroy the power of cartels, syndicates and trusts; (2) primary emphasis to be given to the development of agriculture and peaceful domestic industries; (3) during the period of occupation, Germany to be treated as a single economic unit.

Reparations claims were to be met by removals of industrial plants and equipment and from Germany's external assets. Sufficient machinery and resources were to be left to enable the German people to reach a fairly decent standard of living.

Territorially, Germany was split into two areas: the area east of the Oder to be divided between Russia and Poland, and the area west of the Oder to be divided into four Allied zones of occupation—U.S., British, Russian and French.

No agreement was reached in the Potsdam conference on regulation of traffic on the Danube river, the Dardanelles, the Black Sea straits, the Rhine, the Kiel canal and the inland waterways which border two or more European nations.

*Paris.*—July 29–Oct. 15, 1946. Present: representatives of 21 nations that had waged war with substantial force against the European members of the axis. The conference met, primarily, to consider and make recommendations for the Security council's draft treaties for Italy, the Balkan states of Rumania, Bulgaria and Hungary and for Finland. Substantive issues, generated by consideration of the treaties, concerned: (1) boundary of Trieste and that between Italy and Yugoslavia; (2) the form and administration of a government of Trieste; (3) territorial adjustments between Russia and Poland of territory east of the Oder; (4) reparations; (5) compensations (finally based on a compromise formula of 75% proposed by France); (6) restitutions; *e.g.,* objects of artistic, historical or archaeological value and property seized during religious or racial persecution; (7) settlements of disputes arising from enforcing the draft treaties and (8) principles of foreign trade and navigation on the Danube.

**Official Histories and Studies.**—Both the army and the navy had under way in 1947 extensive history publication programs. In the navy, the division of naval history of the office of public relations was established as the office of naval history on July 31, 1944. The program of this office includes a *History of United States Naval Operations in World War II* and a *History of United States Naval Administration in World War II.* The first-named title was being written by Dr. Samuel Eliot Morison (Captain, U.S.N.R.), professor of American history at Harvard university; the second would be the work of Dr. R. G. Albion, professor of history at Princeton university. The first volume of the administrative series was to appear in 1948. Other volumes on logistics, procurement and personnel were contemplated.

In the army, the historical program was handled by the historical division of the special staff, headed by Brig. Gen. Harry J. Malony. The civilian chief historian was Dr. Kent R. Greenfield, a lieutenant colonel in the army ground forces during World War II and, prior to that, head of the history department of Johns Hopkins university. This office had already published and distributed 12 monographs in an *American Forces in Action* series. The titles are: "Volturno," "The Winter Line," "Papuan Campaign," "Salerno," "Merrill's Marauders," "Guam," "The Admiralties," "To Bizerte with the II Corps," "Makin," "Small Unit Action," "St. Lô" and "Omaha Beachhead." Two more were to be released in 1948, completing the series. They were to be entitled "Anzio Beachhead," and "Utah Beach to Cherbourg." However, the principal work of the historical division was the preparation of a 93-vol. history of World War II. This was designed to cover the organization and functioning of the army ground forces, the army service forces and the army air forces. Following these volumes was to be adequate coverage of all military engagements in every theatre of operations. The series was to be completed with individual treatment of the several services which functioned during World War II; *e.g.,* signal corps, women's army corps (WAC), ordnance department, medical corps, quartermaster corps and others. For this work there was assembled a corps of trained historians and writers drawn from many of the leading colleges and universities of the nation. The first volume of this project, *Organization of Ground Combat Troops,* was released in Oct. 1947. Seven volumes were scheduled for release in 1948.

The merger of army, navy and air forces into the department of national defense made necessary the preparation of many studies and manuals designed to modernize administrative, tactical and instructional procedures. In the tactical field, definite progress was being made in thorough planning for the successful employment of the many new weapons developed during and after World War II. In the personnel field, studies were under preparation to determine the best means of officer procurement and for providing career-service channels of advancement for men joining the armed forces.

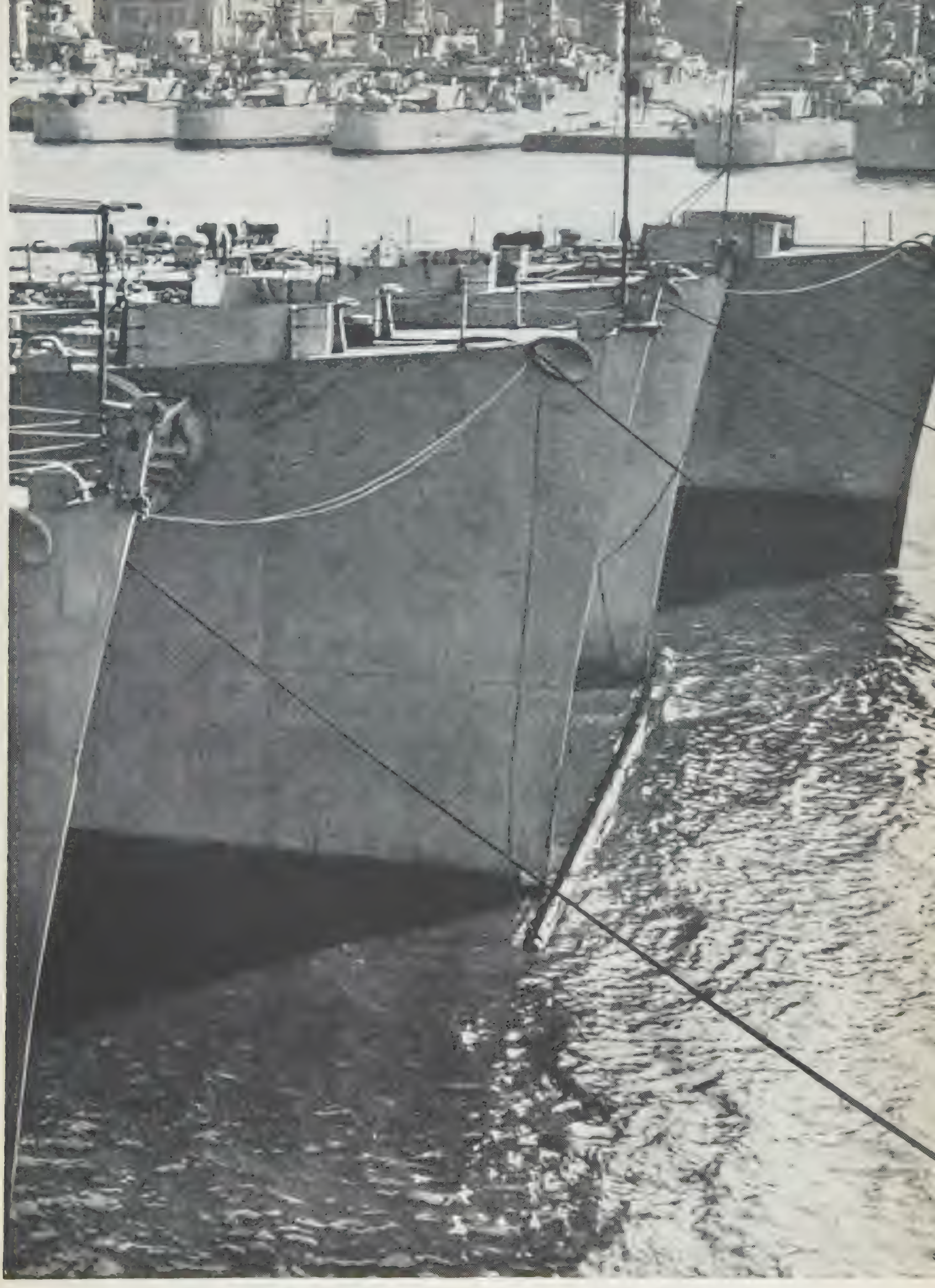
**Paper Balloons.**—One of Japan's major disappointments in the use of weapons was its failure to get results from its paper balloon terror weapons. Made of gray, white or greenish-blue paper, these balloons, 33 ft. in diameter, were set adrift toward the western coast of the United States. They carried either high-explosive demolition bombs or incendiaries. Many were sighted in western areas of Canada and the United States, one was located as far east as Pennsylvania. Competent aviation authority claimed that their chances of hitting a military target were "one in many millions." From a military standpoint, this terror weapon of the Japanese proved to be a complete dud.

**Burials and War Memorials.**—During October, there were returned to the United States the bodies of 10,000 World War II casualties. Three thousand of these, men and women who had lost their lives in the Pacific theatre of war, were returned to the United States through San Francisco; the remainder were returned through New York. An estimated 200,000 dead would be so returned at the request of the next-of-kin. Bodies returned to the United States would be interred in military or private cemeteries at the option of the next-of-kin. The first $75 expense of private burials would be defrayed by the government, while national cemetery interment would be entirely at government expense.

It would be impracticable here to attempt a listing of memorials erected to the dead, erected or planned by states or municipalities. The American Battle Monuments commission began the preliminary work necessary to carry out its functions of providing permanent improvements in U.S. overseas cemeteries for the dead of World War II and of erecting suitable memorials to the achievements of U.S. armed forces, as it did after World War I.

Three memorials were the subject of considerable press comment during the year. The heroic representation of U.S. heroes raising the U.S. flag on Mount Surabachi had been pretty well imprinted on the public mind. During the year, this dramatic memorial, commemorating a glorious feat of arms, was removed from its first location on Constitution avenue in Washington, D.C., to a more appropriate setting near the marine barracks at Quantico, Va.

William C. Westcott, U.S. sculptor, made a striking bust of Maj. Thomas D. Howie, Charleston, S.C., the "Major of St. Lô," who died as his troops broke through German defenses of St. Lô in 1944.



THE ATLANTIC RESERVE FLEET, including battleships and cruisers, anchored at the Philadelphia naval base in 1947, where it was prepared for any action on 30 days' notice. Potentially the most powerful U.S. task force, it had a local reserve complement of more than 1,000 men

"SIGNS OF THE TIMES," a 1947 cartoon by Manning of the *Arizona Republic* (Phoenix) based on communist opposition to what soviet spokesmen termed U.S. dollar imperialism

This bust was presented by Staunton Military academy, Va., where Major Howie had formerly coached football, to the city of St. Lô, France, where it was to be placed in the town square which was to be renamed Place Majeur Thomas D. Howie.

Perhaps one of the most poignant of World War II memorials is to be found at Rindge, N.H. It is known as the Cathedral of the Pines.

Sandy Sloane, U.S. bomber pilot, came from Rindge. A loved spot in his childhood memories had been a knoll on his father's farm where stood a splendid growth of giant pines. The hurricane which swept the New England states in 1938 flattened them, but it also opened up a heretofore unseen view of the whole Wachusett divide. When Sandy became a war casualty, his family and his neighbours began the work of love that today stands as the Cathedral of the Pines. Rocks from every state in the union were sent to be incorporated in the altar of the shrine; someone even sent a pebble from the grave of the marquis de La Fayette. Religious services are held at this simple, rustic shrine.

On Sept. 8, 1946, the Cathedral of the Pines was dedicated to the memory of 1st Lieut. Sanderson Sloane; the Altar of the Nation there erected was consecrated as a memorial to the men and women of New Hampshire who gave their lives in World War II; the field stone pulpit there was named as sacred to the men and women of Rindge who served their country in time of battle.

One interesting factor in World War II memorials is that the man on horseback disappeared from the scene. He and his steed were definitely relegated to a prior era. This too happened to the post-World War I cannon and machine-gun memorials. Instead, communities planned and executed World War II memorials of infinite variety—community centres and auditoriums; parks, playgrounds, athletic stadiums and swimming pools; hospitals; bridges; museums; scholarship funds in colleges; libraries; in one locality a bell tower, in another an airport; the planting of living trees such as the double lane of flowering trees bordering the approach avenue to Baxter General hospital in Spokane, Wash., and the 7,000 trees, one for each of its servicemen and women, at Hagerstown, Md., and a Salvation Army centre honouring the organization's dead.

The cold memorial disappeared.

In its place was one of warmth, radiating the humanity of the U.S. people.

**Who Won World War II.**—The last gun had scarcely ceased firing in World War II when certain sectors of the European press began a systematic crusade to belittle the part played by the United States in that conflict. The following statement by Stalin on Sept. 2, 1946, was somewhat typical: "Today we celebrate the day of victory over imperialist Japan. A year ago the Soviet people and its armed forces victoriously concluded the war against imperialist Japan. Japan signed the act of unconditional surrender. The Soviet people and their armed forces won the victory.

"By so doing, they made an enormous contribution toward world peace."

The campaign continued through 1947. Moscow radio broadcasts, monitored and reprinted in the U.S. press, carried the story along. One such broadcast in December stated that: "The strangulation of democracy, the annihilation of the national sovereignty of the independent European states, the change of these states into American colonies, the imposition on those colonies of a regime like the one in Greece, that is what is concealed behind the trumpeted schemes of American aid to Europe."

(*See* also ATOMIC ENERGY; AVIATION, MILITARY; INTERNATIONAL LAW; MUNITIONS OF WAR; NAVIES OF THE WORLD; PACIFISM; PRISONERS OF WAR; PSYCHIATRY; REFUGEES. *See* also various countries.)

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(R. S. T.)

**Wrestling.** Little Cornell college of Mount Vernon, Ia., highlighted 1947 wrestling by capturing the National A.A.U. team title with 17 points, 5 more than Oklahoma A. and M. Cornell, with a male enrolment of approximately 370 students, also won the National Intercollegiate mat title.

Henry Wittenberg of the New York city police department topped individual competitors with his sixth National A.A.U. title, a record. He retained his 191-lb. championship with the only fall of the final matches. He was voted the outstanding wrestler of the meet.

National A.A.U. champions were: 115 lb.—Grady Peninger, Oklahoma A. and M.; 121 lb.—Charles Ridenour, New York A.C.; 126 lb.—Louis Kachiroubas, University of Illinois; 135 lb.—Lowell Lange, Cornell college; 145 lb.—James Miller, Ithaca, N.Y., Y.M.C.A.; 155 lb.—Orville Long, Southwestern Tech.; 165 lb.—Douglas Lee, Baltimore, Md., Y.M.C.A.; 175 lb.—Dale Thomas, Cornell college; 191 lb.—Henry Wittenberg, New York, N.Y.; heavyweight—Ray Gunkel, Purdue university.

(M. P. W.)

## Wyoming.

A Rocky mountain state, admitted to the union July 10, 1890, as the 44th state. Leadership in the extension of rights to women gave it the name "Equality state." Land area 97,506 sq.mi.; water area 408 sq.mi.; pop. (1947 est.) 301,546. The 1940 census of 250,742 listed rural population 157,165; urban 93,577; 229,818 native white; 950 Negro; 17,107 foreign born. Capital, Cheyenne (1940: 22,474). Other cities of 10,000 or more: Casper (17,964); Laramie (10,627); Sheridan (10,529).

**History.**—State officials during 1947, elected in Nov. 1946, were: governor, Lester C. Hunt (D.), second term; secretary of state, A. G. Crane (R.); auditor, Everett T. Copenhaver (R.); treasurer, C. J. Rogers (R.); superintendent of public instruction, Edna B. Stolt (R.). Fred H. Blume was re-elected associate justice of the supreme court. Holdover justices were Ralph Kimball and William A. Riner. By rotation William A. Riner became chief justice. A Republican legislature was elected.

State officers are elected for terms of four years; justices six years; members of the senate four years; members of the house of representatives two years. The legislature meets in January of each odd-numbered year.

**Education.**—In 1946–47 there were 626 elementary schools with 1,722 teachers and an enrolment of 40,628. There were 123 high schools with 796 teachers and an enrolment of 13,170.

**Social Insurance and Assistance, Public Welfare and Related Programs.**—Funds allocated in 1947 included $427,509 for dependent children; $2,263,215 for old-age assistance; $329,790 for general welfare; $73,394 for aid to the blind; and $12,500 for child welfare.

There were 3 correctional institutions with inmates (average) and expenditures as follows: penitentiary at Rawlins (290 inmates) $263,000; girls' school at Sheridan (52 inmates) $66,000; and boys' industrial institute at Worland (51 inmates) $92,000.

**Communications.**—Wyoming had 4,312 mi. of oiled or paved roads in 1947. Highway construction contracts totalling more than $15,000,000 including 500 mi. of road were let in 1946 and 1947. The state railroad mileage in 1947 was 1,912.32.

**Banking and Finance.**—On June 30, 1947, there were 29 state banks with deposits of $64,984,638 and resources of $69,293,515. There were 26 national banks with deposits of $139,047,100 and resources of $147,825,918. There were ten savings and loan associations, all but one insured by the federal government.

Total state receipts for the fiscal year ending Sept. 30, 1947, were $26,281,644. Total disbursements were $23,988,674. The bonded debt Sept. 30, 1947, was $1,520,000.

**Ranching and Agriculture.**—Wyoming livestock products sold for approximately $100,000,000 in 1947. Cattle marketing decreased 4%; sheep marketing remained about the same. Other farm products were valued at an estimated $45,000,000. Crop production was above average.

*Leading Agricultural Products of Wyoming, 1947 and 1946*

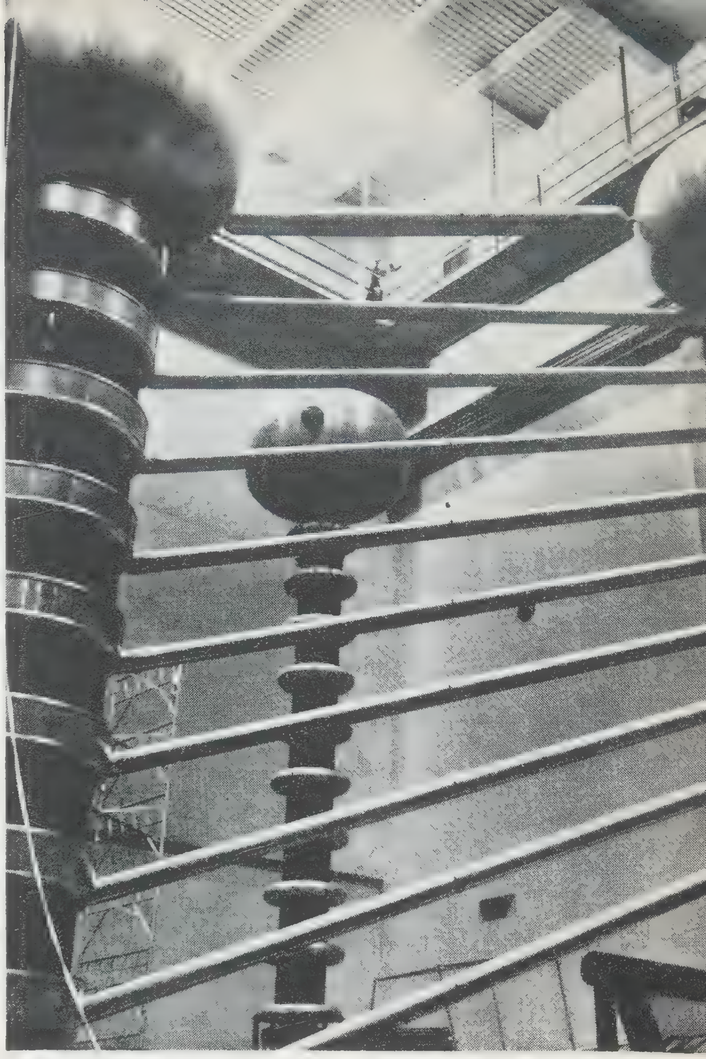
| Crop | 1947 | 1946 |
|---|---|---|
| Corn, bu. | 1,235,000 | 1,122,000 |
| Winter wheat, bu. | 4,687,000 | 4,902,000 |
| Spring wheat, bu. | 1,443,000 | 1,330,000 |
| Oats, bu. | 5,049,000 | 4,666,000 |
| Barley, bu. | 4,712,000 | 4,500,000 |
| All hay, tons | 1,325,000 | 1,243,000 |
| Beans, cwt. | 1,444,000 | 1,305,000 |
| Sugar beets, tons | 454,000 | 421,000 |
| Potatoes, bu. | 2,480,000 | 2,542,000 |

**Manufacturing.**—Employment in manufacturing (average, April, May and June 1947) 6,374; 8,485 were employed in mineral and oil production and 16,075 in trade. (L. C. H.)

**Mineral Production.**—The taxable valuation of Wyoming mineral products in 1947 on 1946 production was as follows: petroleum $40,406,248; bituminous coal $15,128,508; iron $1,761,833; bentonite $317,886; natural gas $1,537,109; other minerals $318,209.

## X-Ray and Radiology.

The importance of standardization of X-ray apparatus, in order to ensure efficiency of operation and interchangeability of essential parts produced by different manufacturers, had been recognized for many years. A degree of success in standardization of some accessories had been attained by the American Standards association. A useful publication approved by this association is *American Standard Definitions of Electrical Terms* which contains sections on radiology. Not until 1947 did attempts to standardize apparatus for use in medical radiology meet with practical success. This achievement was the result of work of the department of medicine and surgery of the Veterans' administration of the U.S. government.



THE 1,400,000-VOLT X-ray generator at the national bureau of standards laboratory in Washington, D.C., which was being used in 1947 to study X-radiation hazards and proper safety measures for industrial workers using high-voltage X-ray machines

In April 1946 the chief medical director of the Veterans' administration appointed a director for radiology. The latter in turn appointed a branch director of radiology in each of the 13 branch areas into which the U.S. was divided. Surveys made by the branch directors indicated that most of the X-ray equipment in hospitals of the Veterans' administration was obsolete and should be replaced by modern apparatus. It was apparent that equipment available on the market at that time was designed prior to World War II and should be modernized.

During World War II the U.S. army had procured X-ray equipment under U.S. army specification number 1319-F. This specification was used by the director for radiology of the Veterans' administration as a foundation. Manufacturers of X-ray apparatus and the branch directors of radiology were requested to furnish information and criticism that would be helpful in developing a modern roentgenographic unit and establishment of standard specifications. This resulted in a tentative specification, VA-XM-20, which was submitted for study to the manufacturers and the branch directors for radiology. A meeting of the manufacturers and branch directors was held and each item of the specification was subjected to careful scrutiny and criticism. Following this the specifications were again rewritten and presented for criticism at a second joint meeting of manufacturers and branch directors. A final draft was then adopted as VA-XM-20A and became the official procurement specification of the Veterans' administration. In this the specifications were set forth in much detail but they provided for the following essential components of a diagnostic roentgenological unit:

1. A 200 milliamperes full-wave rectified transformer arranged for two-tube operation.
2. A control cabinet containing 5 steps of fixed milliamperages; a roentgenographic-fluoroscopic change-over device; starting equipment for a rotating anode tube; and a kilovoltage selector of 2 kv. or less per step.
3. A quick and quiet-acting motor-driven tilt table of rigid construction, providing for 10-in. cross travel of the fluoroscopic tube, the focal spot of which is located 18 in. below the table top. A spot film device capable of taking four exposures on one film is a component part of the table.
4. A floor to ceiling tube stand equipped with a rotating anode tube.

Many requirements of VA-XM-20A represented improvements over apparatus available at the conclusion of World War II and indeed over that generally available when the new specifications became operative early in 1947. Improvements in the tilt table are illustrative of the general modernization of the entire diagnostic roentgenological unit. For example, it is required to have a shockproof fluoroscopic tube; the greater lateral excursion of the fluoroscopic tube enables the radiologist to cover the entire chest or abdomen of the patient without movement of the latter even though the illuminated screen area is small; the fluoroscopic image is clearer and definition sharper than on the old tables because of the 18-in. distance from focal spot to table top; the increased lateral excursion and target-table top distance result in reduced radiation for both patient and fluoroscopist.

The new specifications are important not only because of the improvements which they embody but acceptance of them by all large manufacturers of X-ray apparatus would lead to standardization and consequent elimination of waste and inefficiency.

Equipment of each manufacturer was being subjected to tests by the national bureau of standards to ensure compliance with VA-XM-20A. The data collected from the tests were to be used to perfect the specifications to the end that a federal specification might be published and used by all government agencies for procurement of roentgenological equipment.

Since the government is the largest single purchaser of X-ray equipment it is apparent that government specifications can determine what manufacturers produce. The government, properly advised by civilian radiologists and physicists, would thus provide the best type of equipment for its agencies and assure its availability for civilian hospitals and radiologists throughout the nation.

There were other developments in radiology during 1947 which are worthy of note.

Frank Windholz reported newly recognized roentgenological signs of retroperitoneal lipoma.

There were several reports by independent workers on venous catheterization of the heart. The method is of value as a diagnostic aid in congenital heart disease and in the study of the haemodynamics and the physiology of the cardiovascular system. The technique used by Sosman is as follows: A size 9 French radiopaque catheter, 100–125 cm. in length with opening at the tip, is threaded into the basilic vein and advanced under fluoroscopic control. Fluoroscopy is done on a horizontal table equipped with a spot-film device. The catheter is passed upward into the axillary vein and then into the superior vena cava and right auricle. From there it may be passed either into the inferior vena cava and the renal or hepatic vein or through the tricuspid valve into the right ventricle. From the right ventricle it may be introduced into the pulmonary artery and its branches. Saline perfusion prevents clotting in the catheter.

A book published during 1947 describes the results of treatment of the macrocytic anaemias by the remarkable new synthetic drug, folic acid. Sprue is one of the diseases in which beneficial and curative results had been obtained by administration of this drug. The results in this disease were well demonstrated by roentgenological studies of the small intestine in patients with tropical sprue which was accompanied by macrocytic hyperchromic anaemia. The roentgenographic manifestations of tropical sprue are due to mucosal oedema resulting in segmentation of the small intestine, with alternating spasm, dilatation and hypomotility. The restoration of the small intestine to a normal roentgenographic appearance in patients with tropical sprue under folic acid treatment was striking and conclusive.

Reports from numerous therapists during 1947 indicate that an agent for the effective control of irradiation sickness had at last been found. Sometimes the sickness produced by irradiation treatment is so severe as to necessitate discontinuance of the treatment. The agent used for alleviation of this distressing condition was vitamin $B_6$ (pyridoxine). It is not only an effective treatment for irradiation sickness but there is evidence that it has at least one additional beneficial action, namely, that it increases the leucocyte count and thus offsets the effect of the irradiation which tends to produce leucopenia. (*See* also CANCER; PHOTOGRAPHY; TUBERCULOSIS.)

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**Yachting.** The 1947 yachting season was marked by a continued growth of popular interest and participation in sailing, particularly in boats of the smaller sizes. Among the outstanding events of international interest were the Los Angeles–Honolulu and the Fastnet races, in the deep-water branch of the sport, and the six-metre international events for the Seawanhaka and Scandinavian gold cups.

In the Transpacific race the 70-ft. schooner "Dolphin II," owned by Frank Morgan, U.S. motion picture and radio star, was the winner on corrected time in a fleet of 34 yachts. Class trophies went to W. L. Stewart, Jr.'s "Chubasco" and J. A. Johnson's "Suomi."

In the first postwar revival of the Fastnet, British deep-water classic, the winner among 25 starters was a much-discussed new small cutter, "Myth of Malham," owned by Capt. John H. Illingsworth, R.N., a yacht of many innovations in design and equipment. David Z. Bailey's sloop "Alar" won the Newport–Annapolis race, chief long-distance event on the U.S. Atlantic coast.

On the Great Lakes top honours in the Chicago–Mackinac race went to L. L. Karas' "Cara Mia" and J. B. Ford, Jr.'s "Royono III," while Port Huron–Mackinac winners were O. A. Johnson's "Spookie" and Robert Schleman's "Nyala."

Two U.S. six-metre sloops, "Djinn," owned by a Seawanhaka Corinthian Yacht club syndicate, and George Nichols' "Goose," both built in 1938, were the international winners in this class. "Djinn," sailed by Robert B. Meyer in a series on the Clyde in Scotland, wrested the Seawanhaka cup from the Royal Northern Y.C.'s defender "Johan," sailed by J. Howden Hume, which throughout the season proved the top British yacht in this class. In September six yachts, representing Finland, Great Britain, Italy, Norway, Sweden and the United States met off Oyster Bay, L.I., N.Y., in a series for the Scandinavian Gold cup. Although three of them were new postwar boats—Finland's "Violet," England's "Marletta" and Sweden's "Maybe VI"—"Goose," with Briggs S. Cunningham at its helm, had no trouble

SLOOPS preparing for the first of five ocean course races starting from Los Angeles harbour during the 1947 international championship series. Durwood Knowles of the Bahamas took the title on Sept. 1

in successfully defending the cup in three straight races in behalf of the Seawanhaka Corinthian Y.C.

In the number of boats participating, the fleets at the race week regattas of both Marblehead, Mass., and Larchmont, N.Y., leading U.S. east coast yachting ports, hit new all-time high marks during the season; 522 yachts took part in a single day's racing at Marblehead and 447 at Larchmont.

In spite of a prohibition on the use of timber for yacht building in Great Britain, some shortages of timber and other materials in the European and South American yachting countries, and inflated building costs in North America, a great number of new boats were built, some large yachts but the great majority small craft.

A home-and-home series between the International one-design classes of Bermuda and Long Island sound resulted in a victory for each team in its home waters.

Winners in the international championships series of some of the better-known classes during 1947 were: Star class, "Gem II," Durwood Knowles of Nassau, Bahamas; Snipe class (race held in Switzerland), T. A. Wells, U.S.; Comet class, "Barfly," Owen Merrill, Edgewater Park, N.J.; One-Ten class, Roger Willcox, Cambridge, Mass.

Among the winners of famous trophies was Joseph V. Santry's schooner "Pleione," winner of the King's cup; the yawl "Cotton Blossom III," under charter to W. Mahlon Dickerson, Astor cup; Lincoln Davis, Jr.'s 210 class sloop "Amourette," Manhasset cup; DeCoursey Fales's schooner "Nina," Vineyard trophy; the Buzzards' junior crew (Pocasset, Mass.), Sears cup (U.S. national junior championship); the American Y.C. crew (Rye, N.Y.), Mrs. C. F. Adams trophy (U.S. national women's championship); Indian Harbor (Conn.) Y.C., the Ocean-Great Lakes Challenge cup. (H. L. St.)

## Yale University.

With student and faculty populations reaching a record peak in numbers, 1947 marked the final return of Yale to a peacetime basis. The Yale community of students, faculty and employees amounted to 12,000 persons. Academic attainments also broke records.

Postwar reorganization of certain academic disciplines at the university reached fulfilment in establishment of the divisions of the humanities, the sciences, the arts, engineering and medical affairs under nationally prominent directors.

Alumni participation in Yale affairs was strengthened by creation of a new university council which provides for alumni assistance in examining the contributions of Yale to American life and in making recommendations for strengthening various areas of research and teaching.

Most dramatic event of the year was the formal celebration of the centennial of the Sheffield Scientific school in the fall, marked by awards of honorary degrees to distinguished Yale men in science and presentation of original reports on research by famous scientists. This celebration noted Yale's re-emphasis of its long-standing premise that there should be no artificial barriers separating science and the humanities.

The program of the liberal arts student is so designed that he gains a knowledge of nature through the appropriate sciences in addition to his concentrated work in the humanities. Simultaneously, the undergraduate whose interests are centred in the sciences is expected to have a knowledge of the humanities so his college education will be well rounded.

Scientific research advanced on all fronts in 1947. In botany, genetic studies showed that bacteria can possess sex characteristics. One of the most important U.S. science reports came from the department of psychology where studies indicated that the sense of smell is dependent on radiation and not on chemistry. Yale's cancer program was expanded with creation of a special chair to study the applications of existing research knowledge to treatment of patients. Funds from the navy were used to finance research in astronomy, physics and engineering. (For statistics of endowment, enrolment, faculty, library volumes, etc., *see* UNIVERSITIES AND COLLEGES.) (C. A. L.)

## Yeast.

Brewers' type yeast was shown in 1947 to have protein of higher biological value than torula yeast. A method was published for treating inactive dry yeast so that large amounts may be used in bread. On the basis of urinary excretion studies, the vitamins of active dry yeast were shown to be somewhat more available to human beings than those of compressed yeast. The rickets-producing effect of animal rations high in yeast was explained.

Sparging with carbon dioxide was shown to double fermentative ability of yeast. The mechanism of fermentation was explored by observations of the fact that yeast does not ferment the sugar *d*-fructopyranose. Extensive information on fermentation characteristics and bios requirements of brewers' yeasts was published.

Hexosediphosphoric acid was identified as a normal intermediate substance in the carbohydrate metabolism of yeasts, and existing theories of carbohydrate metabolism in yeast were confirmed through studies of acetate assimilation. The nature of the combined forms of pyridoxine in yeast was investigated. The structure of yeast ribonucleic acid was studied by observing action of the enzyme ribonucleinase.

White sugar was shown to contain substances capable of promoting yeast growth. Research on thermal death rates of yeast cells was published. Melibiose broth fermentation and bios factor response were recommended for use in classifying yeasts. The ability to produce extracellular starch was found to be limited to capsulated nonfermenting asporogenous yeasts. A nonrespiratory variant of the common yeast *Saccharomyces cerevisiae* was produced by exposure to ethylene oxide. Yeast autolyzate was used as a medium for growing the organism that causes a form of influenza. Fermentation by yeast was used to remove sugar from raw egg white before drying in order to improve keeping quality of the dried product.

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**Yemen:** *see* ARABIA.

## Young Men's Christian Association.

The Young Men's Christian association is a world-wide fellowship seeking to improve the spiritual, social, recreational and physical life of young people, particularly young men and boys.

In the United States more than 1,500 students from Y.M.C.A.s, Young Womens Christian associations and Student Christian associations met at the University of Illinois during the 1947 Christmas holidays as the National Student assembly. The Y.M.C.A.s and Y.W.C.A.s co-operated in bringing together approximately 1,100 boys and girls in the first national high school youth conference. The 75th anniversary of Y.M.C.A. work with railroad men was celebrated at an international transportation conference in Cleveland, O.

North American Y.M.C.A.s reached the halfway point in their campaigns to raise an $8,650,000 World Youth fund for restoration of buildings and equipment and strengthening of Y.M.C.A.s in war-devastated countries of Europe and Asia. With the termination of U.S.O. at the end of 1947 the government and public looked to the Y.M.C.A. to take over a major part of the spiritual and recreational service to the armed forces. To do this adequately would mean continuation of the 23 army and navy Y.M.C.A.s which served the armed forces before World War II, large-scale service to men in uniform by civilian Y.M.C.A.s in the United States and new organization at strategic points overseas. The National Council of Y.M.C.A.s in June challenged local associations to find support in their communities for this national service.

The 1,540 Y.M.C.A.s in the United States continued to provide dormitory and food service; spiritual, recreational, social, educational and health programs; personal and vocational counselling for their 1,665,722 members and others. About 224,355 high school boys were enrolled in 7,766 Hi-Y clubs in schools across the country. An outstanding feature of Y.M.C.A. work with youth is the Youth and Government program, an effort to teach democracy by actual practice. Model legislatures met in 11 state capitals. Nine other states made final plans to start the program in 1948.

Expenditures by Y.M.C.A.s in the United States during the year totalled $84,685,300 while capital investments totalled $231,323,800. Officers were Kirtley F. Mather, president, and Eugene E. Barnett, general secretary. Headquarters of the National Council of the Y.M.C.A.s were at 347 Madison avenue, New York 17, N.Y. (O. E. P.)

**Great Britain.**—The 470 associations and Red Triangle clubs in Britain had 83,000 members in 1947, including more than 20,000 former servicemen. More than 300 Y.M.C.A. centres in Britain and 100 overseas served the men and women of the forces, providing not only facilities for rest and refreshment, but also a vast variety of cultural, social and religious activities. A hundred mobile canteens, music and entertainment vans, travelling libraries and cinema vans served isolated posts in 15 countries. A new development in Britain was the work done among thousands of European volunteer workers. Other community services continued.

Civilian Y.M.C.A. members under 30 contributed one-fifth of the British delegation to the World Conference of Christian Youth at Oslo, Norway, of which the Y.M.C.A. was a sponsor. At the plenary meeting of the World's Committee of the Y.M.C.A. at Edinburgh, Scotland, 250 delegates from 46 countries met to plan the reconstruction and extension of Y.M.C.A. work in needy and strategic areas. This meeting was followed by an international Y.M.C.A. conference in Sweden. The services among prisoners of war and displaced persons were to continue; new developments, especially in Africa, were to be initiated. (R. W. J. K.)

## Young Womens Christian Association.

To aid women in 30 war-affected countries, the National Board of the Young Womens Christian Associations of the United States of America held a nation-wide Round-the-World Y.W.C.A. Reconstruction Fund campaign for $2,100,000 during 1947. The drive opened in January, and as early as May the Y.W.C.A. had begun sending its most expert fieldworkers abroad to train new young women leaders, make possible rest leaves for exhausted prewar personnel, assist in repair of bombed-out centres and meet emergency needs in other areas. In addition, students from other countries were brought to the United States for study and observation.

Another innovation during the year was the first joint interracial Y.W.C.A.-Y.M.C.A. youth conference held at Grinnell college, Grinnell, Ia., for 1,300 teen-agers and coeds. In a further effort to prepare young women for the responsibilities of the postwar world, the Y.W.C.A. held 20 Leadership Training institutes for volunteers and professional staff at focal points throughout the U.S. Its 435 community associations participated in National Y.W.C.A. day on Oct. 14 and the entire constituency of 3,000,000 observed World Fellowship week from Nov. 9 to 15 with appropriate services. The National board sent ten delegates to the conference of the World's Council of the Y.W.C.A. held in Hangchow, China, in October.

In 1947 Mrs. Arthur Forrest Anderson was president, and Mrs. Harrison S. Elliott, general secretary of the National Board of the Y.W.C.A., which had headquarters at 600 Lexington avenue, New York 22, N.Y. Continuing publications were: *The Woman's Press; The Bookshelf.* (M. E. S.)

**Great Britain.**—During 1947 the opening of more hostels for young workers and students was the most urgent concern of the Y.W.C.A. in Great Britain; among several opened in London, one provided accommodation for 350 workers. Centres were still being run for women serving overseas, and there were Y.W.C.A. representatives in the international teams working in displaced persons' camps.

Membership had increased by 25% during World War II, and more than 20,000 service women who had used Y.W.C.A. service centres in Britain and overseas wished to keep in touch with the association.

Delegates attended the Oslo World Conference of Christian Youth, and members in other countries shared their holiday camps with British members. Students of many nationalities came to train at the Y.W.C.A. college at Hampstead, London, while British students who had completed the two-year course were working in Lagos, Jerusalem and China.

A conference attended by members from 14 countries was held at Windsor, and in October representatives attended the first postwar conference of the World's Council of the Y.W.C.A. in China. (M. Kr.)

## Yugoslavia.

A federal republic of southeastern Europe, bounded on the north by Austria, on the northeast by Hungary and Rumania, on the east by Bulgaria, on the south by Greece, and on the west by Albania, the Adriatic sea and Italy. Area: approximately 96,200 sq.mi. (including newly acquired territory of Istria and the Julian march); pop. (est. 1947): 15,713,000. Federal units (pop. est. 1947): Serbia 6,566,000; Croatia 3,564,000; Slovenia 1,178,000; Bosnia and Hercegovina 2,414,000; Macedonia 1,120,000; Montenegro 371,000; (Istria and the Julian march 500,000). Chief towns (pop. census 1931): Belgrade (cap. 266,849); Zagreb (185,581); Sarajevo (78,173); Subotica (100,058); Ljubljana (79,056). Languages: Serbo-Croat, Slovene and Macedonian are the official languages; German, Hungarian and Albanian are also spoken by the minorities. Religion: 1931 census, Greek Orthodox 48.7%; Roman Catholics 37.5%; Moslem 11.2%. President of the republic: Dr. Ivan Ribar; prime minister, minister of national defense and commander in chief: Marshal Josip Brozovich or Broz (Tito) (*q.v.*).

**History.**—A five year plan was accepted by the Yugoslav parliament in April 1947. It aimed at the improvement of agriculture and a very large expansion of industry: by 1951 production of coal, coke and iron ore was to be double that of 1939; a strong domestic heavy industry was regarded as an essential basis for the general development of industry and for the raising of the people's standard of living. Output of electricity was to be four times that of 1939. The country's need of agricultural machinery was to be met by home production; artificial fertilizers were to be produced at five times the prewar level, industrial crops and fodder were to be encouraged, and large schemes of irrigation and drainage were to be undertaken in the coastal highlands and the big river valleys.

The plan was directed toward generally accepted ends, for the

CELEBRATION IN BELGRADE, Yugoslavia, on June 22, 1947, commemorating the sixth anniversary of Russia's entrance into World War II. Marshall Tito (wearing white) is shown at the centre of the reviewing stand

over-population and under-employment of the Yugoslav villages could only be relieved by industrialization, and vast public works were necessary before the country would be able even to make good the ravages of war and return to the far from prosperous level of 1939. The source of equipment for these ambitious projects, however, was a primary problem. Trade with Sweden and with Switzerland had brought some valuable machinery, and more was expected from those countries and from Czechoslovakia; but the new regime had made clear its hostility to western financial aid, by declining the invitation to the European Economic conference in July, and even ordinary trade with western countries was made difficult by the strained state of political relations. Trade negotiations had been carried on for some time with Britain, but results had so far been precluded, partly by failure to agree on compensation of expropriated British firms in Yugoslavia and partly by the inability of the British government to deal directly with Belgrade on behalf of individual British exporters.

Throughout the year there were a series of trials for espionage, sabotage and conspiracy. Some were concerned with armed bands of Slovene "White Guards," Croatian "Crusaders" and Serbian "Chetniks." These did undoubtedly exist, although their numbers seemed small and their activities not very dangerous. Other trials seemed intended simply to discourage Yugoslav subjects from having any contact with British or U.S. citizens. Heavy terms of imprisonment, and in some cases death sentences, were given for passing "state secrets" or "slanderous information" to "foreigners," but the evidence published at the trials seemed to show that the former were neither secrets nor dangerous to the state, while the latter were not more than general criticisms of the regime. The most eminent persons condemned in the year's trials were Milos Trifunovitch, former leader of the Serbian Radical party (eight years' imprisonment, January); Professor Boris Furlan, a Slovene scholar of advanced democratic views (death sentence, commuted to life imprisonment, August), and Dragoljub Yovanovitch, Serb left-wing Peasant party leader (nine years' imprisonment, October). By a decree of March 9, former king Peter II and the royal family were deprived of Yugoslav nationality.

Treaties of friendship, co-operation and mutual aid were made with Bulgaria on Nov. 29, with Hungary on Dec. 8 and with Rumania on Dec. 19. Agitation by Communist leaders of the Yugoslav Macedonians against alleged Greek oppression of Macedonian Slavs across the frontier continued and the Yugoslav chargé d'affaires in Athens was withdrawn on Aug. 15. The claims of Yugoslav propaganda with regard to Trieste and Carinthia were, as before, combined with bitter attacks on Britain and the United States. Relations with the authorities of the British zone in Austria were not improved by the existence in the zone of political refugees from Yugoslavia; a special commission was formed by the British government to investigate such cases, and during the year a certain number of Yugoslav "war criminals" were returned to Yugoslavia. There were numerous cases of arrests by the Yugoslav frontier troops of British or U.S. soldiers who had inadvertently strayed across the Yugoslav frontier. In some cases the arrests appeared to have taken place outside Yugoslav territory. The soldiers were sometimes held for weeks or months, and badly treated.

Diplomatic relations with Chile were broken off in October after the expulsion of Yugoslav diplomats there by the Chilean government, which claimed in an official communiqué of Oct. 8 that Yugoslavia was creating in South America "a vast Communist espionage and sabotage organization." (H. S.-W.)

**Education.**—(1946–47) Elementary schools 10,747, scholars 1,500,000; grammar schools 149, scholars 257,937; secondary schools 260, scholars 17,523; secondary technical schools 169, scholars 30,729; faculties at universities and technical colleges 30, students 38,192.

**Finance.**—General state budget (1947): revenue and expenditure amount to 85,854,000,000 dinars. The unit of currency is the dinar; in 1940, 1 dinar = 2.25 U.S. cents.

**Communications.**—Railways (1947) 6,717 mi.; main roads (1947) 20,646 mi.; radio stations 13; receiving sets licensed 210,000.

**Agriculture.**—Wheat (1946) 1,986,000 short tons; under the five-year plan (1946) acreages planted were expected to reach the following figures in 1951: wheat 5,680,000; maize 5,680,000; industrial crops 12,350,000; fruit trees 17,964,000.

**Mineral Production.**—No figures for current production were available in 1947; according to the five-year plan (1946), output in 1951 would attain the following figures (in short tons): coal 18,180,000; crude oil 496,000; iron ore 1,653,000; pig iron 606,000; copper 44,000; lead 71,000.

**Yukon Territory.** Yukon, the most northwesterly political division of Canada, was created in 1898; it is bounded by Alaska, British Columbia, the Northwest Territories and the Arctic ocean. Area, 207,076 sq.mi., of which 1,730 are fresh water; pop. (1941) 4,914, (1947 est.) 8,000. Seat of government: Dawson City. The Yukon is administered by a three-member territorial legislative council elected triennially, and a controller, and is represented federally by one member of parliament.

**History.**—The biggest single economic event of the year 1947 was the sale in August by the U.S. Foreign Liquidation commission of the White Horse refinery to Imperial Oil Ltd. for $1,000,000. From April 1944 to March 1945, the refinery had processed 976,764 bbl. of crude oil brought to it by the Canol pipe line from wells 600 mi. away at Norman Wells, N.W.T. It had cost $6,000,000. Imperial Oil dismantled the refinery and moved it by special trucks over the Alaska highway to Edmonton for reassembly and use in cracking crude oil from the new Leduc, Alberta, fields.

Heavy traffic continued throughout the year on the Alaska highway, kept in good shape by Canadian army engineers. Two bus lines operated from Dawson Creek to Fairbanks, Alaska, via White Horse. Gas stations and stopping places for passengers were established at a few points along the highway.

The coldest Canadian official thermometer reading in history came on Feb. 6, at Fort Selkirk in the Yukon, when the mercury dropped to 86° below zero. This was also the coldest North American reading on record. Barking dogs could be heard 4 mi., an aeroplane engine motor 20 mi. Human breath left vapour trails 100 yd. long. Thousands of rabbits died, adversely affecting fox trapping.

**Mining.**—Placer gold, running up to $100 a pan, was discovered on the banks of the Firth river, 400 mi. north of Dawson City. A new silver-lead mine was opened at Keno Hill, in the famous Mayo district. Production averaged 100 tons of ore daily. An agreement was entered into between the dominion government and the Yukon Coal company for the development and operation of bituminous coal deposits at Tantalus Butte, near Carmacks, on the Lewes river about 100 air miles northwest of White Horse. The coal was for mining, steamship navigation and domestic use.

**Production.**—The gross value of production in 1945 was $5,152,544 (value of Northwest Territories included). The net value was $4,656,166, which was .07% of Canada's 1945 production. The per capita production was $273.89. (*See* also CANADA.) (C. CY.)

**Zanzibar and Pemba:** *see* BRITISH EAST AFRICA.

**Zinc.** The data on world production of zinc, shown in Table I was revised by the addition of figures reported during 1947 giving the best picture of world output that had been available from before the war.

Of the various shifts in output resulting from World War II, those in Europe are, of course, the most striking, especially those in Germany, Belgium and Poland. The 1946 output of these countries was less than a third of the tonnage reported in 1939.

**United States.**—The salient features of the zinc industry in the United States are shown in Table II.

There was an improvement in mine production in the first half of 1947, with a slump in the third quarter. The total for the nine months was 478,563 tons. Production of slab zinc followed

Table I.—*World Production of Zinc, 1939–46*

(In thousands of short tons)

| | 1939 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|---|
| Australia | 79.8 | 87.0 | 83.2 | 84.8 | 88.2 | 83.8 | 86.6 |
| Belgium | 205.1 | 42.6 | 31.7 | 30.6 | 9.6 | 12.9 | 95.0 |
| Canada | 175.6 | 213.6 | 215.8 | 206.5 | 168.5 | 183.3 | 185.7 |
| France | 67.3 | 28.6 | 25.2 | 22.6 | 9.7 | 9.0 | 33.5 |
| Germany | 254.6 | 350.1 | 346.2 | 343.9 | 286.2 | ? | 31.3 |
| Great Britain | 58.3 | 75.7 | 79.8 | 77.5 | 80.7 | 69.5 | 73.1 |
| Italy | 39.0 | 42.8 | 36.9 | 17.0 | — | 1.7 | 17.2 |
| Japan | 56.5 | 68.5 | 61.4 | 67.1 | 69.0 | 20.4 | ? |
| Mexico | 39.0 | 42.6 | 57.0 | 60.0 | 54.3 | 54.0 | 46.3 |
| Netherlands | 22.4 | 4.1 | 5.7 | 5.0 | 2.3 | — | 2.2 |
| Northern Rhodesia | 14.2 | 15.2 | 14.4 | 15.0 | 16.2 | 17.1 | 19.2 |
| Norway | 50.6 | 7.1 | 8.5 | 16.9 | 13.0 | 10.2 | 34.2 |
| Poland | 120.0 | ? | ? | ? | ? | 40.1 | 62.4 |
| Spain | 14.8 | 21.1 | 21.1 | 21.2 | 19.9 | 19.1 | 19.4 |
| U.S.S.R. | 93.7 | ? | ? | ? | ? | ? | ? |
| United States | 507.2 | 822.0 | 891.9 | 942.3 | 869.3 | 764.6 | 772.4 |
| Total | 1,820 | 1,950 | 2,000 | 2,000 | 1,800 | 1,500 | 1,580 |

Table II.—*Data of Zinc Industry in the U.S., 1939–46*

(In thousands of short tons)

| | 1939 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|---|
| Mine production | 583.8 | 749.1 | 768.0 | 744.2 | 718.6 | 614.4 | 574.8 |
| Smelter production | 507.2 | 822.0 | 891.9 | 942.3 | 869.3 | 764.6 | 772.4 |
| Domestic ores | 491.1 | 652.6 | 630.0 | 594.2 | 574.5 | 467.1 | 459.2 |
| Foreign ores | 16.2 | 169.4 | 261.9 | 348.1 | 294.8 | 297.5 | 269.1 |
| Imports | 67.0 | 323.8 | 404.8 | 593.2 | 486.3 | 478.8 | 376.8 |
| In ore | 36.1 | 289.2 | 368.4 | 537.0 | 422.7 | 381.7 | 272.1 |
| Metal | 30.9 | 34.6 | 36.4 | 56.2 | 63.6 | 97.1 | 104.7 |
| Secondary recovery | 189.6 | 284.0 | 330.5 | 368.5 | 345.5 | 360.4 | 300.7 |
| Consumption | 626.0 | 827.4 | 728.2 | 816.8 | 888.6 | 852.3 | 801.2 |
| Stocks | ? | 92.0 | 155.6 | 261.0 | 298.5 | 328.6 | 269.2 |
| Producers' | 86.3 | 25.1 | 84.4 | 170.6 | 233.7 | 256.2 | 176.2 |
| Consumers' | ? | 66.9 | 71.2 | 90.4 | 64.8 | 72.4 | 93.0 |

the same pattern, with a total of 635,604 tons in the nine months.

**Canada.**—Primary zinc production dropped from 258,607 short tons in 1945 to 235,310 tons in 1946—185,683 tons of metal and 49,627 tons of recoverable zinc in ores exported. This decline extended into 1947, with a total of 207,390 tons for the year.

**Mexico.**—Mine production increased from 153,200 short tons in 1946 to 141,200 tons in the first seven months of 1947, almost equal to the peak war rate of 240,750 tons in 1944.

**Australia.**—Production showed little change in 1947, with 58,270 short tons in the first nine months.

**Belgium.**—The monthly production rate rose from 4,100 short tons in Jan. 1946 to 12,450 tons in Aug. 1947, and the 1947 total through August was 88,460 tons.

**Poland.**—Postwar recovery was not so far advanced as in Belgium. Metal output through Sept. 1947 totalled 58,250 short tons, against 128,955 tons in 1939. (G. A. Ro.)

**Zirconium.** The production of zirconium ores in the United States is not reported, but in 1946 the total shipments of domestic and imported concentrates to consumers exceeded imports by about 7,000 short tons, while at the same time stocks declined by 1,300 tons. The imports include baddeleyite from Brazil, and zircon concentrates and mixed zircon-rutile-ilmenite concentrates, mostly from Australia.

The following table shows such data as were available, in short tons:

| Zircon | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 |
|---|---|---|---|---|---|---|
| Imports | 15,652 | 11,341 | 11,582 | 11,317 | 17,144 | 11,152 |
| Shipments | ? | 5,766 | 8,954 | 14,484 | 15,988 | 20,555 |
| Stocks | | | | | | |
| Industry | 6,549 | 6,705 | 8,197 | 4,867 | 6,313 | 5,059 |
| Government | ? | 4,500 | 5,040 | 4,840 | 2,581 | 2,251 |
| Baddeleyite | | | | | | |
| Imports | 5,002 | 15,283 | 8,891 | 2,332 | 792 | 2,432 |
| Stocks, government | ? | 4,156 | 14,599 | 15,848 | 15,829 | ? |

About two-thirds of the zircon consumption goes into ceramics and the other third is divided about equally among refractories and metals and alloys. Baddeleyite goes mainly to refractories and alloys. (G. A. Ro.)

**Zoology.** The Bikini Scientific Resurvey (Press Summary No. 27, Sept. 11, 1947) conducted by the U.S. navy and co-operating civilian scientists showed that one year after the explosion of two atomic bombs, fish, clams, lobsters, sea urchins, and other inhabitants of the lagoon continued to be slightly radioactive. Contrary to expectation, there were no notable effects on the reproductive cycles of the marine organisms exposed to radiation, nor was there any evidence of mutation in the thousands of plants and animals examined.

WATER-OPOSSUM (yapock), a rare animal added to the Bronx zoo in New York city during 1947. The animal's 14-in. tail was 2 in. longer than its body

The American Society of Zoologists met jointly with the American Association for the Advancement of Science in Chicago, Ill., Dec. 29–31, 1947. A total of 286 papers were scheduled at this meeting compared with 197 in 1946, an increase of 45%.

**Research and Publication.**—From the welter of publications of zoological interest it is possible to consider only a small sample here.

*Embryology and Anatomy.*—Albert Tyler's review of developmental physiology reflects the shift of embryological interest away from morphological problems and toward an increasing preoccupation with the chemistry and physics of the embryo: fertilizin (a substance essential to fertilization in many marine invertebrates) and the fertilization reaction, immunological relations of developing organs and enzyme systems in development. Much work was devoted to the elucidation of the role of a newly-discovered enzyme, hyaluronidase, in fertilization. This enzyme, found in the testes and sperm of mammals, disperses the follicle cells that surround the freshly-ovulated egg, thus making the entry of the fertilizing spermatozoan possible. Lord Rothschild, in a review of the problems of fertilization, suggested that the reason so large a number of spermatozoa are necessary for successful fertilization in mammals is that smaller numbers would fail to provide enough of the enzyme to disperse the coat of follicle cells.

Jane M. Oppenheimer summarized the results of her own and others' mapping of prospective embryonic regions in the eggs of bony fish and the transplantation experiments performed in this group. The basic results were similar to those found in amphibians.

C. H. Danforth, in an important contribution, showed how it is possible for correlated anatomical changes to occur as a consequence of a single gene mutation. He found that a single dominant gene is responsible for various grades of polydactyly (extra digits) in cats. The primary effect of the gene appears to be an increase in the amount of tissue in the embryonic limb, resulting in a change in the size or number of the digits; associated with this change, possibly induced by it, is the development of extra cartilages; these in turn attract extra tendon terminals; this leads to splitting of the muscles to which they lead; and finally nerves, blood vessels and structures of the skin adjust to the altered relations. The new limb with five or six toes is a completely harmonious structure.

Charles Singer and C. Rabin published a definitive study of the preliminary series of six illustrations issued by Andreas Vesalius in 1538, seven years before the publication of his great anatomy. This is an important document for understanding the transition from the anatomy of Galen to that of the renaissance and modern periods.

*Radiobiology.*—Many investigators turned their attention to the possibilities of using radioactive substances, which in 1947 were available in quantity, for physiological studies. M. D. Kamen considered radioactive tracers in biology in a valuable handbook. Miriam P. Finkel studied the transfer of plutonium and radioactive strontium across the placenta following their injection into pregnant mice. Young mice treated *in utero* with strontium and before weaning show retarded growth, defective bone formation and bone cancer (osteogenic sarcoma). Plutonium-treated young showed no immediate pathological changes.

*Natural History, Biography and Taxonomy.*—Edward A. Steinhaus gathered and integrated information bearing on the interrelationships of insects and micro-organisms (viruses, rickettsiae, bacteria, etc.)—a stupendous undertaking for one man. David Lack, in a book of interest to naturalists and students of speciation, restudied Darwin's finches, a group confined to the Galapagos Islands.

The Pacific World series of handbooks was continued by two volumes: one on the birds of the Philippines by Jean Delacour and Ernst Mayr, the other on the mammals of Asia by G. H. H. Tate. Both maintain the high level of the series and the latter would perhaps be of special interest to occidental naturalists for its accurate description of the ecology, habits and taxonomy of unfamiliar forms, among which might be mentioned moles, shrews, bats in great variety, pangolins, monkeys, gibbons, greater and lesser pandas and the civets and mongooses.

G. H. Parker's autobiography is an account of an active life as teacher, traveller and investigator, and contains much of interest about the intimate history of Harvard's biology department over a 60-year period. (*See* also ENDOCRINOLOGY; ENTOMOLOGY; GENETICS; MARINE BIOLOGY; PALAEONTOLOGY, VERTEBRATE; PHYSIOLOGY.)

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(G. P. DU S.)

**Zoological Parks.**—*Australia.*—Laws of the commonwealth prohibiting the importation of all wild ruminants and primates continued in force in 1947; consequently no important collections could be secured from abroad.

*Africa.*—From a comparison of official records, Pretoria, the largest zoo in Africa, might be accredited for propagating more species of valuable mammals than any zoo in the world. The husbandry of the Pretoria collection, in every respect, was appraised the most careful in the world.

*Europe.*—The magnificent collection and country park at Cleres was opened to the public for the first time; the owner, Jean T. Delacour, made arrangements eventually to present the collection to the government of France. The London zoo catalogue indicated that the collection was substantially larger than any other in the world. The zoos of Europe, excepting those in Germany, appeared to be flourishing, particularly those in Antwerp and Copenhagen.

*North and South America.*—No costly or especially interesting physical improvement in any American zoo was undertaken during the year 1947. Instead of erecting new structures there was extensive remodelling of existing buildings and enclosures. These new devices were installed—darkened public space, glass cage fronts, fluorescent lighting, therapeutic lighting, contact heating and air conditioning. Attendance and income at all zoos exceeded that of 1946. The trend to place the building and management of zoological parks under nonprofit zoological societies continued to involve additional institutions, new and old. Commercial dealers imported meagre collections containing only the most familiar species. It was thought that the management of parks probably would find it necessary to employ their own collectors and to arrange exchange of collections with zoos and game departments in other countries. The New York Zoological society secured animals from Africa, Central America and Australia by this means. Several new and interesting species were secured. The acquisition made by New York included platypus and Pere David deer. Charles Wharton secured and brought the first large collection from the Philippines. His collection included: flying lemur, tarsier, tree shrew, cloud rat and monkey-eating eagle. The American Association of Zoological Parks and Aquariums elected Lee S. Crandall, general curator of the New York Zoological park, president of the association for the year 1948. Functions and transactions of the association increased in benefit and scope throughout the year. (RO. B.)

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